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FINAL PHASE II REMEDIAL INVESTIGATION REPORT FOR SITE 1 AND SITE 3 VOLUME 1 OF 4 TEXT AND APPENDICES A THROUGH F NWS YORKTOWN VA

8/1/2012

CH2M HILL

Final

Phase II Remedial Investigation Report
Sites 1 and 3

Naval Weapons Station Yorktown
Yorktown, Virginia

Contract Task Order WE-18

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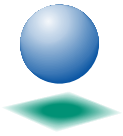

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Virginia Beach, Virginia

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Acronyms and Abbreviations

amsl	above mean sea level
AVS	acid volatile sulfide
AWQC	ambient water quality criteria
BERA	Baseline Ecological Risk Assessment
bgs	below ground surface
BNA	base neutral acids
Cal EPA	California Environmental Protection Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLEAN	Comprehensive Long-Term Environmental Action Navy
CLP	Contract Laboratory Program
COC	constituent of concern
COPC	constituent of potential concern
CR	carcinogenic risk
CSF	cancer slope factor
CSM	conceptual site model
CTO	Contract Task Order
CVOC	chlorinated volatile organic compounds
DCA	dichloroethane
DCE	dichloroethene
DI	deionized
DNAPL	dense non-aqueous phase liquid
DO	dissolved oxygen
DOT	Department of Transportation
DPT	direct push technology
DQO	data quality objective
DRMO	Defense Recycling Material Office
EC	electrical conductivity
ECD	electron capture detector
EPC	exposure point concentration
ERA	Ecological Risk Assessment
ESQD	explosive safety quantity distance
ESV	ecological screening values
FFA	Federal Facilities Agreement
FFS	Focused Feasibility Study
FID	flame ionization detector
FRG	final remediation goal
FS	Feasibility Study
ft	feet
ft/day	feet per day
ft/ft	feet per foot
HHRA	Human Health Risk Assessment
HI	hazard index
HQ	hazard quotient
HSA	hollow-stem auger

IAS	Initial Assessment Study
IDW	investigation-derived waste
IEUBK	Integrated Exposure Uptake Biokinetic
IR	Installation Restoration
IUR	inhalation unit risk factor
LOAEL	lowest observed adverse effect level
LTM	long-term monitoring
LUC	land use controls
µg/L	micrograms per liter
MCL	Maximum Contaminant Level
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MIP	membrane interface probe
mL	milliliter
MS	matrix spike
MSD	matrix spike duplicate
NACIP	Navy Assessment and Control of Installation Pollutants
NAVFAC	Naval Facilities Engineering Command
Navy	Department of the Navy
NCEA	National Center for Environmental Assessment
NOAEL	no observed adverse effect level
NPL	National Priorities List
NRWQC	National Recommended Water Quality Criteria
ORP	oxidation-reduction potential
PAH	polycyclic aromatic hydrocarbons
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
PID	photoionization detector
PPLV	Preliminary Pollutant Limit Value
ppt	parts per thousand
PPRTV	Provisional Peer Reviewed Toxicity Value
QA	quality assurance
QAPP	Quality Assurance Project Plan
QC	quality control
RA	Remedial Action
RAA	remedial action alternatives
RAO	remedial action objective
RCRA	Resource Conservation and Recovery Act
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
RfC	inhalation reference concentration
RfD	reference dose
RI	Remedial Investigation
RME	reasonable maximum exposure
ROD	Record of Decision
RSL	Regional Screening Levels
SEM	simultaneously extractable metals
SERA	Screening-level Ecological Risk Assessment

SMDP	Scientific Management Decision Point
SVOC	semivolatile organic compound
SWMU	Solid Waste Management Units
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TDS	total dissolved solids
TNT	trinitrotoluene
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TRC	Technical Review Committee
TSS	total suspended solids
UF	uncertainty factor
USEPA	United States Environmental Protection Agency
VDEQ	Virginia Department of Environmental Quality
VOC	volatile organic compound
VRP	Voluntary Remediation Program
WPNSTA	Naval Weapons Station

SECTION 1

Introduction

This Phase II Remedial Investigation (RI) Report presents the data and findings obtained from field investigation activities conducted to characterize the nature and extent of contamination and to assess potential risks to human health and the environment at the Naval Environmental Restoration Program Installation Restoration (IR) Sites 1 and 3, located at the Naval Weapons Station (WPNSTA) Yorktown, in Yorktown, Virginia (**Figure 1-1)**. Site 1 (Dudley Road Landfill) and Site 3 (Group 16 Magazine Landfill) were operated as landfills for disposal of waste materials in borrow pits created during sand mining activities between 1965 to 1985 and 1940 to 1970, respectively.

This report is prepared under the United States Department of the Navy (Navy), Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic, Comprehensive Long-Term Environmental Action—Navy (CLEAN) 1000, Contract N62470-08-D-1000, Contract Task Order (CTO) WE-18, for submittal to NAVFAC, United States Environmental Protection Agency (USEPA) Region 3, and Virginia Department of Environmental Quality (VDEQ). The Navy, USEPA, and VDEQ work jointly as the WPNSTA Yorktown Tier I Partnering Team.

Historical investigations conducted at Sites 1 and 3 from 1992 to 1999 led to a Record of Decision (ROD) for soil and surface debris at both sites. However, groundwater, surface water, and sediment were not addressed in the ROD. A Phase I RI was conducted in 2004 and 2005 to characterize groundwater conditions at each site and compare analytical data to screening criteria to determine which sites needed additional investigations (CH2M HILL, 2007). The Phase I RI concluded that the primary contaminants at Sites 1 and 3 were trichloroethene (TCE) and associated daughter compounds, and that these chemicals had not been fully characterized and assessed for potential risks at each site.

Phase II RI field activities were conducted from January to September 2009 to further characterize the extent of contamination and assess potential environmental and human health risks associated with exposure to environmental media at Sites 1 and 3. Field activities were conducted in accordance with the RI Work Plan titled *Phase II Remedial Investigation Work Plan for Groundwater at Sites 1, 3, and 6 and Long-term Monitoring Work Plan for Site 7, Naval Weapons Station Yorktown, Yorktown, Virginia* (CH2M HILL, 2008).

1.1 Objectives and Approach

The objective of the Phase II RI is to sufficiently characterize the nature and extent of potential contamination in groundwater, surface water, and sediment, and to assess the potential risks posed by this contamination to human health and the environment. A soil investigation was not planned as part of this RI as RODs requiring no further investigation for soil exist at Sites 1 & 3. This evaluation will support the consideration of risk-based cleanup decisions and evaluation of interim, if applicable, and long-term solutions to address impacts to groundwater, surface water, and sediment.

The activities completed to support the objectives of this Phase II RI were as follows:

- Collection of membrane interface probe (MIP) data to delineate the extent of chlorinated volatile organic compounds (CVOCs) in groundwater along the south and east perimeters of the landfill at Site 1 and throughout Site 3
- Collection of direct push technology (DPT) groundwater samples to confirm MIP results
- Installation of permanent monitoring wells at locations based on MIP and DPT results
- Completion of a water-level elevation survey, including all new and existing monitoring wells, to determine the directions of groundwater flow
- Completion of slug testing to determine hydraulic conductivity and flow rates
- Collection of groundwater samples from all new and existing monitoring wells

- Collection of sediment pore-water samples to evaluate groundwater discharge to surface water
- Collection of surface water and sediment samples
- Collection of soil samples to determine if a groundwater contaminant source remained at Site 3
- Quantitative assessment of the potential human health and ecological risks associated with exposure to contaminated site media, where identified

If the partnering team agrees to these recommendations for additional investigation, they will be completed as pre-Feasibility study investigation (Site 1) and a pre-Design investigation (Site 3). [1]

1.2 Site Background

This subsection provides a general summary of WPNSTA Yorktown and Sites 1 and 3, including site descriptions and environmental history.

1.2.1 Naval Weapons Station Yorktown

WPNSTA Yorktown is a 10,624-acre installation located on the Virginia Peninsula in York and James City Counties and the City of Newport News, Virginia (**Figure 1-1**). WPNSTA Yorktown is bounded on the northwest by WPNSTA Yorktown Cheatham Annex and the King's Creek Commerce Center; on the northeast by the York River and the Colonial National Historic Parkway; on the southwest by Route 143 and Interstate 64; and on the southeast by Route 238 and the town of Lackey.

Originally named the U.S. Mine Depot, WPNSTA Yorktown was established in 1918 to support the laying of mines in the North Sea during World War I. For 20 years after World War I, the depot continued to receive, reclaim, store, and issue mines, depth charges, and related materials. During World War II, the facility was expanded to include three trinitrotoluene (TNT) loading plants and new torpedo overhaul facilities. A research and development laboratory for experimentation with high explosives was established in 1944. In 1947, a quality evaluation laboratory was developed to monitor special tasks assigned to the facility which included the design and development of depth charges and advanced underwater weapons. On August 7, 1959, the depot was renamed the U.S. Naval Weapons Station. Today, the primary mission of WPNSTA Yorktown is to provide ordnance, technical support, and related services to sustain the war-fighting capability of the armed forces in support of national military strategy.

Comprehensive environmental restoration activities at WPNSTA Yorktown began in 1984 under the Navy Assessment and Control of Installation Pollutants (NACIP) and ER Programs. On October 15, 1992, WPNSTA Yorktown was added to the National Priorities List (NPL), which required all subsequent environmental restoration activities to be conducted under CERCLA. The Navy and USEPA executed a Federal Facilities Agreement (FFA) in August 1994, which incorporated the Resource Conservation and Recovery Act (RCRA) Solid Waste Management Units (SWMUs) and identified 16 sites, including Sites 1 and 3.

1.2.2 Site 1

Site 1, the Dudley Road Landfill, is a 10-acre landfill located in the northern portion of WPNSTA Yorktown west of Indian Field Creek and north of an unnamed tributary to the creek (**Figure 1-2**). Site 1 is grassy and generally flat. The topography gently slopes downwards to the east, with more pronounced slopes east and south toward Indian Field Creek and the unnamed tributary to Indian Field Creek. The area surrounding the soil-covered landfill is wooded and acts as a riparian buffer for the adjacent Indian Field Creek.

Site 1 was historically used for sand mining activities, resulting in the construction of two borrow pits, which were subsequently filled with waste materials. Between 1965 and 1979, Site 1 was operated as a landfill under a VDEQ

[1] The Sites 1 and 3 activities outlined above were completed with the intention of fully characterizing these sites for the purpose of eventual remedy evaluation and selection. However, following completion of the RI activities and review of data associated with the field investigation, some data gaps were identified. Consequently, while data are sufficient to finalize this RI, recommendations for further investigation to support the future Feasibility Studies (FSs) and designs are identified in this report.

Conditional Permit (No. 287) for disposal of solid waste materials in the borrow pits. Disposed waste included asbestos from insulation on steam piping; empty oil, grease, paint, and solvent containers; nitramine-contaminated carbon; household appliances; scrap metal banding; construction debris; tree limbs; lumber; packaging wastes; electrical wires; waste oil; and plastic lens grinding waste. These wastes were estimated at disposal quantities of 17 tons per year for approximately 15 years. In 1979, the landfill was closed except for the disposal of plastic lens grinding residues, which continued for 2 years after the closure of the main landfill. Historical documentation indicates that the landfill did not receive additional wastes from 1981 through 1985, when the landfill was officially closed.

In 1999, metal surface debris and 413 tons of arsenic-contaminated waste/soil were removed from Site 1 for offsite disposal. The old landfill area was regraded, covered with 18 inches of backfill and 6 inches of topsoil, and seeded (OHM, 2001).

1.2.3 Site 3

Site 3, the Group 16 Magazines Landfill, is a two-acre wooded area behind the former Group 16 Magazines, located in the northern portion of WPNSTA Yorktown west of Indian Field Creek (**Figure 1-3**) and south of Site 1. The area adjacent to Indian Field Creek is covered by woods that act as a riparian buffer for surface water runoff. North and south of Site 3 are two unnamed tributaries that lead into Indian Field Creek.

Site 3 is named for its proximity to the Group 16 Magazines; however, the history of this landfill is unrelated to operations at the Magazines. The site was originally used for sand mining and consisted of one borrow pit to a depth of 10 feet below ground surface (bgs). Between 1940 and 1970, Site 3 was operated as a landfill. Approximately 90 tons of waste was disposed of in the borrow pit and reportedly included solvents, sludge from boiler cleaning operations, grease trap wastes, Imhoff tank skimmings (containing oil and grease), and animal carcasses. The Site 3 waste boundary was approximated as part of previous investigations that included a geophysical survey. Test pit investigations performed in 1997 confirmed the presence of scrap metal, 55-gallon metal drums, grease, wax, lumber, banding, concrete blocks, plastic sheeting, and surface debris.

In 1999, a Remedial Action (RA) was completed and resulted in the removal of 284 tons of polycyclic aromatic hydrocarbon (PAH) contaminated soil and landfill waste, including approximately 50 drums of solidified resin and powdered aluminum, 127 tons of abandoned dry cell batteries, and 4,700 tons of galley waste (**Figure 1-3**). After removal of the wastes and contaminated soil, the area was regraded and covered with 4 inches of topsoil (OHM, 2001).

1.3 Report Organization

The RI Report is organized as follows:

- Section 1 – Introduction
- Section 2 – Summary of Previous Investigations and Remedial Actions
- Section 3 – Field Investigation Methods
- Section 4 – Physical Characteristics
- Section 5 – Nature and Extent of Contamination
- Section 6 – Human Health Risk Assessment
- Section 7 – Ecological Risk Assessment
- Section 8 – Fate and Transport and Conceptual Site Model
- Section 9 – Conclusions and Recommendations
- Section 10 - References

Tables and figures are provided at the end of each respective section. Appendices are provided electronically in PDF format on CD-ROM.

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE1-1_SITE1_3_LOCATION.MXD MUNWIN 9/28/10

Legend

- Yorktown Naval Weapons Station Base Boundary
- Generalized Study Area
- Camp Peary Scarp
- Buildings and Structures
- Shoreline and Water Bodies
- Interstate 64
- Magazines
- Kings Creek Commerce Center
- City/County Boundaries

N
W E
S

0 3,500 7,000
Feet

Figure 1-1
Base and Sites 1 and 3 Map
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE1-2_SITE1.MXD MUNWIN 9/28/10

Legend

- Landfill Area with New Cap (2001 Remedial Action, OHM)
- Area of Excavation of Arsenic Contaminated Soil (2001 Remedial Action, OHM)
- Approximate boundary of former clearing and activities
- Elevation Contour (10 ft interval)

N
W E
S

0 150 300
Feet

Figure 1-2
Site 1 Dudley Road Landfill
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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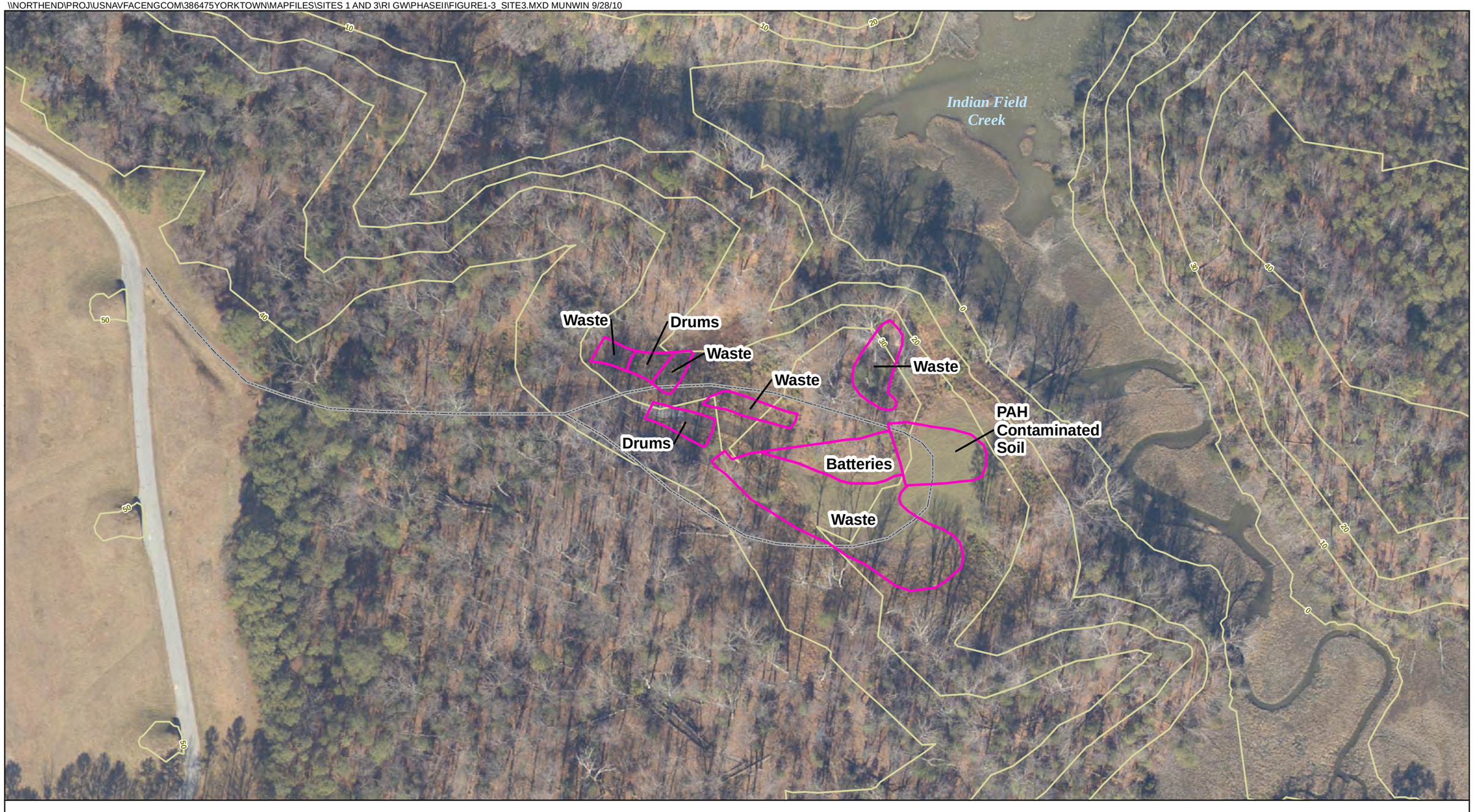
\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE1-3_SITE3.MXD MUNWIN 9/28/10



Legend

- Approximate Waste Limits
- Landfill Access Road
- Elevation Contours (10 ft interval)

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0 100 200 Feet

Figure 1-3
Site 3 Group 16 Magazine Landfill
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 2

Summary of Previous Investigations and Remedial Actions

This section presents a summary of the results and findings from previous investigations and remedial actions conducted at Sites 1 and 3 prior to the field investigation activities completed as part of this Phase II RI. Previous investigations included the collection of soil, groundwater, surface water, and sediment samples. **Figures 2-1** and **2-2** present the sample locations previously collected.

2.1 Initial Assessment Study (1984)

The Initial Assessment Study (IAS) was documented in the report titled *Initial Assessment Study of Naval Weapons Station Yorktown, Virginia* (NEESA, 1984). The IAS was conducted to identify and assess sites posing a potential threat to human health and the environment because of prior waste management activities at various sites, including Sites 1 and 3. Activity records related to waste generation, handling, and disposal were reviewed; physical conditions at the site were characterized; and migration pathways and potential receptors were identified. The results of the data evaluation were used to develop recommendations concerning the need for a confirmation study at Sites 1 and 3. The IAS concluded that because migration pathways to groundwater and surface water are present at Sites 1 and 3, sampling would be required to verify the presence of contamination and determine the need for further characterization and/or remediation.

2.2 Confirmation Study Round I (1986)

In 1986, groundwater, surface water, and sediment sampling was conducted at Sites 1 and 3. The purpose of the study was to verify the presence or absence of contamination at each site recommended for further investigation in the IAS. Sites 1 and 3 were investigated in conjunction with Sites 11 and 17, due to their close proximity to one another. This study was documented in the report titled *Confirmation Study Step IA (Verification), Round One*, (Dames & Moore, 1986).

During the investigation, monitoring wells 1GW04, 1GW05, 3GW06, 3GW07, and 3GW08[2] were installed and sampled at Sites 1 and 3 (**Figure 2-1** and **2-2**). Samples were analyzed for volatile organic compounds (VOCs), pesticides and polychlorinated biphenyls (PCBs), inorganic constituents, and explosives. Two surface water samples (1SW01 and 1SW02) and two sediment samples (1SD01 and 1SD02) were collected and analyzed for the same constituents (**Figure 2-1** and **2-2**).

TCE was observed above the Federal Safe Drinking Water Act Maximum Contaminant Level (MCL) (5 micrograms per liter [µg/L]) at Site 3 monitoring wells 3GW07 (17 µg/L) and 3GW08 (37 µg/L). Inorganic constituents were detected in groundwater at Site 1 (antimony, arsenic, barium, lead, nickel, and zinc) and Site 3 (arsenic, barium, and zinc), but concentrations were below the regulatory standards.

Two sediment samples were collected within Indian Field Creek. Samples 1SD01 and 1SD02 were collected downgradient and upgradient of both Sites 1 and 3, respectively. Several inorganic constituents (arsenic, barium, chromium, copper, nickel, and zinc) and the explosive hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) were detected. Overall concentrations of constituents detected in these samples were comparable at locations 1SD01 and 1SD02.

In the surface water samples collected at the same locations as the sediment samples, antimony, barium, chromium, lead, mercury, selenium, silver, thallium, and zinc were detected. Overall concentrations of these constituents were comparable at both sample locations. RDX was not detected in surface water samples.

[2] 3GW08 was damaged and replaced in 2004. The replacement well was designated as 3GW08B, and was installed immediately adjacent to and at the same depth interval as the initial well.

There were no CVOCs detected in the surface water and sediment samples. Round I of the Confirmation Study (Dames & Moore, 1986) recommended that a second round of sampling be conducted at Sites 1 and 3.

2.3 Confirmation Study Round II (1988)

Groundwater monitoring wells and surface water and sediment sampling stations sampled during the Round I study at Sites 1 and 3 were sampled and analyzed for VOCs, pesticides/PCBs, inorganic constituents, and explosives. Two new upgradient surface water/sediment locations (1SW/SD03 and 1SW/SD04) were also sampled during this study.

This study was documented in the report titled *Confirmation Study Step IA(Verification), Round Two*, (Dames & Moore, 1988). Sample locations are shown on **Figure 2-1**-and **2-2**.

No constituents exceeded MCLs, ambient water quality criteria (AWQC) or Virginia Groundwater Standards in groundwater at Site 1. Only TCE exceeded a screening criterion (MCL of 5 µg/L) in groundwater at Site 3 (30 µg/L at both 3GW07 and 3GW08).

Several metals were detected in sediment but no constituents exceeded Preliminary Pollutant Limit Values (PPLVs) in sediment. Overall, the concentrations of metals downgradient of Site 3 were comparable to the upgradient concentrations. In surface water, lead (maximum concentration of 14.5 µg/L) and silver (maximum concentration of 11.7 µg/L) exceeded the respective Virginia Water Quality Standards at 1SW02. Downgradient surface water sample concentrations of inorganic constituents were generally higher than the upgradient surface water sample concentrations.

No further site investigations were recommended in the final Confirmation Study Round II (Dames & Moore, 1988).

2.4 Remedial Investigation Interim Report (1991)

The *Final Remedial Investigation Interim Report, Fleet and Industrial Supply Center (Norfolk), Cheatham Annex* (Versar, 1991) was drafted by Dames & Moore in 1989 and revised by Versar in 1991 to incorporate comments from the Technical Review Committee (TRC). The purpose of this report was to facilitate movement of the sites into the RI process. The report summarized and evaluated existing data from the Confirmation Studies for those sites recommended for further investigation in the IAS and, based on these data evaluations, provided recommendations for additional efforts to be conducted to complete an RI. The Interim Report recommended a risk assessment and additional sampling be conducted at Sites 1 and 3. Recommended investigation activities included groundwater, surface water and sediment sampling, as well as a hydrogeologic investigation and site boundary survey.

2.5 Remedial Investigation – Round One (1993)

Round One RI activities took place during the spring/summer 1992. Field activities included the collection of geophysical data, aquifer testing, installation of groundwater monitoring wells (1GW12, 1GW13, 1GW14, 1GW17, 3GW15, and 3GW18), sampling of previously and newly installed monitoring wells, surface and subsurface soil sampling, surface water and sediment sampling, groundwater elevation surveys, and a soil cover survey utilizing Shelby tubes. Groundwater samples were analyzed for Target Compound List (TCL) VOCs, TCL base-neutral acids (BNAs), total and dissolved Total Analyte List (TAL) metals, explosives, pesticides, PCBs, nitrates and total petroleum hydrocarbons (TPH). Surface soil samples were analyzed for VOCs, BNAs, metals, cyanide, and explosives. Subsurface soil samples were analyzed for VOCs, BNAs, and metals. Surface water samples were analyzed for VOCs, BNAs, explosives, and metals (total and dissolved). Sediment samples were analyzed for VOCs, BNAs, metals, and explosives.

Sample locations are shown on **Figure 2-1**-and **2-2**. The investigation results are documented in the report titled *Final Round One Remedial Investigation Report for Sites 1-9, 11, 12, 16-19, and 21, Naval Weapons Station Yorktown, Yorktown, Virginia* (Baker and Weston, 1993).

Site 1 groundwater analytical results from the Round One RI indicated detections of the CVOCs tetrachloroethene (PCE), TCE, and 1,2-dichloroethene (1,2-DCE). The highest concentrations of CVOCs were detected in a groundwater sample from 1GW12, a Columbia aquifer monitoring well in the southwest portion of the Site 1 study area. Concentrations of TCE and 1,2-DCE were 18,000 μg/L and 1,000 μg/L, respectively, in the sample from this well.

At Site 3, TCE was detected in samples from four monitoring wells: 3GW06 (3 J μg/L), 3GW07 (9 J μg/L), 3GW08 (16 μg/L), and 3GW15 (86 μg/L). The compound 1,2-DCE, a daughter product of TCE, was also detected in the sample from 3GW15 at a concentration of 61 μg/L. Data were compared to base-wide maximum background values that were determined from samples collected during the 1993 Round One investigation (Baker and Weston, 1993). Several inorganics, including aluminum, arsenic, cadmium, iron, lead, manganese, nickel, and zinc, were detected in multiple Site 1 and 3 wells at concentrations above base-wide maximum background concentrations for groundwater. At Site 3, barium, beryllium, and chromium were also detected above base-wide background concentrations.

Sediment samples were collected from depth intervals of 0 to 6 inches and 6 to 12 inches bgs at eight locations associated with Site 1 (1SD05 through 1SD12) and two sediment sampling locations associated with Site 3 (3SD01 and 3SD02). Four of the sampling locations were located within the tidal channel of Indian Field Creek (1SD05 through 1SD08), three were located within the tidally-influenced drainages to Indian Creek, and five were collected in drainages not influenced by tides. There were no detections of pesticides/PCBs or explosives in sediment samples associated with Sites 1 and 3. Concentrations of 4-methylphenol, pentachlorophenol, and phenol were detected in sediment samples from the Indian Field Creek channel (1SD05 through 1SD08), but were not detected in samples in the unnamed tributary adjacent to the site (1SD09 through 1SD12). With the exception of common laboratory contaminants that were likely not site-related, there were no other organic constituents detected in sediment samples.

Inorganics were detected in sediment samples from Sites 1 and 3. Aluminum, antimony, arsenic, barium, beryllium, chromium, cobalt, copper, iron, lead, manganese, nickel, selenium, vanadium, and zinc were detected in one or more samples.

Six surface water samples were collected within Indian Field Creek. Four samples (1SW05, 1SW06, 1SW07, 1SW08) were collected downstream of Sites 1 and 3 and one sample (3SW02) was collected upstream of Sites 1 and 3. Surface water sample 3SW01 was located upgradient of Site 1 and downgradient of Site 3. Additionally, one sample was collected from within the unnamed tributary that runs south of Site 1 to Indian Field Creek (1SW09), and one northwest of the landfill area (1SW10). The highest concentrations of the most frequently detected inorganics (arsenic, barium, cadmium, chromium, copper, iron, lead, nickel, and zinc) were either from downstream sample locations within the Indian Field Creek channel (1SW05 through 1SW08) or from the sample location northwest of the main Site 1 landfill area (1SW10). Total and dissolved inorganics concentrations were comparable in all sample locations. Lower concentrations of inorganics were detected in sample locations upstream of Sites 1 and 3. Aluminum (50.4 μg/L at 3SW01), manganese (134 μg/L at 3SW02), and vanadium (14 μg/L at 3SW01) were the only inorganics detected at maximum concentrations in upgradient locations at Sites 1 and 3.

The Round One RI recommended that further groundwater investigation be conducted at Site 1 in order to delineate the extent of CVOC contamination and to identify a potential source area. Another round of groundwater sampling was recommended at Site 3 to evaluate seasonal variation of TCE concentrations. It was also recommended that both sites undergo further geophysical investigation to define the boundaries of waste disposal.

2.6 Remedial Investigation – Round Two (1998)

Consistent with the recommendations made in the Round One RI, additional investigation activities took place at Sites 1 and 3 in January/February 1996 as part of a Round Two RI.

Efforts from this field event are documented in the report titled *Final Round Two Remedial Investigation Report for Sites 6 and 7, Naval Weapons Station Yorktown, Yorktown, Virginia* (Baker, 1998a). Field investigation activities included the installation of Columbia and Yorktown-Eastover aquifer groundwater monitoring wells, excavation of test pits, and the collection of surface soil, subsurface soil, sediment, surface water, and groundwater samples. Sample locations are shown on **Figures 2-1**-and **2-2**. Surface soil samples were analyzed for TCL semi-volatile organic compounds (SVOCs), Pesticides/PCBs, explosives, and TAL organics. Subsurface soil samples and test pits were analyzed for the same parameters as surface soil plus TCL VOCs. Sediment samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, and pesticides/PCBs. Surface water samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals (total and dissolved), and pesticides/ PCBs. Groundwater samples were analyzed for TCL VOCs, TCL SVOCs, explosives, TAL metals (total and dissolved), pesticides/PCBs, nitrate/nitrite, total dissolved solids (TDS)/total suspended solids (TSS), and ammonia.

SVOCs (mainly PAHs) and pesticides were detected in both surface and subsurface soils at Site 1; however these concentrations did not exceed base-wide background concentrations. Potential risks to human health were identified based on exposure to arsenic, beryllium, and iron in surface and subsurface soil at Site 1. The highest inorganic concentrations were detected in the vicinity of monitoring well 1GW12A. The maximum arsenic concentration of 126 milligrams/kilogram (mg/kg) was detected in subsurface soil sample 1SB12A collected in the location of 1GW12A. Potential risks to human health were identified due to elevated concentrations of SVOCs (mainly PAHs) in surface and subsurface soils at Site 3. Elevated concentrations of PAHs were detected in soil sample 3SS10.

CVOCs were detected in groundwater at Sites 1 and 3. TCE and cis-1,2-DCE were detected in Site 1 groundwater. The highest concentrations of TCE (190 µg/L) and cis-1,2-DCE (52 µg/L) in Columbia aquifer groundwater were detected in monitoring well 1GW20 located in the southwest portion of the Site 1 study area. TCE was also detected in Yorktown-Eastover aquifer groundwater at well locations 1GW12A/B and 1GW21. The highest concentration of TCE was detected in 1GW12B (360 µg/L) within the Yorktown-Eastover confining unit (28 to 38 feet bgs) just above the Yorktown-Eastover aquifer. 1,1-DCE, TCE, total 1,2-DCE, and vinyl chloride were detected in one or more of five monitoring wells at Site 3 (3GW07, 3GW08, 3GW15, 3GW15A, 3GW19, and 3GW19A). Maximum concentrations of 1,1-DCE (4 J µg/L), TCE (860 µg/L), total 1,2-DCE (570 µg/L), and vinyl chloride (48 µg/L) were detected at 3GW19. These constituents exceeded one or more of their respective MCLs, with the exception of 1,1-DCE, at all monitoring well locations except for 3GW07.

Several inorganics, including aluminum, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, vanadium, and zinc, were detected in groundwater at Sites 1 and 3 above base-wide background concentrations. Cadmium exceeded the MCL (5 µg/L) in Site 1 Columbia aquifer groundwater at 1GW12 (8.6 µg/L) and chromium exceeded the MCL (100 µg/L) in Yorktown-Eastover aquifer groundwater at 1GW13A (154 µg/L). Chromium also exceeded the MCL at Site 3 in the sample from monitoring well 3GW19 (177 µg/L). Non-carcinogenic and carcinogenic risks for hypothetical future adult and child residents were identified based on exposure to CVOC contamination in Columbia and Yorktown-Eastover aquifer groundwater at Sites 1 and 3.

Several inorganics (aluminum, arsenic, barium, cadmium, chromium, cobalt, copper, iron, lead, manganese, nickel, vanadium, and zinc) were detected in one or more sediment sample locations in the vicinity of Sites 1 and 3 during the Round Two RI. Also, several inorganics (aluminum, barium, cadmium, cobalt, copper, iron, lead, magnesium, manganese, vanadium, and zinc) were detected in one or more surface water samples (1SW15, 1SW16, 1SW17). A source of inorganic contamination could not be determined based on the distribution of contaminants. However, it was determined that potential risks to the aquatic environments at Sites 1 and 3 may exist due to aluminum, copper, and iron in surface water and aluminum, cadmium, copper, iron, lead, and manganese in sediment.

The Round Two RI recommended removal of the surface soil SVOC “hot spot” within the vicinity of 3SS10 at Site 3. It was recommended that land use controls (LUCs) be implemented to restrict the use of Columbia and Yorktown aquifer groundwater as a potable source.

2.7 Hot Spot Delineation (1997)

In addition to the recommended soil removal at Site 3 from the Round Two RI, it was decided that soil with elevated levels of arsenic (maximum concentration detected was 92.5 mg/kg at 1SB12A during Round Two RI) be removed at Site 1 as well. Following the Round Two RI, SVOC "hot spot" delineation sampling was conducted at Sites 1 and 3 to address the risks identified in the RI and aid in removal action design for both sites. Sample locations are shown on **Figure 2-1** and **2-2**. The final remediation goal (FRG) established for arsenic was 63 mg/kg at Site 1, as noted in the *Final Focused Feasibility Study for Sites 1 and 3* (Baker, 1997). At Site 3, the FRG established for total PAHs (carcinogenic fraction) was 10 mg/kg.

The Site 1 "hot spot" delineation was conducted in August and September 1997. Eighteen additional surface soil samples were collected near monitoring wells 1GW12A and 1GW12B in order to further evaluate elevated concentrations of arsenic detected in soil during the Round Two RI. Arsenic concentrations ranged from non-detect to 141 mg/kg.

The Site 3 "hot spot" delineation sampling was conducted in August 1996 and September 1997. In August 1996, five surface soil and one subsurface soil sample were collected around sample location 3SS10, where elevated levels of PAHs had been previously detected. Total PAH concentrations in surface soil ranged from 2.2 mg/kg to 358.4 mg/kg. The subsurface total PAH soil concentration was 4.7 mg/kg. In September 1997, an additional six surface soil and subsurface soil samples were collected. The samples were field-screened using PAH test kits and indicated total PAH detections between 1 and 10 mg/kg. The results of the hot spot delineation sampling were used to support the *Final Focused Feasibility Study for Sites 1 and 3, Naval Weapons Station Yorktown, Yorktown, Virginia* (Baker, 1997).

2.8 Final Focused Feasibility Study (1997)

The purpose of the Final Focused Feasibility Study (FFS) for Sites 1 and 3 (Baker, 1997) was to identify Remedial Action Alternatives (RAAs) to address surface soil contamination at the sites. The FFS involved the development, screening, and detailed analysis of RAAs. The Remedial Action Objective (RAO) developed for Site 1 in the FFS was to mitigate the potential for direct contact of arsenic in soils exceeding the final remediation goal (FRG) (63 mg/kg) by human receptors. This FRG was also considered to be protective of ecological receptors based upon the results of conservative uptake modeling conducted as part of the Round Two RI and available literature toxicity information.

The FFS examined three RAAs to address Site 1 arsenic:

1. No further action
2. Soil cover and surface debris removal
3. Soil cover, surface debris removal and excavation with offsite disposal

Alternative 3 was identified as the preferred alternative.

The RAO developed for Site 3 was to mitigate the potential for direct contact with Total PAHs in soils exceeding the FRG (10 mg/kg) by human receptors, and to prevent ecological effects to terrestrial receptors and eliminate the potential migration of these contaminants to other environmental media. The FFS examined four RAAs to address Site 3 PAHs:

1. No further action
2. No further action with institutional controls and debris removal
3. Soil excavation with onsite treatment and debris removal
4. Soil excavation with offsite disposal and debris removal

Alternative 4 was identified as the preferred alternative.

2.9 Proposed Plan/Record of Decision (1998-1999)

The *Final v2 Proposed Remedial Action Plan for Sites 6 and 7, Naval Weapons Station Yorktown, Yorktown, Virginia* (Baker, 1998b) was released to the public in May 1998 and presented the preferred alternatives identified in the FFS. The *Final Record of Decision for Sites 6 and 7, Naval Weapons Station Yorktown, Yorktown, Virginia* (Baker, 1999) was signed in June 1999. The ROD documents the selected RAs to mitigate the risk posed by soil at Sites 1 and 3.

2.10 Remedial Action (1999)

The RAs at Sites 1 and 3 began in July 1999 and were completed in April 2000. The effort at Site 1 included the removal of metal debris and transporting it to the Defense Recycling Material Office (DRMO); removing the arsenic contaminated waste and disposing it offsite; placing borrow soil in the excavated area; placing additional soil over the landfill area (**Figure 1-2**); grading the landfill area and excavated/backfilled area to provide graded slopes; and restoring the site with upland grasses. Eighteen inches of cover, followed by 6 inches of topsoil were placed on the landfill for a total of 2 feet of soil cover.

The Site 3 effort consisted of the removal and disposal of PAH-contaminated soil per the design plan, backfilling the excavation, and restoring the area (**Figure 1-3**). During the removal action, additional wastes (i.e., unidentified drums, galley waste, and batteries) were discovered and disposed offsite. Additional areas were excavated to confirm that all waste was removed at the site (OHM, 2001). The RA for Site 3 ultimately removed all landfilled waste and resulted in residual soil concentrations at or below residential criteria, instead of the industrial criteria presented in the ROD. The February 2008 *Final Technical Memorandum, Documentation of Post-Remedial Action Site Conditions Site 3 – Group 16 Magazines Landfill* documents the achievement of the Site 3 soil FRGs and the rationale for there being no unacceptable post-remediation human health and ecological risks.

2.11 Long-Term Monitoring (2000)

Long-term monitoring (LTM) at Sites 1 and 3 began with an initial round of sampling in May 2000 to ensure the protectiveness of the previous RAs, and included installation of additional wells, and groundwater, surface water, and sediment sampling for TCL VOCs to monitor the migration of contaminants to surface water bodies. Due to funding delays, LTM did not resume until 2004, at which time four subsequent rounds of sampling were completed (September/October 2004, February 2005, May 2005, and August 2005). LTM ceased following these sampling rounds based on the recommendation of continuing investigations for groundwater through an RI. LTM monitoring well sample results are comparable to those collected during the Phase I RI (discussed below in Section 2.12). CVOCs were detected in Indian Field Creek surface water and sediment. Concentrations of 1,2-DCE and TCE were detected in surface water from Indian Field Creek and its tributaries at maximum concentrations of 3 µg/L and 1 µg/L, respectively. 1,2-DCE was detected in sediment just downstream of Site 3 during the May 2005 round of LTM at a concentration of 180 micrograms per kilogram (µg/kg), but no CVOCs were detected during the August 2005 round of LTM.

2.12 Phase I Remedial Investigation (2007)

As the Sites 1 and 3 ROD and subsequent RAs only involved soil, data gaps remained at both sites for other media, including groundwater, surface water, and sediment. RI activities were planned to address potential contamination in these media. The Phase I RI Report titled *Phase I Remedial Investigation Report for Groundwater at Sites 1, 3, 6, 7, 11, 17, 24, and 25, Naval Weapons Station Yorktown, Yorktown, Virginia* (CH2M HILL, 2007) presented the findings of Phase I field investigation activities and historical data to develop recommendations for an appropriate path forward at each site. The objective of the Phase I RI was to assess the nature and extent of groundwater contamination at each site based on a comparison of available data to MCLs and maximum background concentrations.

Phase I RI field activities were conducted in September and October 2004. At Site 1, three additional monitoring wells were installed and groundwater samples were collected from six monitoring wells. At Site 3, three monitoring wells were sampled.

The primary contaminants identified at Sites 1 and 3 were TCE and its associated daughter products. It was concluded that contaminants in groundwater migrate vertically downwards and towards Indian Field Creek. However, the extent of CVOC contamination at each site could not be fully defined based on the data collected to date.

As a result, the Phase I Report recommended additional investigation activities, specifically:

- MIP to be used to vertically and horizontally delineate the extent of CVOCs in groundwater and to select locations for new monitoring wells based on source areas and identified upgradient and downgradient areas
- Additional sampling to be conducted at the groundwater/surface water interface in order to further evaluate the interaction between groundwater and surface water
- Further investigation to be conducted to determine the extent of the Yorktown-Eastover confining unit at Site 1 to facilitate understanding of the interaction between the Columbia and Yorktown-Eastover aquifers at the site
- One additional monitoring well to be installed east of Indian Field Creek to confirm that migration under the creek has not occurred
- New and existing monitoring wells to be sampled for inorganic constituents, VOCs, and natural attenuation parameters
- Potential human health risks related to groundwater contamination to be quantified

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIG2_1_SITE1_PREVIOUS_SAMPLOCS.MXD BALDRIDG 5/31/2012 7:16:26 PM

Legend

- Columbia Aquifer Monitoring Well
- Yorktown-Eastover Aquifer Monitoring Well
- Test Pit Location
- Staff Gauge Location
- Surface Water/Sediment Sampling Location
- Shelby Tube Sampling Location
- Surface Soil Sampling Location
- Approximate boundary of former clearing and activities

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Figure 2-1
Sampling Locations from Previous Investigations at Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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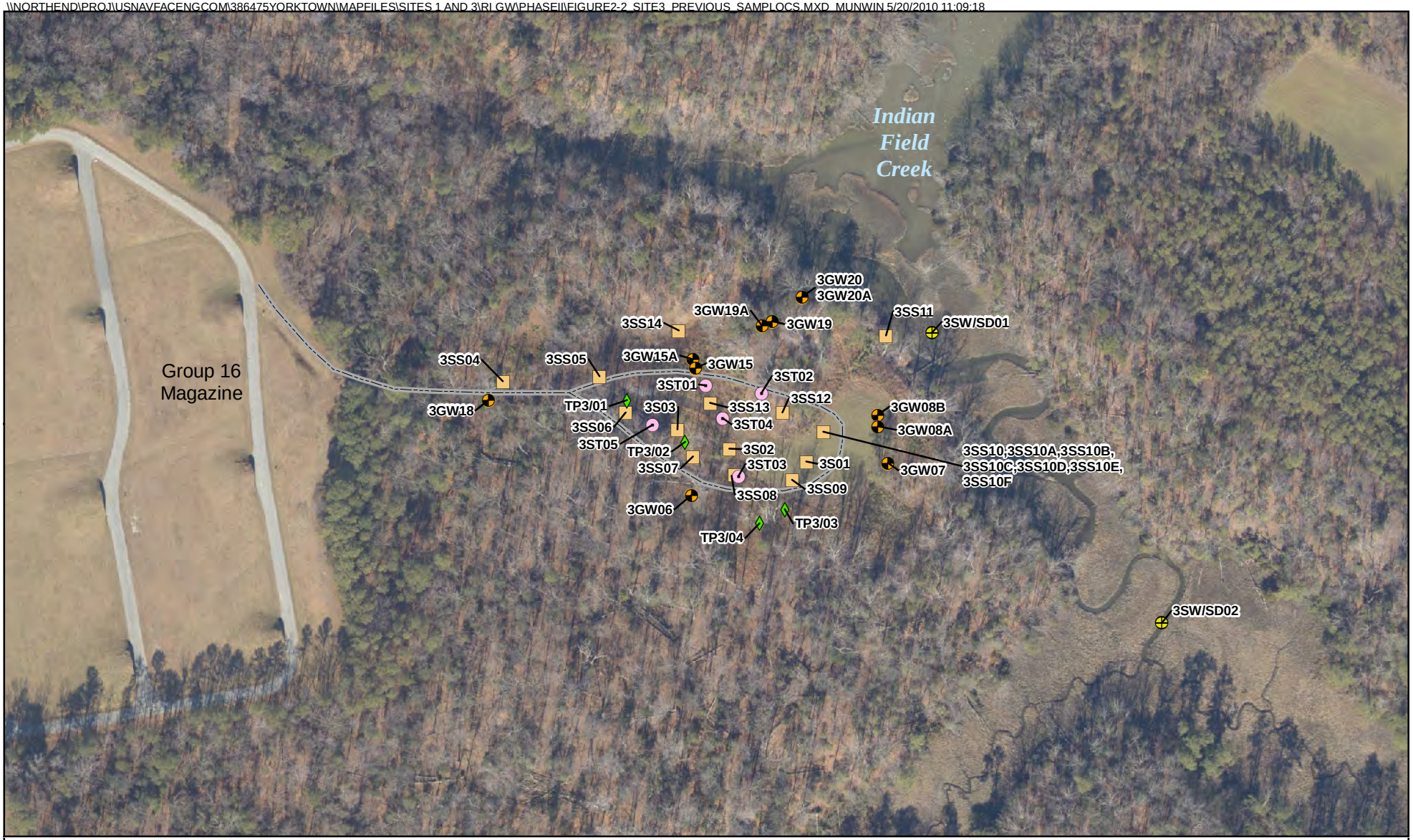

Legend

- Yorktown-Eastover Aquifer Monitoring Well
- Test Pit Location
- Surface Water/Sediment Sampling Location
- Shelby Tube Sampling Location
- Surface Soil Sampling Location
- Landfill Access Road

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Figure 2-2
Sampling Locations from Previous Investigations at Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 3
Field Investigation Methods

This section describes the approach and methodology of the field investigation activities conducted as part of the Phase II RI activities at Sites 1 and 3. Investigation activities at Sites 1 and 3 were conducted from January to September 2009, and included a MIP and DPT investigation, monitoring well installation, groundwater monitoring and sampling, hydraulic conductivity testing, and surface water, sediment, and sediment pore-water sampling. Specific details of the sampling rationale and objectives are provided in the Phase II RI Work Plan for Groundwater at Sites 1, 3, and 6 and Long-Term Monitoring Work Plan at Site 7 (CH2M HILL, 2008).

Table 3-1 summarizes the environmental data collected to characterize the nature and extent of contamination, including the number of samples collected, the media sampled, analyses performed, and sample nomenclature. **Figures 3-1** through **3-3** present the locations of the samples collected in the various environmental media.

The Phase II investigation activities were implemented to support:

- Development of the hydrogeologic conceptual models of both Sites 1 and 3, as discussed in Section 4
- Assessment of the nature, extent, fate, and transport of contamination, potential sources of contamination, and development of a contaminant conceptual site model (CSM), as discussed in Sections 5 and 6
- Assessment of potential risks to human health and the environment, as discussed in Sections 7 and 8
- Information required for the development of a future Feasibility Study (FS), as discussed in Section 9

3.1 MIP and DPT Investigation

A MIP investigation was conducted to delineate the extent of CVOCs at both sites and to aid in selecting the placement of permanent monitoring wells. The MIP system is advanced into the subsurface while collecting continuous data on temperature, electrical conductivity (EC), and CVOC concentrations in the gas phase by using the following probes:

- Photoionization detector (PID) to evaluate relative VOC concentrations through measuring ionization potential using an ultraviolet lamp
- Flame ionization detector (FID) to evaluate relative VOC concentrations through measuring ionization potential using a flame
- Electron capture detector (ECD) to detect chlorinated solvents
- EC meter to determine the lithology by measuring the differences in grain size and also salinity
- Temperature probe to assist in estimation of the location of the water table

At Sites 1 and 3, the MIP was advanced at 1-foot intervals beginning at the ground surface and terminating either at refusal or at the Eastover-Calvert confining unit (encountered beneath the Yorktown-Eastover aquifer at a maximum depth of 96 feet bgs). A continuous MIP survey was completed in each borehole to determine the vertical distribution of CVOCs in the vadose zone and groundwater and to obtain a real-time lithologic profile. MIP locations were immediately filled with bentonite chips and hydrated following the removal of the MIP probe.

DPT groundwater samples were collected to confirm and calibrate the results of the MIP investigation, and DPT soil samples were collected where the MIP results showed a potential detection of CVOCs within the vadose zone. DPT groundwater samples were collected in two areas that indicated an ECD response and two areas that did not indicate any contamination. Groundwater samples were collected using a 4-feet long DPT groundwater sampling tool with a retractable stainless steel well screen and low flow sampling techniques. Soil samples were also collected at Sites 1 and 3 where the MIP results indicated the potential presence of contamination within the vadose zone. Soil samples were collected from 4-feet long acetate sleeves using DPT technology. Soil from several

locations along the length of the sleeve was placed in the same jar at Site 1 and the initial soil sample collected at Site 3. The second soil sample at Site 3 was collected from only the 15- to 16-foot interval because upon visual inspection contamination was only noted in the bottom foot of the interval.

Borehole DPT drilling and MIP logging was performed by Zebra Environmental Inc. of Lynbrooke, New York. **Figure 3-1**-and **Figure 3-2** present the MIP sampling locations at Sites 1 and 3, respectively. A copy of Zebra's MIP report is presented in **Appendix A**.

Site-specific sample collection activities are discussed below.

3.1.1 Site 1

Ten MIP locations at Site 1 were advanced approximately 100 feet apart, near the perimeter of the landfill. The investigation began on the western portion of the site and proceeded along the southern edge of the site; moving south-east towards the unnamed tributary of Indian Fields Creek between Sites 1 and 3 **(Figure 3-1)**. Some locations were moved from the original locations proposed in the work plan due to terrain or vegetation preventing the MIP rig access to the proposed initial investigation locations. The modifications to the MIP locations are not anticipated to have impacted the completeness of the investigation; however, there were fewer points than planned along the eastern side of the landfill.

The MIP data indicated the potential presence of VOCs in the vadose zone at one location at Site 1 (at MIP 21 between 13 and 20 feet bgs). Consequently, one soil sample was collected at MIP 21 from a depth interval of 15 to 19 feet bgs, and analyzed for VOCs using USEPA Method 8260B.

Groundwater samples were collected from four of the 10 MIP locations (MIP 16, 20, 21, and 22) using DPT and analyzed for VOCs using USEPA Method 8260B to confirm MIP readings indicating the presence or absence of VOC contamination. Groundwater samples were collected from MIP 16 and 21 to confirm the presence of contamination, whereas samples from MIP 20 and 22 were collected to confirm that no contamination was present. Sample interval depths were as follows:

- YS01-DW01: 9 to 13 feet (MIP 16)[3]
- YS01-DW02: 35 to 39 feet (MIP 21)
- YS01-DW03: 45 to 49 feet (MIP 22)
- YS01-DW04: 9 to 13 feet (MIP 20)

3.1.2 Site 3

Thirteen MIP locations were advanced approximately 50 to 100 feet apart at Site 3. The investigation was initiated at a start point on a MIP survey grid and moved along adjacent nodes based on detections of CVOCs (one order of magnitude or more above baseline) as shown on **Figure 3-2**. Some locations were moved due to terrain or vegetation preventing the MIP rig access to the originally intended locations; however, the objectives of the investigation were met. MIP sample locations were generally located within the former landfill boundary.

The MIP data indicated the potential presence of VOCs within the vadose zone at one of 13 locations at Site 3 (at MIP 5 between 5 and 17 feet bgs). Two soil samples were collected from MIP 5; one sample at a depth between 12 and 16 feet bgs and analyzed for VOCs; and one sample at a depth between 15 and 19 feet bgs and analyzed for SVOCs, pesticides, PCBs, total inorganics, and TPH. The soil sample collected from 15 to 19 feet bgs was analyzed after the VOC results of the shallower depth came back indicating no VOC contamination and additional analyses were recommended. Soil had previously been excavated in this area to a maximum depth of 5 feet bgs, thus the samples were collected beneath previously excavated soil and backfill.

Groundwater samples were collected from 4 of the 13 MIP locations (MIP 5, 6, 9, and 10) using DPT and analyzed for VOCs. Based on the MIP data, locations MIP 5 and 10 indicated the presence of contamination and one groundwater sample was collected from each location. The MIP data from the other two locations (MIP 6 and 9)

[3] While the highest MIP response was actually detected at the 27 to 37 foot interval, a DPT sample could not be collected at that interval due to low yield. However, the monitoring well installed in this location was screened between 27 to 37 ft bgs."

did not indicate the presence of contamination, and groundwater samples were collected from each location for confirmation. Sample interval depths were as follows:

- YS03-DW01: 30 to 34 feet (MIP 5)
- YS03-DW02: 30 to 34 feet (MIP 9)
- YS03-DW03: 30 to 34 feet (MIP 6)
- YS03-DW04: 9 to 13 feet (MIP 10)

3.2 Monitoring Well Groundwater

3.2.1 Monitoring Well Installation and Development

A total of 14 new monitoring wells were installed at Sites 1 and 3 (**Figure 3-1** and **Figure 3-2**). The total depths of these wells ranged from 16 to 55 feet bgs, and all were installed with screen intervals within the Yorktown-Eastover aquifer. A summary of the monitoring well construction details (including the existing monitoring well network) is summarized in **Table 3-2**. Details of the monitoring well installation activities by site are discussed below.

Parratt Wolff Inc. of Hillsborough, North Carolina, provided 4.25-inch inner diameter (ID) hollow-stem auger (HSA) well drilling and installation services with continuous soil sampling to provide lithologic descriptions. Soil borings and well construction diagrams can be found in **Appendix B**.

A PID was used for monitoring the air at all drilling locations for VOCs as a health and safety precaution and to screen the headspace immediately adjacent to the continuous soil cores collected during well drilling. Based on the location of the highest soil core headspace PID readings collected during the well installation at each location, a dense, non-aqueous-phase liquid (DNAPL) field test using an Indigo Blue test kit was conducted at all locations except 3GW21 and 3GW27. The DNAPL field test consisted of placing soil from the selected interval into a prepared polystyrene test bottle, adding de-ionized water, and shaking to dissolve the water-soluble cube attached to the bottle cap. The cube has a blue water soluble dye disbursed throughout its surface. The blue dye highlights DNAPL by turning them a bright blue. When free petroleum floats to the surface it attaches to a bead that is supplied with the kit and/or attaches to the walls of the container. Data from the MIP investigation, DPT groundwater analysis, and DNAPL field test were used to help determine the placement of permanent monitoring wells.

Each newly-installed monitoring well was constructed with 2-inch ID Schedule 40 PVC screen and riser. Monitoring well screens were machine slotted, 0.010-inch slot widths, and 10 feet in length. A silica sand filter pack was placed in the annular space around the well screen from the bottom of the boring extending to a depth of at least 2 feet above the top of the screen. A 2-foot bentonite layer was placed above the top of the sand pack. After the bentonite was hydrated, a cement-bentonite grout was placed in the remaining annular space. A locking, watertight cap was placed on the PVC pipe and the well identification numbers were clearly marked on the well with water-proof paint. All monitoring wells were completed above grade with a protective steel casing and bollards.

All newly-installed monitoring wells were allowed to sit for at least 48 hours prior to development to allow the bentonite and cement-bentonite annular seals to set. During well development, the monitoring wells were initially surged and pumped to remove sediment that might have entered the well during construction and to promote hydraulic communication between the formation, filter pack, and well screen. The monitoring wells were further developed by pumping with a submersible Whale pump. Water quality parameters, including pH, conductivity, temperature, turbidity, and dissolved oxygen (DO), were measured during development using a Horiba U-22 meter. Development continued until the water cleared. All development and decontamination water was temporarily stored in a labeled, 3,000-gallon Baker tank until it was disposed of off-base at a Navy-approved facility. Development information is included in the **Appendix B** well construction logs.

3.2.2 Site 1

Four new monitoring wells (1GW22 through 1GW25) were installed at Site 1 with depths ranging from 30 to 45 feet bgs. One additional monitoring well was installed across Indian Field Creek in the Yorktown-Eastover aquifer and is associated with both Sites 1 and 3. The rationale for the location of the monitoring wells is as follows:

- Three wells (1GW23, 1GW24, and 1GW25) were installed downgradient of the landfill along the eastern and southeastern site boundary to better delineate the nature and extent of contamination and to evaluate groundwater concentrations adjacent to Indian Field Creek.
- One well (1GW22) was installed based on the highest and deepest ECD response from the MIP results (MIP 16).

3.2.3 Site 3

Nine new monitoring wells (3GW21 through 3GW29) were installed at Site 3 with depths ranging from 16 to 55 feet bgs. The rationale for the locations of the monitoring wells is as follows:

- Three wells (3GW22, 3GW24, and 3GW25) were installed based on the highest ECD responses from the MIP investigation (MIP locations 5, 10 and 4, respectively).
- Two wells (3GW23 and 3GW26) were installed based on the deepest ECD responses from the MIP investigation (MIP locations 8 and 2, respectively).
- Three wells (3GW21, 3GW27, and 3GW28) were installed immediately adjacent to the unnamed tributary to Indian Field Creek to evaluate groundwater concentrations closer to the surface water body.
- One well (3GW29) was installed across Indian Field Creek to evaluate any potential migration of contaminants under the surface water body. This well is associated with both Sites 1 and 3 but contains a Site 3 well identification number.

3.2.4 Groundwater Level Survey

Groundwater levels were collected prior to groundwater monitoring. Groundwater levels were measured and recorded from all new and existing monitoring wells relative to the surveyed reference point at each well using an electronic water-level meter with a resolution of 0.01 feet. **Table 3-3** and **Table 3-4** summarize the groundwater elevations calculated from the groundwater level measurements for the Columbia and Yorktown-Eastover aquifers at Sites 1 and 3.

3.2.5 Groundwater Sampling

Samples collected during the Phase II RI were submitted for analysis to CompuChem Labs Inc., located in Cary, North Carolina. Microbial samples collected during the RI sampling were submitted for analysis to Microbial Insights, located in Rockford, Tennessee.

Groundwater samples were collected using low flow sampling methodology and following procedures described in the Phase II RI Work Plan (CH2M HILL, 2008). Samples were collected using a peristaltic pump (for wells less than 30 feet) or a Monsoon submersible pump (for wells greater than 30 feet), each with disposable tubing. Groundwater quality parameters comprising pH, conductivity, turbidity, DO, temperature, salinity, and oxidation-reduction potential (ORP) were collected during purging of each well using a Horiba U-22 water quality meter and a flow-through cell. Purging was continued until water quality readings collected five minutes apart were stabilized to within 10 percent of one another or until three well volumes were purged. Once the parameters had stabilized, the flow-through cell was disconnected and samples were collected into laboratory-prepared, pre-preserved sample bottles and packed on ice for overnight shipment to CompuChem Labs, Inc.

Dissolved inorganics samples were field-filtered prior to collection into the sample containers. For the collection of groundwater samples for VOC analysis, the vials were filled completely to minimize aeration, and capped to prevent the entrapment of any air bubbles. DO was field tested using Chemets kits to measure and confirm the

DO measured by the Horiba instrument. Nitrite, nitrate, and sulfide were field tested using HACH® test kits to assist in the evaluation of natural attenuation.

3.2.6 Site 1

A total of 17 out of 19 monitoring wells were sampled at Site 1. Existing monitoring wells 1GW12B and 1GW20 could not be sampled as the wells went immediately dry during purging and did not recharge. All Site 1 groundwater samples were submitted for analysis of TCL VOCs, TAL total and dissolved inorganics, chloride, sulfate, total organic carbon (TOC), alkalinity, methane, ethane, and ethene. Additionally, 1GW12 and 1GW22 were sampled for *Dehalococcoides sp.*

Site 3

A total of 19 out of 20 monitoring wells were sampled at Site 3. Monitoring well 3GW07 could not be sampled since the PVC riser was found to be bent/pinched, which prevented sampling equipment from entering the well. The lack of a current sample from 3GW07 is not anticipated to be a data gap since historical sample results from 3GW07 indicated no exceedances of background concentrations for inorganics and the only organic detected was a trace of TCE (3J µg/L). All Site 3 groundwater samples were submitted for analysis of TCL VOCs, TAL total and dissolved inorganics, chloride, sulfate, TOC, alkalinity, methane, ethene, and ethane. Additionally, 3GW19 and 3GW24 were sampled for *Dehalococcoides sp.*

Hydraulic Conductivity Testing

Aquifer hydraulic conductivity properties within the Columbia and Yorktown-Eastover aquifers were estimated through single well hydraulic conductivity tests, commonly referred to as “slug tests”. Rising and falling-head slug tests were performed at two Site 1 monitoring wells (1GW05A and 1GW18) and two Site 3 monitoring wells (3GW19 and 3GW20A). The wells were selected for spatial distribution and at varying depths in the Yorktown-Eastover aquifer to provide data throughout the extent of the aquifer at each site and to generate an overall estimate of the horizontal hydraulic conductivity of the aquifer.

Slug test data provide a rough estimate of the hydrogeologic parameters of the unit proximal to the individual monitoring wells. The tests were conducted by rapidly introducing a solid displacement device (slug) into the well for the falling head test and rapid removal of the slug from the well after equilibration for the rising head test. Groundwater levels were recorded using a Mini TROLL pressure transducer. The slug consisted of a 5-foot length of solid PVC.

Both falling head and rising head tests were conducted for each monitoring well. However, at those wells where the static water level is below the top of the screen, the falling head test can result in the water draining from the well into the gravel pack and vadose zone providing an overestimate of the hydraulic conductivity. Therefore, under these circumstances, only the rising head test data were analyzed. Data were recorded for each test until the water level had recovered to 90 percent of the pre-test level. The slug tests were analyzed using the Bouwer and Rice Method included in *A Slug Test for Determining Hydraulic Conductivity of Unconfined Aquifers with Completely or Partially Penetrative Wells. Water Resources Research 12:423-28* (Bouwer and Rice, 1976).

3.2.7 Surveying

The locations and elevations of the newly-installed monitoring wells were surveyed by Precision Measurements Inc. of Virginia Beach, Virginia, a Virginia-licensed and registered surveyor. Each monitoring well was surveyed for vertical and horizontal control to an accuracy of ±0.01 feet and ±0.1 feet, respectively. Monitoring wells were surveyed at the top of the PVC casing and at the ground surface. The vertical elevations were referenced to National Geodetic Vertical Datum 88 to remain consistent with the existing WPNSTA Yorktown vertical datum. Horizontal coordinates conformed to North American Datum 83 (Latest Adjustment) with ties to the Virginia State Plane Coordinate System. The survey report for these sites is included as **Appendix C**.

3.3 Surface Water and Sediment Sampling

Sediment and surface water samples were collected within the channel of the South-Western Branch of Indian Field Creek and the tributary to the South-Western Branch of Indian Field Creek that flows between Sites 1 and 3

(**Figure 3-3**). The samples were collected to evaluate potential impacts to and potential exposure pathways from sediment and surface water at the sites. Sediment samples were also collected from the marsh sediment along the water bodies.

Surface water and sediment samples were collected starting with downstream locations and working upstream. At each co-located surface water and sediment sampling station, surface water samples were collected prior to the collection of sediment samples. At two of the western-most locations at Site 1 (YS01-SW/SD28 and YS01-SW/SD29) that were included in the work plan, no surface water or sediment samples were collected because these areas were dry and no water or sediment was present (the substrate was considered soil). At one location on the western side of Site 1 (YS01-SW30), no surface water was collected due to insufficient volume; however, the area was saturated, so a sediment sample was collected.

Prior to surface water sample collection, water quality data were measured using a Horiba U-22 water quality meter and the times of high and low tides in the York River tidal cycle for the date of sampling were also recorded. Tidal levels for each sample are included in **Table 3-5;** tidal levels for the background surface water samples are also included in the table, but were collected previously in 2007. Field investigation procedures and sample location information is included in the *Final Remedial Investigation Work Plan for Groundwater at Sites 4, 8, 21, 22, and SSA 14* (CH2M HILL, 2007). Surface water samples were collected by filling a clean glass bottle and transferring the water to the pre-preserved sample bottles provided by the lab. Sediment samples were collected from the top 4 inches of sediment using a stainless steel hand-auger and were transferred into laboratory prepared sample containers by hand after homogenizing the sediment.

Surface water samples were analyzed for TCL VOCs, total and dissolved TAL inorganics and total dissolved solids (TDS). Sediment samples were analyzed for TCL VOCs, TAL inorganics, pH, TOC, acid volatile sulfide (AVS)/simultaneously extractable metals (SEM), grain size and alkalinity.

3.4 Sediment Pore Water Sampling

Sediment pore-water samples were collected within the channel of the South-Western Branch of Indian Field Creek and the tributary to the South-Western Branch of Indian Field Creek that flows between Sites 1 and 3 (**Figure 3-3**). The samples were collected to evaluate potential impacts to and potential exposure pathways from groundwater discharge points to sediment and surface water from both sites.

Sediment diffusion samplers were filled with 150 milliliters (mL) of deionized (DI) water and placed into protective casings with 10-inch long slotted screens. The samplers were marked and placed in the sediment by hand so that the top of the protective casing was flush with the sediment. The samplers were left for 3 weeks to allow sufficient time for equilibrium of CVOC concentrations across the membrane.

One proposed sediment pore-water sample location on the western side of Site 1 (YS01-WN01) was unable to be sampled due to a lack of standing water. Three samples at Site 1 and four samples at Site 3 were collected and analyzed for TCL VOCs.

3.5 Quality Assurance/Quality Control

Samples collected for this field investigation were analyzed using Contract Laboratory Program (CLP) methods with Level IV Quality Assurance (QA)/Quality Control (QC).

Field QA/QC samples were collected during the sampling program. These samples were obtained to:

- Ensure that disposable and reusable sampling equipment were free of contaminants
- Evaluate field methodology
- Establish ambient field background conditions
- Evaluate whether cross-contamination occurred during sampling and/or shipping

Several types of field QA/QC samples were collected and analyzed and are defined below:

- Equipment Rinsate Blank: These samples were obtained by running laboratory grade DI water over/through sample collection equipment after the piece of equipment was decontaminated (for reusable equipment) or prior to the equipment's use (for disposable equipment). These samples were used to determine if decontamination procedures for reusable equipment were adequate and/or if disposable, one-time use equipment was contaminant-free prior to use. An equipment blank sample was taken daily.
- Duplicate Sample: Duplicate samples were collected at the same time and under identical conditions as their associated sample. These samples were collected to evaluate reproducibility of sample results. One duplicate sample was collected for every ten environmental samples collected (or 10 percent).
- Field Blank: Field blanks were collected to evaluate potential impacts to samples due to ambient air conditions in the field. Samples were collected using laboratory-grade DI water, which was poured into sample bottles in the field under the same conditions under which environmental samples were collected. One field blank sample was taken per site per week.
- Trip Blank: Trip blanks were prepared at the laboratory, shipped with the sample containers, and stored onsite near the empty sample containers. Any time VOC samples were packed and shipped to the laboratory, a trip blank sample was included inside the shipping cooler. The trip blanks were analyzed for VOCs, along with the other VOC samples. Trip blanks were used to evaluate whether or not cross-contamination between sampling containers may have occurred during sampling and/or shipping.

In addition to samples collected to monitor field QC, samples were also collected to monitor quality within the laboratory. These included the following:

- Matrix Spike (MS): An aliquot of a matrix (either soil/sediment or water) was spiked with known quantities of specific compounds and subjected to the entire analytical procedure. By measuring recovery, the appropriateness of the method for the matrix was determined.
- Matrix Spike Duplicate (MSD): These samples were collected as second aliquots of the same matrix as the matrix spike to determine the precision of the method.

One MS sample and one MSD sample were collected for every twenty environmental samples collected (or 5 percent of the samples collected) per media per site.

3.6 Decontamination and Waste Management

All non-disposable sampling equipment was decontaminated upon arrival onsite and immediately after each use. DPT rods, groundwater pumps (Monsoon), hand augers, and slug testing rods were all decontaminated using Liquinox , distilled water, and a methanol solution after each use. Drilling augers were steam cleaned after each monitoring well installation in a pre-constructed decontamination pad. Water-level indicators were decontaminated with distilled water after use at each monitoring well. All decontamination rinse water was collected and pumped into a Department of Transportation (DOT)-approved 3,000-gallon Baker tank for storage.

All disposable equipment was collected in contractor bags and disposed of properly.

Soil investigation-derived waste (IDW) was containerized in 55-gallon drums and consisted of soil cuttings from intrusive activities conducted during soil sampling and monitoring well installation. Aqueous IDW was contained in a DOT-approved 3,000-gallon Baker tank and consisted of development and purge water from site field activities. One soil and one liquid composite sample were collected from drums/tank for Full Toxicity Characteristic Leachate Procedure (TCLP) (VOCs, SVOCs, pesticides, and inorganics) and ignitability, corrosivity, and reactivity analysis. After receipt of analyses, the solid IDW was determined to be non-hazardous and was removed from the site by Potomac Environmental Services and disposed of at a Navy approved facility. The aqueous IDW was determined to be hazardous and was removed from the site by Potomac Environmental Services and disposed at a Navy approved facility. The IDW disposal documentation is contained in **Appendix D**.

Health and safety expendables, such as sampling gloves, paper towels, polyethylene sheeting and other materials that came into contact with potential contamination were contained in large plastic bags and placed in municipal waste containers for disposal.

3.7 Environmental Data and Management

This section presents information on the evaluation of soil, groundwater, surface water, sediment, and sediment pore water analytical data collected during the Phase II RI to meet the Navy's Data Quality Objectives (DQOs) as described in the project-specific Quality Assurance Project Plan (QAPP) (CH2M HILL, 2008).

3.7.1 Data Tracking and Validation

The management and tracking of data from the time of field collection to receipt of validated electronic analytical results are of primary importance and affect the overall quality of analytical results. Field samples and their corresponding analytical tests were recorded on chain-of custody forms for submission to the laboratory. Chain-of-custody entries were checked to verify that all designated samples were collected and submitted for the appropriate analyses. Upon receipt of the samples by the laboratory, a comparison to the field information was made to ensure that each sample would be analyzed for the correct parameters and the proper number of QA/QC samples had been collected.

Third-party validation was performed on the analytical data reports from this investigation except for the field collected geochemical data and the pore water analytical results. The pore water analytical results were validated by a CH2M HILL project chemist. Validation procedures established by the national functional guidelines for organic (USEPA, 1994) and inorganic analyses (USEPA, 1993a) were followed during the validation process. Third-party validation reduces the uncertainties associated with data authenticity and usability. The validation reports are presented in **Appendix E**.

3.7.2 Data Qualifiers

Data validation was performed by Data Qual Environmental Services of St. Louis, Missouri. The data qualifiers used were those presented in USEPA Region 3 Modifications to National Functional Guidelines for Organic Data Review, MultiMedia, Multi Concentration (USEPA, 1994) and USEPA Region 3 Modification to National Functional Guidelines for Evaluating Inorganic Analyses (USEPA, 1993a).

The data validation qualifiers, or flags, used for this RI comprise:

- A "B" flag by the data validator indicates that the analytes have also been detected in a field, equipment, or trip blank, or in a laboratory QA/QC sample. The concentration of a "B"-qualified result is less than 5 or 10 times the concentration of the constituent for an associated QA/QC result. If the sample concentration is less than 5 or 10 times the associated blank concentration, the conclusion is that the analyte is not present in the sample.
- A "D" flag indicates that a compound was identified in an analysis at a secondary dilution factor
- An "E" flag indicates that the concentration of the analytes exceeds the calibration range of the gas chromatograph/mass spectrometer instrument (Organic) or the value is estimated due to matrix interferences (Inorganic).
- A "J" flag indicates that the analyte is present but the value may or may not be accurate or precise.
- An "L" flag indicates that the analyte is present, but the reported value may be biased low and the actual value is expected to be higher.
- An "R" flag indicates that the result is unreliable
- A "U" flag indicates that the analyte was not detected and the associated value indicates the approximate minimum sample concentration necessary to quantify a detection.

- A “UJ” flag indicates that the analyte was not detected and the quantitation limit may be inaccurate or imprecise.
- A “UL” flag indicates that the analyte was not detected and the quantitation limit is probably higher than the associated value.
- A “K” flag indicates that the analyte is present, but the reported value may be biased high and the actual value is expected to be lower.

3.8 Regulatory Standards and Risk Based Screening Values

The screening processes used to evaluate risks to human and ecological receptors and to determine if a detected constituent is a constituent of concern (COC) are discussed in Sections 7 and 8. However, to initially screen the analytical data to generate a list of constituents of potential concern (COPCs), each detected constituent was compared to the following regulatory and risk-based screening values.

- Soil sample results were screened against the following:
  - USEPA Regional Screening Levels (RSLs) for Industrial Soil (2010), adjusted as appropriate (adjusted for non-carcinogens by dividing the RSL by 10 to account for cumulative effects from exposure to multiple constituents)
  - USEPA RSLs for Residential Soil (2010), adjusted for non-carcinogens by dividing the RSL by 10 to account for cumulative effects
  - Yorktown subsurface soil background criteria for inorganic constituents (base-wide background inorganic concentrations)
  - Ecological screening values were not used in the screening process for soil because: (1) the ecological conceptual site model indicates that there are no current significant ecological exposure pathways to site soils, and (2) the soil samples collected as part of this RI were subsurface and below the depths (generally 0 to 24 inches) to which ecological receptors are typically exposed.
- Groundwater sample results were screened against:
  - USEPA RSLs for Tap Water (2011), adjusted as appropriate (adjusted for non-carcinogens by dividing the RSL by 10 to account for cumulative effects from exposure to multiple constituents)
  - Federal Safe Drinking Water Act (Title 40 of the Code of Federal Regulations [CFR], Part 141) MCLs and Secondary MCLs
  - Yorktown-Eastover aquifer background criteria for inorganic constituents (base-wide background inorganic concentrations)
- Surface water sample results were screened against:
  - USEPA RSLs for Tap Water (2011) multiplied by 10 to account for reduced exposure in surface water as compared to groundwater. These values were also, adjusted for non-carcinogens by dividing the RSL by 10 to account for cumulative effects from exposure to multiple constituents. Consequently, for non-carcinogens, the screening value is equal to the tap water RSL.
  - Ecological Screening Values (ESVs) compiled from various literature-based sources (see Section 7)
- Sediment sample results were screened against the following:
  - USEPA RSLs for Residential Soil (2011), multiplied by 10 to account for reduced exposure in sediment as compared to soil. These values were also adjusted for non-carcinogens by dividing the RSL by 10 to account for cumulative effects from exposure to multiple constituents. Consequently, for non-carcinogens, the screening value is equal to the residential soil RSL.
  - ESVs compiled from various literature-based sources (see Section 7)

TABLE 3-1
Sites 1 and 3 Sample Summary
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Site	Media	Sample Identification	Sample Depth	Date	Analytes	Collection Method
Site 1	Subsurface Soil	YS01-SO01-0109	15 to 19 feet bgs	1/29/09	TCL VOCs	Direct Push Technology with Acetate Sleeves
	Groundwater	YS01-DW01-0109	9 to 13 feet bgs	1/29/09	TCL VOCs	Monsoon Pump with Disposable Tubing
		YS01-DW02-0109	35 to 39 feet bgs	1/29/09		
		YS01-DW03-0109	45 to 49 feet bgs	1/30/09		
		YS01-DW04-0209	9 to 13 feet bgs	2/2/09		
		YS01-GW04-0309	1.5 to 16.5 feet bgs	3/16/09	TCL VOCs, TAL metals (total and dissolved), chloride, nitrate, nitrite, sulfate, sulfide, TOC, alkalinity, methane, ethane, ethene, **dehalococcoides sp.*	
		YS01-GW04A-0309	32 to 42 feet bgs	3/16/09		
		YS01-GW05-0309	5 - 15.5 feet bgs	3/10/09		
		YS01-GW05A-0309	62 to 72 feet bgs	3/10/09		
		YS01-GW12-0309*	4 to 14 feet bgs	3/13/09		
		YS01-GW12A-0309	49.5 to 64.5 feet bgs	3/12/09		
		YS01-GW13-0309	4 to 14 feet bgs	3/9/09		
		YS01-GW13A-0309	60 to 75 feet bgs	3/9/09		
		YS01-GW14-0309	5 to 15 feet bgs	3/13/09		
		YS01-GW17-0309	2 to 12 feet bgs	3/12/09		
		YS01-GW18-0309	3 to 18 feet bgs	3/11/09		
		YS01-GW19-0309	3 to 13 feet bgs	3/11/09		
		YS01-GW21-0309	25 to 40 feet bgs	3/12/09		
		YS01-GW22-0309	27 to 37 feet bgs	3/16/09		
		YS01-GW23-0309*	20 to 30 feet bgs	3/10/09		
		YS01-GW24-0309	35 to 45 feet bgs	3/10/09		
		YS01-GW25-0309	32 to 42 feet bgs	3/10/09		
	Surface Water	YS01-SW31	Water Surface	7/23/09	TCL VOCs, TAL metals (total and dissolved), total dissolved solids	Laboratory-prepared Glass Amber Bottle
		YS01-SW32		7/21/09		
		YS01-SW33		7/21/09		
	Sediment	YS01-SD30	0 to 4 inches bgs	7/23/09	TCL VOCs, TAL metals, pH, acid volatile sulfide/simutaneously extractable metals (AVS/SEM), TOC, grain size, and alkalinity	Stainless Steel Hand Auger
		YS01-SD31		7/23/09		
		YS01-SD32		7/21/09		
		YS01-SD33		7/21/09		
	Sediment Pore Water	YS01-WN02-0909	0 to 6 inches bgs	9/1/09	TCL VOCS	Passive Diffusion Bags
		YS01-WN03-0909		9/1/09		
Site 3	Subsurface Soil	YS03-SO01-0209	12 to 16 feet bgs	2/2/09	TCL VOCs	Direct Push Technology with Acetate Sleeves
		YS03-SO01-0609	15 to 19 feet bgs	6/24/09	SVOCs, TAL total metals, pesticides, PCBs, and TPHs	
	Groundwater	YS03-DW01-0209	30 to 34 feet bgs	2/2/09	TCL VOCs	Monsoon Pump with Disposable Tubing
		YS03-DW02-0209	30 to 34 feet bgs	2/2/09		
		YS03-DW03-0209	30 to 34 feet bgs	2/2/09		
		YS03-DW04-0209	35 to 39 feet bgs	2/2/09		
		YS03-GW06-0309	15 to 30 feet bgs	3/19/09	TCL VOCs, TAL total and dissolved metals, chloride, nitrate, nitrite, sulfate, sulfide, TOC, alkalinity, methane, ethane, ethene, **dehalococcoides sp.*	
		YS03-GW08A-0309	60 to 75 feet bgs	3/18/09		
		YS03-GW08B-0309	25 to 35 feet bgs	3/18/09		
		YS03-GW15-0309	20 to 35 feet bgs	3/17/09		
		YS03-GW15A-0309	55 to 70 feet bgs	3/17/09		
		YS03-GW18-0309	35 to 50 feet bgs	3/17/09		
		YS03-GW19-0309*	30 to 45 feet bgs	3/19/09		
		YS03-GW19A-0409	66 to 81 feet bgs	4/6/09		
		YS03-GW20-0309	40 to 50 feet bgs	3/20/09		
		YS03-GW20A-0309	70 to 80 feet bgs	3/20/09		
		YS03-GW21-0309	25 to 35 feet bgs	3/18/09		
		YS03-GW22-0309	30 to 40 feet bgs	3/19/09		
		YS03-GW23-0309	40 to 50 feet bgs	3/18/09		
		YS03-GW24-0309*	33 to 43 feet bgs	3/30/09		
		YS03-GW25-0309	26 to 36 feet bgs	3/20/09		
		YS03-GW26-0309	45 to 55 feet bgs	3/17/09		
		YS03-GW27-0309	25 to 25 feet bgs	3/20/09		
		YS03-GW28-0309	6 to 16 feet bgs	3/19/09		
		YS03-GW29-0309	30 to 40 feet bgs	3/30/09		
	Surface Water	YS03-SW03-0709	Water Surface	7/24/09	TCL VOCs, TAL total and dissolved metals, total dissolved solids	Laboratory-prepared Glass Amber Bottle
		YS03-SW04-0709		7/24/09		
		YS03-SW05-0709		7/23/09		
		YS03-SW06-0709		7/22/09		
		YS03-SW07-0709		7/22/09		
		YS03-SW08-0709		7/22/09		
		YS03-SD09-0709		7/22/09		
		YS03-SW10-0709		7/22/09		
		YS03-SW11-0709		7/21/09		
		YS03-SW12-0709		7/21/09		
	Sediment	YS03-SD03-0709	0 to 4 inches bgs	7/24/09	TCL VOCs, TAL metals, pH, AVS/SEM, TOC, grain size, and alkalinity	Stainless Steel Hand Auger
		YS03-SD04-0709		7/24/09		
		YS03-SD05-0709		7/23/09		
		YS03-SD06-0709		7/22/09		
		YS03-SD07-0709		7/22/09		
		YS03-SD08-0709		7/22/09		
		YS03-SD09-0709		7/22/09		
		YS03-SD10-0709		7/22/09		
		YS03-SD11-0709		7/21/09		
		YS03-SD12-0709		7/21/09		
	Sediment Pore Water	YS03-WN01-0709	0 to 6 inches bgs	9/1/09	TCL VOCS	Passive Diffusion Bags
		YS03-WN02-0709		9/2/09		
		YS03-WN03-0709		9/2/09		
		YS03-WN04-0709		9/1/09		

AVS - acid volatile sulfide
bgs - below ground surface
PCB - polychlorinated biphenyl
SEM - simultaneously extracted metals
SVOC - semi-volatile organic compound
TAL - target analyte list
TCL - target compound list
TOC - total organic carbon
TPH - total petroleum hydrocarbon
VOC - volatile organic compound

TABLE 3-2
Monitoring Well Construction Summary
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Monitoring Well	Installation Date	Ground Elevation (ft msl)	TOC Elevation (ft msl)	Well Type	Length of Screen (ft)	Depth of Top of Screen (ft bgs)	Depth of Bottom of Screen (ft bgs)	Elevation of Top of Screen (ft msl)	Elevation of Bottom of Screen (ft msl)	Aquifer
Site 1										
Existing Monitoring Wells										
01GW04	01/07/86	6.40	9.52	2" Sch 40 PVC	15	1.5	16.5	4.90	-10.10	Yorktown-Eastover
01GW04A	5/11/2000	7.57	9.36	2" Sch 40 PVC	10	32	42	-24.43	-34.43	Yorktown-Eastover
01GW05	12/11/1985	35.10	36.74	2" Sch 40 PVC	15	0.5	15.5	34.60	19.60	Columbia
01GW05A	5/11/2000	36.17	37.83	2" Sch 40 PVC	10	62	72	-25.83	-35.83	Yorktown-Eastover
01GW12	6/10/1992	42.50	45.28	4" Sch 40 PVC	10	4	14	38.50	28.50	Columbia
01GW12A	1/26/1996	41.40	43.34	2" Sch 40 PVC	15	49.5	64.5	-8.10	-23.10	Yorktown-Eastover
01GW12B	1/29/1996	40.70	43.52	2" Sch 40 PVC	10	28	38	12.70	2.70	Yorktown-Eastover
01GW13	6/10/1992	40.70	43.54	4" Sch 40 PVC	10	4	14	36.70	26.70	Columbia
01GW13A	1/28/1996	40.30	42.27	2" Sch 40 PVC	15	60	75	-19.70	-34.70	Yorktown-Eastover
01GW14	6/9/1992	44.80	47.98	4" Sch 40 PVC	10	5	15	39.80	29.80	Columbia
01GW17	6/10/1992	38.90	41.49	4" Sch 40 PVC	10	2	12	36.90	26.90	Columbia
01GW18	1/24/1996	47.10	48.39	2" Sch 40 PVC	15	3	18	44.10	29.10	Columbia
01GW19	1/23/1996	43.56	45.96	2" Sch 40 PVC	10	3	13	40.56	30.56	Columbia
01GW20	1/23/1996	24.90	27.29	2" Sch 40 PVC	5	5	10	19.90	14.90	Columbia
01GW21	1/24/1996	32.20	34.15	2" Sch 40 PVC	15	25	40	7.20	-7.80	Yorktown-Eastover
Newly Installed Monitoring Wells										
01GW22	02/18/09	37.35	39.54	2" Sch 40 PVC	10	27	37	10.35	0.35	Yorktown-Eastover
01GW23	02/23/09	14.42	16.91	2" Sch 40 PVC	10	20	30	-5.58	-15.58	Yorktown-Eastover
01GW24	02/24/09	32.49	35.25	2" Sch 40 PVC	10	35	45	-2.51	-12.51	Yorktown-Eastover
01GW25	02/25/09	28.56	31.55	2" Sch 40 PVC	10	32	42	-3.44	-13.44	Yorktown-Eastover
Site 3										
Existing Monitoring Wells										
03GW06	2/13/1986	43.10	45.41	2" Sch 40 PVC	15	35	50	8.10	-6.90	Yorktown-Eastover
03GW07	1/6/1986	24.30	27.69	2" Sch 40 PVC	15	16	31	8.30	-6.70	Yorktown-Eastover
03GW08A	2/8/1996	25.90	27.99	2" Sch 40 PVC	15	60	75	-34.10	-49.10	Yorktown-Eastover
03GW08B	9/20/2004	25.98	28.03	2" Sch 40 PVC	10	25	35	0.98	-9.02	Yorktown-Eastover
03GW15	6/5/1992	29.30	31.92	4" Sch 40 PVC	15	20	35	9.30	-5.70	Yorktown-Eastover
03GW15A	1/30/1996	29.70	31.75	2" Sch 40 PVC	15	55	70	-25.30	-40.30	Yorktown-Eastover
03GW18	6/3/1992	45.90	48.33	4" Sch 40 PVC	15	35	50	10.90	-4.10	Yorktown-Eastover
03GW19	2/7/1996	37.10	39.51	2" Sch 40 PVC	15	30	45	7.10	-7.90	Yorktown-Eastover
03GW19A	2/5/1996	37.30	39.62	2" Sch 40 PVC	15	66	81	-28.70	-43.70	Yorktown-Eastover
03GW20	9/20/2004	29.48	31.18	2" Sch 40 PVC	10	40	50	-10.52	-20.52	Yorktown-Eastover
03GW20A	9/20/2004	29.07	31.31	2" Sch 40 PVC	10	70	80	-40.93	-50.93	Yorktown-Eastover
Newly Installed Monitoring Wells										
03GW21	02/10/09	22.27	24.85	2" Sch 40 PVC	10	25	35	-2.73	-12.73	Yorktown-Eastover
03GW22	02/11/09	32.56	35.27	2" Sch 40 PVC	15	25	40	7.56	-7.44	Yorktown-Eastover
03GW23	02/12/09	28.04	30.39	2" Sch 40 PVC	10	40	50	-11.96	-21.96	Yorktown-Eastover
03GW24	02/17/09	38.82	41.79	2" Sch 40 PVC	15	28	43	10.82	-4.18	Yorktown-Eastover
03GW25	02/13/09	29.94	32.69	2" Sch 40 PVC	10	26	36	3.94	-6.06	Yorktown-Eastover
03GW26	02/19/09	27.12	29.76	2" Sch 40 PVC	10	45	55	-17.88	-27.88	Yorktown-Eastover
03GW27	02/16/09	24.53	27.03	2" Sch 40 PVC	10	25	35	-0.47	-10.47	Yorktown-Eastover
03GW28	02/18/09	3.19	5.56	2" Sch 40 PVC	10	6	16	-2.81	-12.81	Yorktown-Eastover
03GW29	02/26/09	26.01	28.83	2" Sch 40 PVC	10	30	40	-3.99	-13.99	Yorktown-Eastover

Notes:
ft = feet
TOC = top of casing
bgs = below ground surface
msl = mean sea level

TABLE 3-3
Site 1 Water Level Survey
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Monitoring Well ID	Date of Survey	Depth to Water (feet)	Depth to Bottom (feet)	Monitoring Well Elevation (feet amsl)	Water Level Elevation (feet amsl)	Aquifer
YS01-GW04	03/06/09	5.52	20.20	9.52	4.00	Yorktown
YS01-GW04A	03/06/09	3.68	43.50	9.36	5.68	Yorktown
YS01-GW05	03/06/09	2.35	5.82	36.74	34.39	Columbia
YS01-GW05A	03/06/09	32.95	72.30	37.83	4.88	Yorktown
YS01-GW12	03/06/09	8.79	16.50	45.28	36.49	Columbia
YS01-GW12A	03/06/09	31.60	51.80	43.34	11.74	Yorktown
YS01-GW12B	03/06/09	29.42	31.00	43.52	14.10	Yorktown
YS01-GW13	03/06/09	8.40	17.50	43.54	35.14	Yorktown
YS01-GW13A	03/06/09	36.90	77.00	42.27	5.37	Yorktown
YS01-GW14	03/06/09	10.21	17.80	47.98	37.77	Columbia
YS01-GW17	03/06/09	6.00	14.91	41.49	35.49	Columbia
YS01-GW18	03/06/09	11.70	20.60	49.31	37.61	Columbia
YS01-GW19	03/06/09	8.14	15.70	45.96	37.82	Columbia
YS01-GW20	03/06/09	10.95	12.50	27.29	16.34	Columbia
YS01-GW21	03/06/09	20.70	41.00	34.15	13.45	Yorktown
YS01-GW22	03/06/09	30.16	40.30	39.54	9.38	Yorktown
YS01-GW23	03/06/09	14.45	32.40	16.91	2.46	Yorktown
YS01-GW24	03/06/09	33.73	47.20	35.25	1.52	Yorktown
YS01-GW25	03/06/09	29.96	45.60	31.55	1.59	Yorktown

Notes:
amsl = above mean sea level

TABLE 3-4
Site 3 Water Level Survey
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Monitoring Well ID	Date of Survey	Depth to Water (feet)	Depth to Bottom (feet)	Monitoring Well Elevation (feet amsl)	Water Level Elevation (feet amsl)
YS03-GW06	03/06/09	38.79	50.90	45.41	6.62
YS03-GW07	03/06/09	22.92	34.70	27.69	4.77
YS03-GW08A	03/06/09	23.63	76.25	27.99	4.36
YS03-GW08B	03/06/09	23.10	37.90	28.03	4.93
YS03-GW15	03/06/09	25.92	35.80	31.96	6.04
YS03-GW15A	03/06/09	25.76	72.00	31.75	5.99
YS03-GW18	03/06/09	38.52	52.55	48.39	9.87
YS03-GW19	03/06/09	35.00	47.20	39.51	4.51
YS03-GW19A	03/06/09	35.00	82.40	39.62	4.62
YS03-GW20	03/06/09	27.05	52.50	31.18	4.13
YS03-GW20A	03/06/09	27.15	82.00	31.31	4.16
YS03-GW21	03/06/09	22.10	37.60	24.85	2.75
YS03-GW22	03/06/09	31.50	42.44	35.27	3.77
YS03-GW23	03/06/09	27.72	52.20	30.39	2.67
YS03-GW24	03/06/09	38.35	47.49	41.79	3.44
YS03-GW25	03/06/09	29.80	38.60	32.69	2.89
YS03-GW26	03/06/09	26.19	57.00	29.76	3.57
YS03-GW27	03/06/09	24.90	38.00	27.03	2.13
YS03-GW28	03/06/09	3.00	18.12	5.56	2.56
YS03-GW29	03/06/09	27.55	48.95	28.83	1.28

Notes:
amsl = above mean sea level

TABLE 3-5
Surface Water and Sediment Tide Levels
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Site 1 Surface Water Samples			
Sample Number	Date	Time	Tide
YS01-SW31-0709	7/23/2009	1400	High
YS01-SW32-0709	7/21/2009	1150	High to Low
YS01-SW33-0709	7/21/2009	1050	High

Site 3 Surface Water Samples			
Sample Number	Date	Time	Tide
YS03-SW05-0709	7/23/2009	1030	Low to High
YS03-SW06-0709	7/22/2009	1255	High
YS03-SW07-0709	7/22/2009	1230	High
YS03-SW08-0709	7/22/2009	1130	High
YS03-SW09-0709	7/22/2009	1200	High
YS03-SW10-0709	7/22/2009	1030	High
YS03-SW11-0709	7/21/2009	1020	High
YS03-SW12-0709	7/21/2009	950	High

Background Surface Water Samples			
Sample Number	Date	Time	Tide
YBG-SW01-1207	12/10/2007	1500	Low
YBG-SW02-1207	12/14/2007	1245	High
YBG-SW03-1207	12/14/2007	1310	High
YBG-SW04-1207	12/11/2007	1020	High
YBG-SW05-1207	12/14/2007	1120	High
YBG-SW06-1207	12/14/2007	1335	High

*Source: http://tidesandcurrents.noaa.gov/

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE3-1_SITE1_SAMPLE_LOCS_LTR.MXD CELEFTHE 12/23/2011 10:39:32 AM

Legend

- Membrane Interface Probe (MIP)
- MIP and DPT Sample Locations
- Columbia Aquifer Monitoring Well
- Yorktown-Eastover Aquifer Monitoring Well
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap (2001 Remedial Action, OHM)
- Approximate boundary of former clearing and activities

Note:
Soil sample collected from MIP 21

N W E S

0 100 200
Feet

Figure 3-1
MIP, DPT, and Groundwater Sample Locations
Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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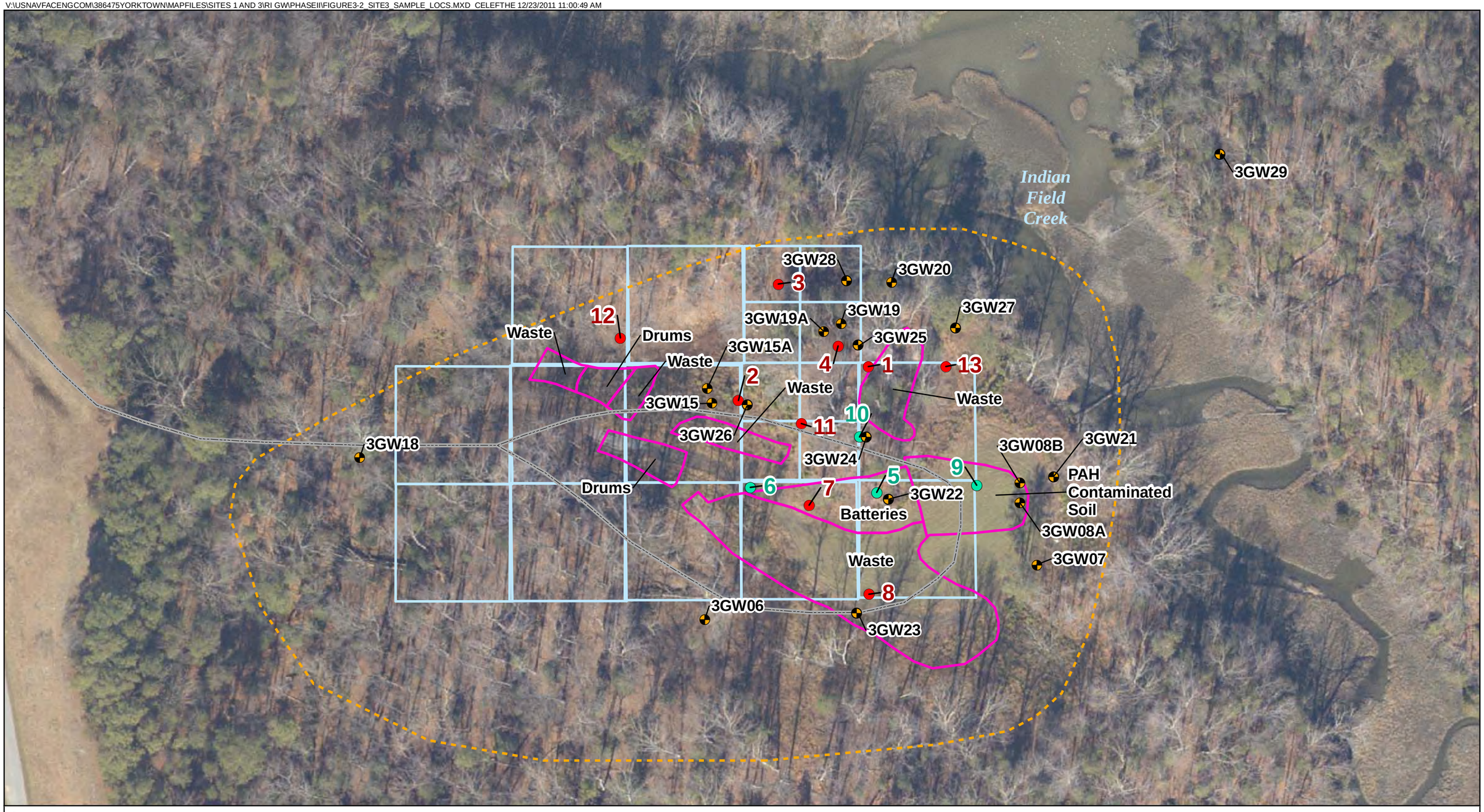
V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE3-2_SITE3_SAMPLE_LOCS.MXD CELEFTHE 12/23/2011 11:00:49 AM



Legend

- Membrane Interface Probe (MIP) Sample Location
- MIP and DPT Sample Locations
- Yorktown Monitoring Wells
- MIP Survey Grid
- Approximate Waste Limits
- Approximate boundary of former clearing and activities
- Landfill Access Road

Note:
Soil sample collected from MIP 5

N
W E
S

0 80 160
Feet

Figure 3-2
MIP, DPT, and Groundwater Sample Locations
Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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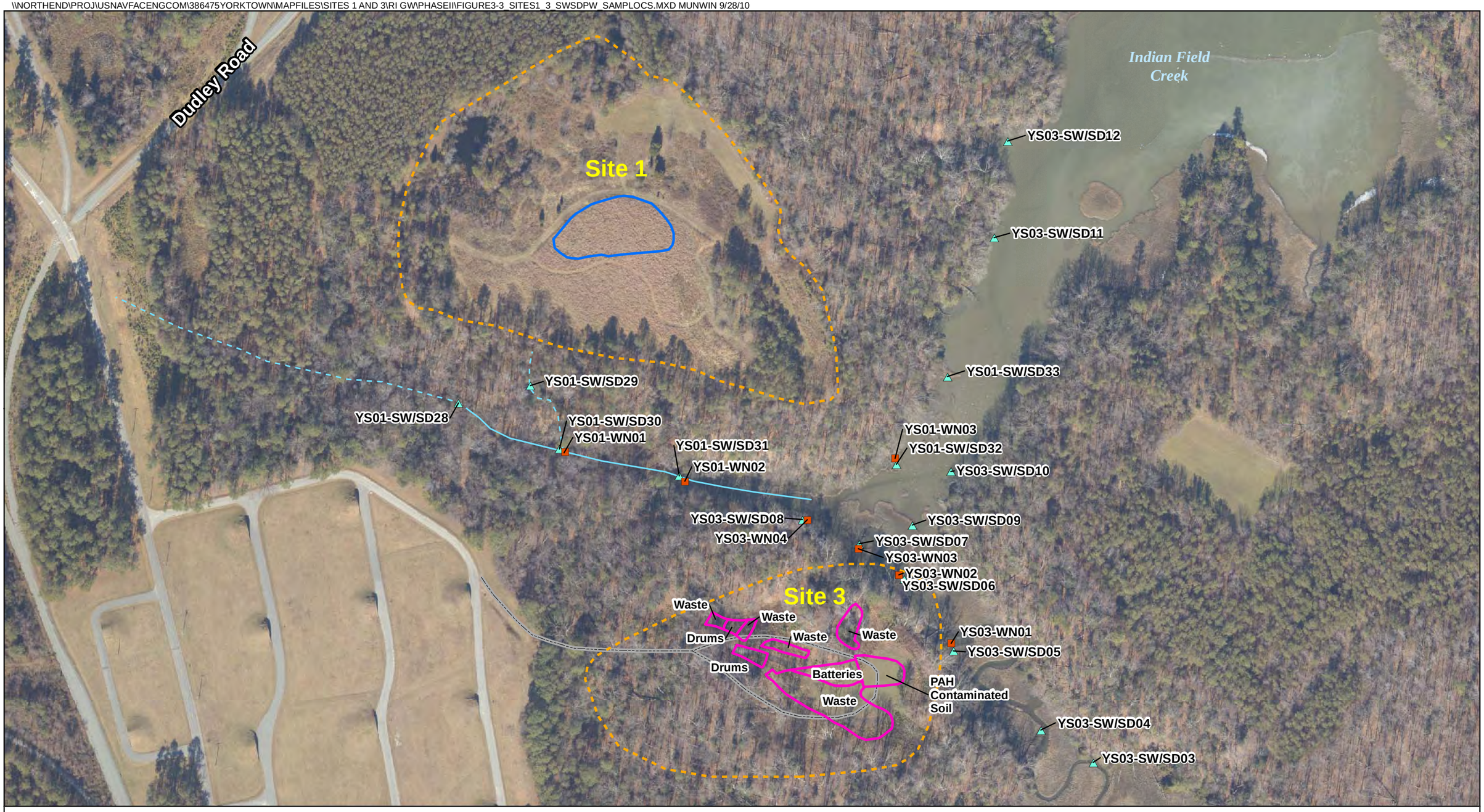
\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE3-3_SITES1_3_SWSDPW_SAMPLOCS.MXD MUNWIN 9/28/10



Legend

- Surface Water and Sediment Sample Locations
- Sediment Pore Water Sample Locations
- Landfill Area with New Cap
- Approximate Waste Limits
- Approximate boundary of former clearing and activities
- Landfill Access Road
- Tributary
- Intermittent Tributary

N
W E
S

0 200 400
Feet

Figure 3-3
Sites 1 and 3 Surface Water, Sediment,
and Sediment Pore Water Sample Locations
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 4

Physical Characteristics

This section presents an evaluation of the physical characteristics of Sites 1 and 3, including meteorology, topography, land and groundwater use, surface water drainage, geology, and hydrogeology.

A detailed hydrogeologic conceptual model is important to describe the primary mechanisms that control the fate and migration of contaminants in groundwater. The hydrogeologic conceptual model (Section 4.5) provides the foundation for the development of the overall CSM for Sites 1 and 3 presented in Section 8. The physical characteristics also support the Human Health Risk Assessments (HHRAs) and Ecological Risk Assessments (ERAs).

4.1 Meteorology

The climate of the Virginia Peninsula is influenced by the moderating effects of the Atlantic Ocean, resulting in mild winters and long, warm summers. High humidity occurs frequently along the coast and less frequently inland. The average relative humidity in mid-afternoon is approximately 60 percent. Humidity is higher at night, and the average humidity at dawn is approximately 80 percent. Ground fog is a frequent weather occurrence in late summer, especially during early morning hours.

Freezing temperatures occur intermittently from October through March. The average monthly temperatures in the area range from approximately 40 degrees Fahrenheit in January to 80 degrees Fahrenheit in July.

York County is subject to easterly storms throughout late summer and early fall, which cause high tides and coastal flooding. Intense tropical hurricanes occasionally sweep the coast. Winter storms that move along the eastern seaboard are often associated with high winds and precipitation, occasionally in the form of snow, ice pellets, or rain; however, the snow is seldom prolonged or heavy. The average annual precipitation is approximately 45 inches, with the summer months being the wettest and the winter months being the driest.

4.2 Topography and Surface Features

4.2.1 Site 1

Site 1 is generally grassy with a wooded surrounding area. The topography is generally flat, with a slight slope downward to the west and more pronounced slopes adjacent to Indian Field Creek and the unnamed tributary to Indian Field Creek (**Figures 1-2** and **4-1**). Ground surface elevations range from 50 to 0 feet above mean sea level (amsl). Surface water runoff generally follows the topography and is conveyed directly to Indian Field Creek or via tributaries located adjacent to Site 1.

4.2.2 Site 3

Site 3 is generally grassy with a wooded surrounding area. The topography slopes generally to the northeast, with steeper slopes adjacent to Indian Field Creek and the unnamed tributary to Indian Field Creek (**Figures 1-3** and **4-1**). Ground surface elevations range from 50 to 0 feet amsl. Surface water runoff generally follows the topography and is conveyed to Indian Field Creek

4.3 Land and Water Use

WPNSTA Yorktown is a secure military installation that occupies 10,624 acres. Sites 1 and 3 are located within a restricted area of WPNSTA and a special access badge is required to enter the area. Each site has a locked gate that prevents access. These sites are also located within the Explosive Safety Quantity Distance (ESQD), the area surrounding a restricted zone where ordnance destruction and disposal is on-going. Due to unacceptable safety hazards still posed by the activities within the ESQD, the area cannot be developed unless the mission of the Base changes substantially. Therefore, access to the site is limited to Navy personnel. No buildings exist and there are no current activities at each site. The future site use is expected to remain the same as the current site use.

The source of all domestic water supply for WPNSTA Yorktown and surrounding communities is from the waterworks of the City of Newport News, Virginia, which consists of a series of surface water reservoirs. There are currently no drinking water wells at WPNSTA Yorktown; four historic water supply wells have been abandoned. Surface water bodies in and around Sites 1 and 3 are brackish in nature and unsuitable as a potable water source.

4.4 Surface Water Hydrology

Both Sites 1 and 3 are situated along Indian Field Creek and its unnamed tributary. The southwestern branch of Indian Field Creek lies directly north of the Camp Peary Scarp on Croaker Flat **(Figure 4-1)**. Indian Field Creek is a tidally influenced tributary to the York River and the surface water flow direction reverses diurnally due to tidal fluctuations.

4.5 Hydrogeology

This section presents the geology, hydrostratigraphy, aquifer properties, groundwater flow, and general groundwater chemistry. Together, this information forms the hydrogeologic conceptual model that provides the foundation of the overall CSM presented in Section 8.

4.5.1 Geology

WPNSTA Yorktown is situated within the Virginia Coastal Plain Physiographic Province. The Virginia Coastal Plain is characterized by unconsolidated sediments of Quaternary, Tertiary, and Cretaceous ages. The sediments thicken eastward from the Fall Line (located approximately 70 miles west of WPNSTA) and are approximately 6,000 feet thick near the coast below the Eastern Shore Peninsula, according to *Hydrogeologic Framework of the Virginia Coastal Plain* (Meng and Harsh, 1988).

Deposition and erosion associated with fluctuating sea levels resulted in terraces that decrease in topographic elevation in a stair-step pattern with scarps oriented north to south, delineating the eroded shoreline along the toe of each terrace (Brockman et al., 1997). Two terraces (Lackey Plain and Croaker Flat) are divided by one scarp (the Camp Peary Scarp) within the boundaries of WPNSTA Yorktown. Sites 1 and 3 are located on Croaker Flat (**Figure 4-1**).

A total of ten geologic formations have been identified beneath WPNSTA, and are shown in **Figure 4-2** (Brockman et al., 1997). The upper most geologic formations consist of alluvial, colluvial, and marsh deposits composed of silt, sand, and pebbles with some clay. The majority of the surficial unconsolidated sediment has been mapped as the Pleistocene (Quaternary) Windsor Formation (Mixon et al, 1989).

Monitoring well lithologic data from the previous investigations and the Phase II RI provide descriptions of the subsurface geology. Two simplified hydrogeologic cross-sections of Site 1, oriented to facilitate correlation among the monitoring wells (**Figure 4-3**), are shown in **Figure 4-4** and **Figure 4-5**. Two simplified hydrogeologic cross-sections of Site 3, oriented to facilitate correlation among the monitoring wells (**Figure 4-6**) are shown in **Figure 4-7** and **Figure 4-8**. Soil boring logs are provided in **Appendix B**.

The uppermost subsurface geology in the area of Sites 1 and 3 is characterized by the Pleistocene (Quaternary) aged Shirley, Chuckatuck, and Windsor Formations, and the Pliocene (Tertiary) Yorktown Formation (Mixon et al, 1989). On Croaker Flat, the Shirley Formation, which is relatively thin and consists of sand, gravel, silt, clay, and organics, occurs at the surface along with modern alluvial, colluvial and marsh deposits. Over the majority of the WPNSTA, on the Lackey Plain, the Windsor and Chuckatuck Formations occur at the surface, which are composed of a series of very fine to very coarse sand, pebbles, silt, and sandy clay. The uppermost portion of the Yorktown Formation (Yorktown confining unit) consists of clayey, silty sand to clay and generally only occurs within the topographically higher areas located adjacent to the site. The lower portion of the Yorktown Formation (Yorktown-Eastover aquifer) consists of silty sand to sand.

4.5.2 Hydrostratigraphy

The geologic units described above were grouped into hydrostratigraphic units based upon their hydrologic characteristics in *Groundwater Resources of the York-James Peninsula of Virginia, USGS Water Resources*

Investigation Report (Lazniak and Meng, 1988) and the *Geohydrology of the Shallow Aquifer System* (Brockman et al., 1997). Based upon the hydraulic characteristics of the geologic units present, the uppermost eight (Cobham Bay Member of the Eastover Formation through the Tabb Formation) of the ten geologic formations have been identified as the York County Shallow Aquifer System (Brockman et al., 1997). As illustrated in **Figure 4-2**, the following five hydrogeologic units make up the York County Shallow Aquifer System at WPNSTA Yorktown (in descending order):

1. Columbia aquifer (consisting of the Windsor through Tabb Formations)
2. Cornwallis Cave confining unit (consisting of the Bacons Castle Formation)
3. Cornwallis Cave aquifer (consisting of the upper Moore House Member of the Yorktown Formation and the Sedley Formation)
4. Yorktown confining unit (consisting of the upper Morgarts Beach and lower Moore House Members of the Yorktown Formation)
5. Yorktown-Eastover aquifer (consisting of the Cobham Bay through Rushmere Members of the Yorktown Formation)

In the vicinity of Sites 1 and 3 and within the Croaker Flat, the Camp Peary Scarp truncates the Cornwallis Cave confining unit and the Cornwallis Cave aquifer. The Yorktown-Eastover aquifer is underlain by the approximately 100- to 200-feet thick Eastover-Calvert confining unit. Due to the thickness of this confining unit, it is unlikely that deeper aquifers have been impacted by historical releases at WPNSTA, and have consequently not been investigated.

The hydrostratigraphy encountered at each site is discussed below.

Site 1

Within the topographically higher areas beneath Site 1, the first encountered groundwater occurs within the silts and fine- to coarse-grained sands of the Columbia aquifer. The Columbia aquifer is unconfined and its thickness is controlled by the presence of the underlying Yorktown confining unit. The Columbia aquifer has been eroded away and is not present within the southern, eastern, and northeastern portions of the site, along the steeper slopes of the unnamed tributary and Indian Field Creek (**Figure 4-4)**.

Within the topographically higher areas, the clays of the Yorktown confining unit separate the Columbia aquifer from the Yorktown-Eastover aquifer. The Yorktown confining unit is generally approximately 20 feet thick and the top of the unit is encountered at a maximum depth of 20 feet bgs. The Yorktown confining unit has also been eroded away and is not present within the southern, eastern, and northeastern portions of the site.

The Yorktown-Eastover aquifer consists of silty, fine-to coarse-grained sands and shell hash. The aquifer is confined where it underlies the Yorktown confining unit, and is unconfined where it is the first encountered groundwater within the topographically lower areas in the southern, eastern, and northeastern portions of the site. The thickness of the aquifer beneath Site 1 is unknown, as no monitoring wells extend to the top of the Eastover-Calvert confining unit.

Each aquifer at the site is recharged by the infiltration of precipitation.

Site 3

The Columbia aquifer is not present beneath Site 3. The first encountered groundwater occurs within the silt, fine- to coarse-grained sand, and shell hash of the Yorktown-Eastover aquifer. The aquifer is confined beneath the site and is recharged by the infiltration of precipitation.

Beneath the majority of Site 3, the Yorktown confining unit was generally encountered at the ground surface (**Figures 4-7** and **4-8**). Within the western portion of the site, sands were encountered at the ground surface and may contain perched groundwater above the Yorktown confining unit (i.e., at 3GW18 and 3GW15 as described in the boring logs in **Appendix B**). However, perched groundwater was not encountered during monitoring well installations during the Phase II RI.

4.5.3 Aquifer Properties

Aquifer hydraulic conductivity ("slug") testing was performed at various monitoring wells completed within the Columbia and Yorktown-Eastover aquifers at Site 1 and the Yorktown-Eastover aquifer at Site 3. **Table 4-1** summarizes the results of the testing. The slug test data sets were analyzed with the aid of the software package AQTESOLV™ using the Bouwer-Rice solution method; the data plots are provided in **Appendix F**.

In some cases, the groundwater level response data from the slug tests displayed a concave-upward curvature, which is most likely a result of the filter pack having a higher hydraulic conductivity then the natural formation. The initial groundwater level response is likely related to drainage from the filter pack, whereas the later response is likely representative of the aquifer. In cases such as these, the preferred method is to ignore the initial straight-line segment (which is attributed to the gravel pack) and use the slope of the second straight segment of the response for the analysis.

The average hydraulic conductivity values for the Columbia and Yorktown-Eastover aquifers at Site 1 were estimated at 0.1 and 0.4 feet per day (ft/day), respectively, based on testing from only one monitoring well completed in each aquifer. The average hydraulic conductivity value for the Yorktown-Eastover aquifer at Site 3 was estimated at 0.2 ft/day, based on data collected from two monitoring wells. These values are consistent with the aquifer hydraulic conductivity values presented in the Phase I RI (CH2M HILL, 2007).

4.5.4 Groundwater Flow

Groundwater elevations measured during the RI are presented in **Tables 3-4** and **3-5**. Groundwater elevation contour maps for the Columbia and Yorktown-Eastover aquifers at Site 1 are presented in **Figures 4-9** and **4-10**, respectively. The groundwater elevation contour map for the Yorktown-Eastover aquifer at Site 3 is presented in **Figure 4-11**. Groundwater flow at each site is discussed separately below.

Site 1

The first encountered groundwater at Site 1 was within the Columbia aquifer, ranging in elevation from 37.82 (1GW19) to 34.39 (1GW05) feet amsl. Groundwater flow within the Columbia aquifer mimics the surface topography and flows in a radial direction from the western portion of the site (**Figure 4-9**). The average horizontal hydraulic gradient ranges from 0.02 to 0.005 feet per foot (ft/ft) in the southwestern and southeastern directions, respectively. It is not known if the Yorktown confining unit extends to the slope face at locations where the ground surface elevation drops below the elevation of the top of the Yorktown confining unit, or if the confining unit was locally eroded and sands were subsequently deposited in this area, potentially allowing groundwater flow from the Columbia aquifer to the Yorktown-Eastover aquifer, which appears to be the case based on the boring logs indicating sandier material between monitoring wells 1GW22 and 1GW23 (in the vicinity of 1GW04 and 1GW04A). Based on the average hydraulic conductivity value discussed in Section 4.5.3 (0.1 ft/day), an assumed effective porosity of 30 percent (based on lithology), and the minimum and maximum horizontal hydraulic gradients (0.005 and 0.02 ft/ft, respectively), the estimated groundwater velocity in the Columbia aquifer ranges from 0.6 to 2.4 ft/yr.

The potentiometric surface of the Yorktown-Eastover aquifer ranges in elevation from 16.34 (1GW20) to 1.52 (1GW24) feet amsl. Yorktown-Eastover groundwater flows generally southeastward towards Indian Field Creek, at an average hydraulic gradient of 0.01 ft/ft (**Figure 4-10**). Yorktown-Eastover groundwater does not appear to discharge to the unnamed tributary. Based on the average hydraulic conductivity (0.4 ft/day), an assumed effective porosity of 30 percent, and the average horizontal hydraulic gradient (0.01 ft/ft), the estimated average groundwater velocity in the Yorktown-Eastover aquifer is 5 feet per year (ft/yr).

During evaluation of the groundwater flow pattern some uncertainties were identified related to the amount of discharge to Indian Field Creek. Consequently, it is recommended that additional evaluation of flow patterns be completed prior to completing an FS for Site 1.

Site 3

The first encountered groundwater at Site 3 was within the Yorktown-Eastover aquifer, and ranged in elevation from 9.87 (3GW18) to 1.28 (3GW29) feet amsl. Groundwater flows generally eastward to northeastward towards

Indian Field Creek, at an average hydraulic gradient of 0.01 ft/ft (**Figure 4-11**). Two localized groundwater mounds occur within the eastern portion of the site, which is consistent with site topography. Based on the average hydraulic conductivity (0.2 ft/day), an assumed effective porosity of 30 percent, and the average horizontal hydraulic gradient (0.01 ft/ft), the estimated average groundwater velocity in the Yorktown-Eastover aquifer is 2 ft/year.

4.5.5 Vertical Gradients

In addition to horizontal groundwater flow, groundwater also has a flow component in the vertical direction. Vertical gradients calculated from the groundwater levels at Sites 1 and 3 are presented in **Tables 4-2** and **4-3,** respectively. At Site 1, the vertical groundwater flow direction between the Columbia and Yorktown-Eastover aquifer, where present, was downward, with a strong vertical gradient ranging from -0.5 to -0.9 ft/ft. Within the Yorktown-Eastover aquifer, a weak upward vertical gradient was observed at wells 1GW04 and 1GW04A (0.06 ft/ft) and a weak downward gradient was observed at wells 1GW12A and 1GW12B (-0.098 ft/ft). At Site 3, a saturated Columbia aquifer is not present and the vertical gradients within the Yorktown-Eastover aquifer are mostly upward. However, one well pair showed no gradient (3GW15 and 3GW15A) and another pair (3GW08A and 3GW08B) indicated a downward gradient (-0.015 ft/ft).

TABLE 4-1
Slug Test Results
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Site	Well ID	Aquifer	Test Type/ID	Horizontal Hydraulic Conductivity (ft/day)	Average Aquifer Hydraulic Conductivity (ft/day)
Site 1	01GW18	Columbia	Rising Head #1	0.1	0.1
			Rising Head #2	0.1	
			Falling Head #1	0.03	
			Falling Head #2	0.1	
	01GW05A	Yorktown-Eastover	Rising Head #1	0.4	0.4
			Rising Head #2	0.4	
			Falling Head #1	0.4	
			Falling Head #2	0.4	
Site 3	03GW19	Yorktown-Eastover	Rising Head #1	0.04	0.2
			Rising Head #2	0.1	
			Falling Head #1	0.1	
			Falling Head #2	0.1	
	03GW20A	Yorktown-Eastover	Rising Head #1	0.6	
			Rising Head #2	0.5	
			Falling Head #1	0.6	
			Falling Head #2	0.6	

Notes
ft = feet
Average hydraulic conductivity calculated using the geometric mean

TABLE 4-2
Vertical Gradients - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Well ID	Reference Point Elevation[1] (ft msl)	Screened Interval (ft bgs)	Aquifer	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)	Vertical Gradient (ft/ft)	Upward or Downward Gradient
Downward Vertical Gradients from the Columbia Aquifer to Yorktown-Eastover Aquifer							
1GW12	45.28	4 - 14	Columbia Aquifer	8.79	36.49	-0.516	Downward
1GW12A	43.34	49.5 - 64.5	Yorktown-Eastover Aquifer	31.60	11.74		
1GW12	45.28	4 - 14	Columbia Aquifer	8.79	36.49	-0.933	
1GW12B	43.52	28 - 38	Yorktown-Eastover Aquifer	29.42	14.10		
1GW13	43.54	4 - 14	Columbia Aquifer	8.40	35.14	-0.509	
1GW13A	42.27	60 - 75	Yorktown-Eastover Aquifer	36.90	5.37		
1GW05	36.74	0.5 - 15.5	Columbia Aquifer	2.35	34.39	-0.500	
1GW05A	37.83	62 - 72	Yorktown-Eastover Aquifer	32.95	4.88		
Downward Vertical Gradients within the Yorktown-Eastover Aquifer							
1GW12B	43.52	28 - 38	Yorktown-Eastover Aquifer	29.42	14.10	-0.098	Downward
1GW12A	43.34	49.5 - 64.5	Yorktown-Eastover Aquifer	31.60	11.74		
Upward Vertical Gradients within the Yorktown-Eastover Aquifer							
1GW04	9.52	1.5 - 16.5	Yorktown-Eastover Aquifer	5.52	4.00	0.060	Upward
1GW04A	9.36	32 - 42	Yorktown-Eastover Aquifer	3.68	5.68		

Notes:
ft bgs - feet below ground surface
ft msl - feet (relative) mean sea level
ft btoc - feet below top of casing

Vertical gradient indicated is between identified and next lowest screen interval. Negative values indicate a downward vertical gradient.
1. Reference Point Elevation = top of casing elevation

TABLE 4-3
Vertical Gradients - Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Well ID	Reference Point Elevation[1] (ft msl)	Screened Interval (ft bgs)	Aquifer	Depth to Water (ft btoc)	Groundwater Elevation (ft msl)	Vertical Gradient (ft/ft)	Upward or Downward Gradient
Downward Vertical Gradients within the Yorktown-Eastover Aquifer							
3GW08B	28.03	25 - 35	Yorktown-Eastover Aquifer	23.10	4.93	-0.015	Downward
3GW08A	27.99	60 - 75	Yorktown-Eastover Aquifer	23.63	4.36		
Upward Vertical Gradients within the Yorktown Eastover Aquifer							
3GW19	39.51	30 - 45	Yorktown-Eastover Aquifer	35.00	4.51	0.003	Upward
3GW19A	39.62	66 - 81	Yorktown-Eastover Aquifer	35.00	4.62		
3GW25	32.69	26 - 36	Yorktown-Eastover Aquifer	29.80	2.89	0.041	
3GW19A	39.62	66 - 81	Yorktown-Eastover Aquifer	35.00	4.62		
3GW25	32.69	26 - 36	Yorktown-Eastover Aquifer	29.80	2.89	0.249	
3GW19	39.51	30 - 45	Yorktown-Eastover Aquifer	35.00	4.51		
No Vertical Gradient within the Yorktown Eastover Aquifer							
3GW15	31.92	20 - 35	Yorktown-Eastover Aquifer	25.92	6.00	0.000	No gradient
3GW15A	31.75	55 - 70	Yorktown-Eastover Aquifer	25.76	5.99		

Notes:
ft bgs - feet below ground surface
ft msl - feet (relative) mean sea level
ft btoc - feet below top of casing

Vertical gradient indicated is between identified and next lowest screen interval. Negative values indicate a downward vertical gradient.
1. Reference Point Elevation = top of casing elevation

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE4-1_SITELOCATION_GEOLOGY.MXD MUNWIN 9/28/10

Legend

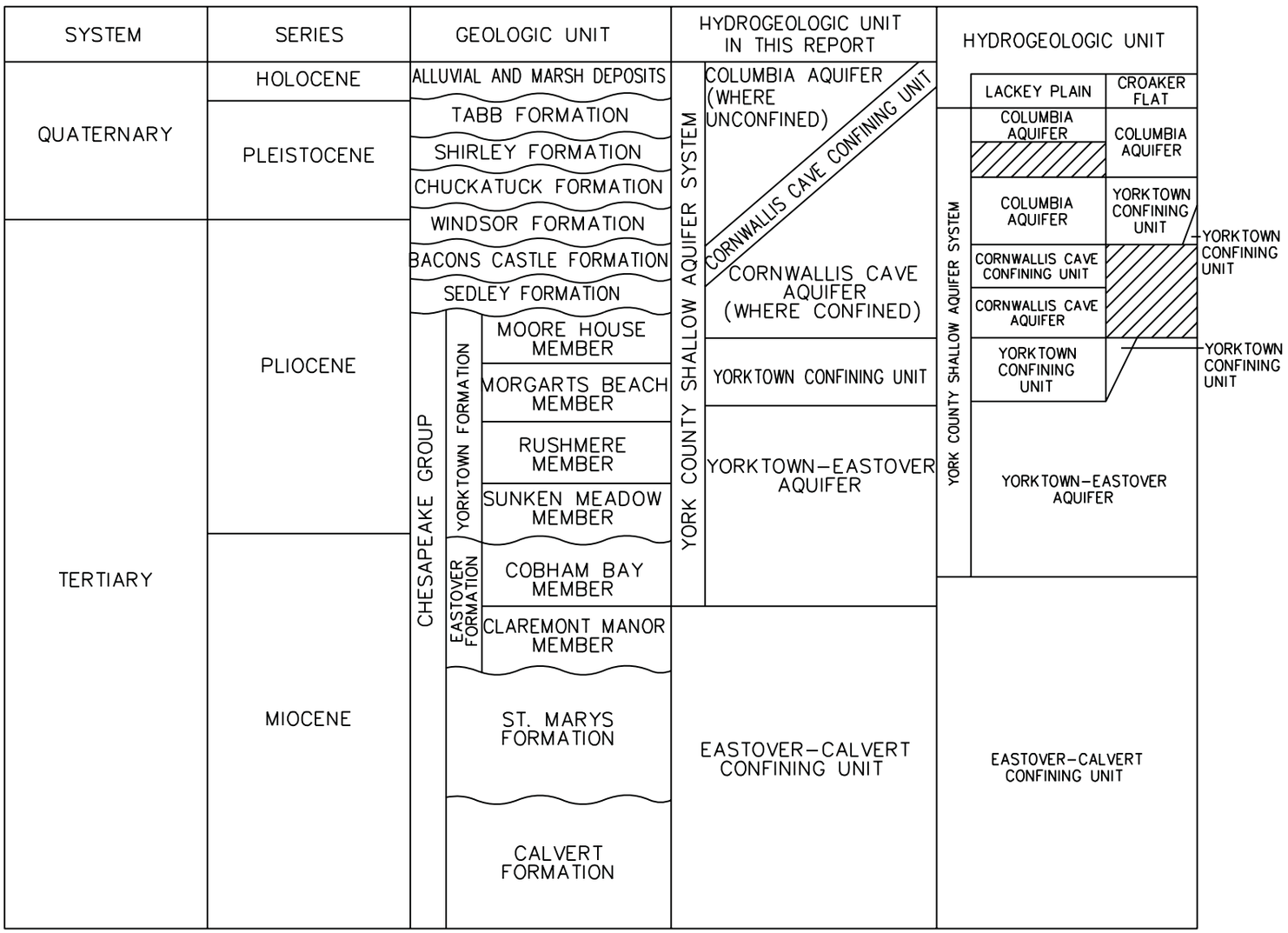
- Naval Weapons Station Boundary
- Generalized Site Boundary
- Camp Peary Scarp
- Elevation Contours (20 ft interval)

N
W E
S

0 750 1,500
Feet

Figure 4-1
Site Location and Major Geologic Features
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

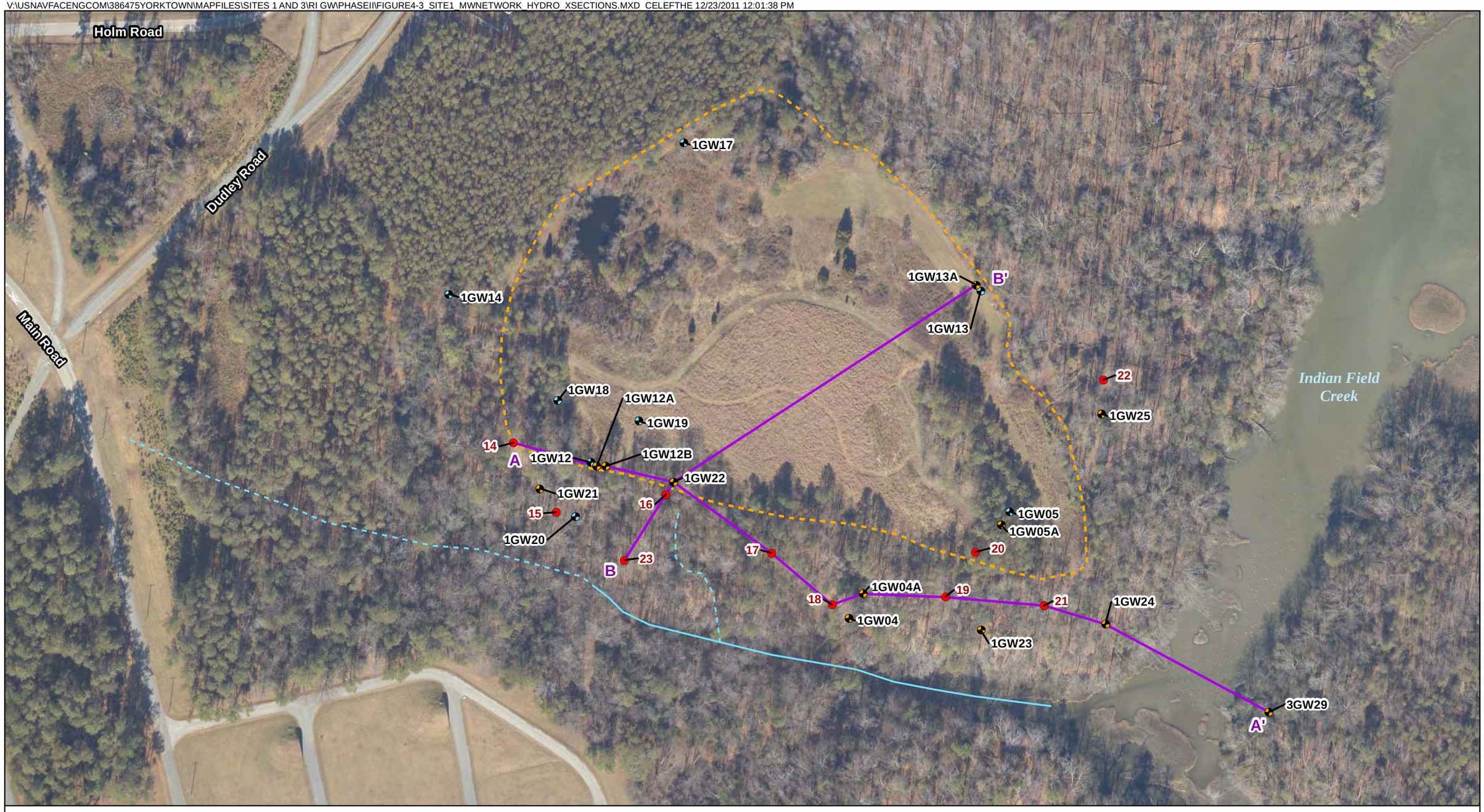


SOURCE: BROCKMAN, ET AL 1997 GEOHYDROLOGY OF THE SHALLOW AQUIFER SYSTEM, NAVAL WEAPONS STATION YORKTOWN, YORKTOWN, VIRGINIA

Figure 4-2
Hydrogeologic Units in York County
Phase II Remedial Investigation Report,
Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE4-3_SITE1_MWNETWORK_HYDRO_XSECTIONS.MXD CELEFTHE 12/23/2011 12:01:38 PM



Legend

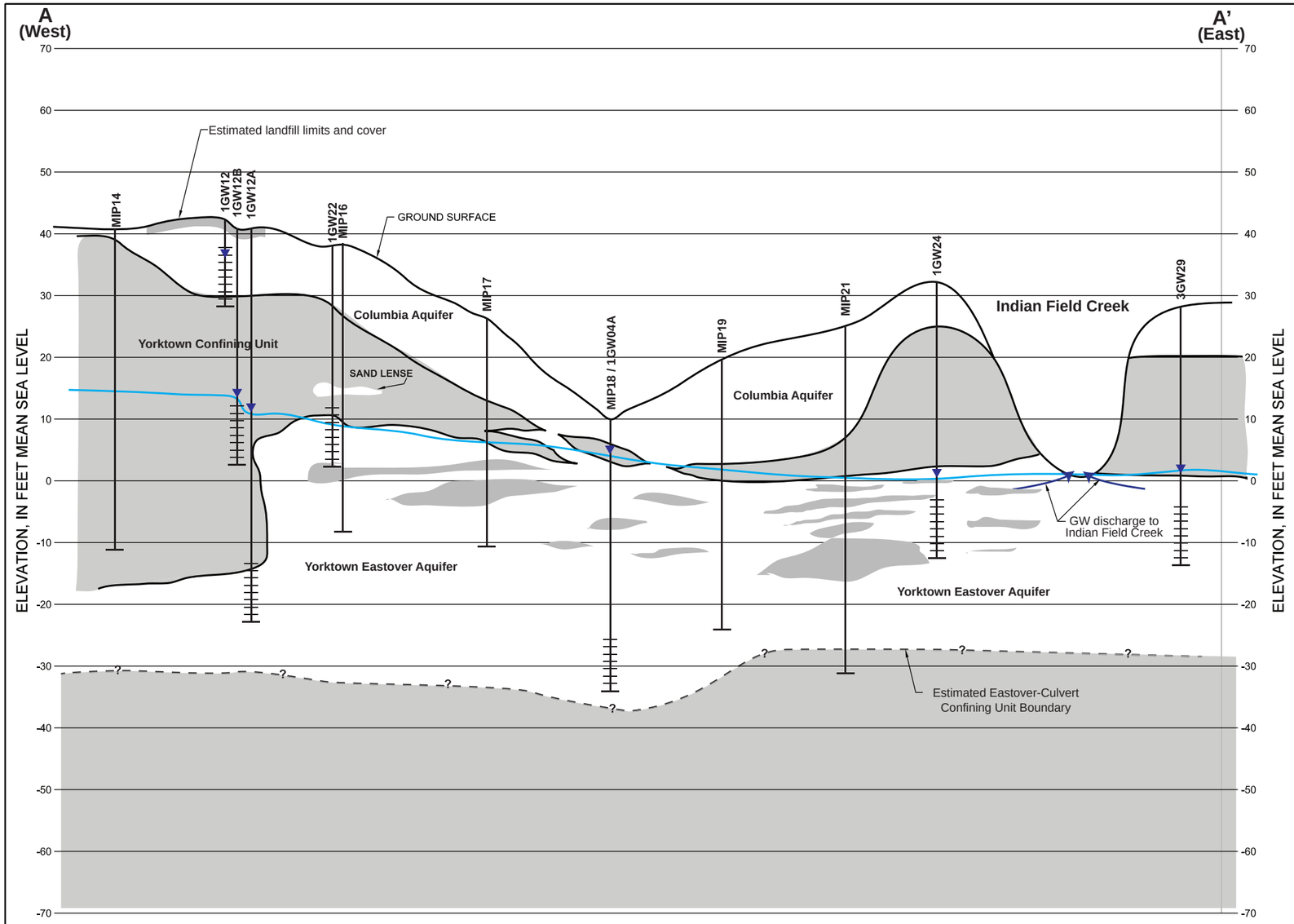
- Membrane Interface Probe Location
- Columbia Aquifer Monitoring Well
- Yorktown-Eastover Aquifer Monitoring Well
- Tributary
- Intermittent Tributary
- Cross-Section hydro Transects
- Approximate boundary of former clearing and activities

N
W E
S

0 150 300
Feet

Figure 4-3
Site 1 Monitoring Well Network and
Location of Hydrogeologic Cross-Section Lines
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

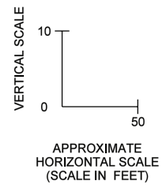


LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL
- GROUNDWATER FLOW

NOTES:

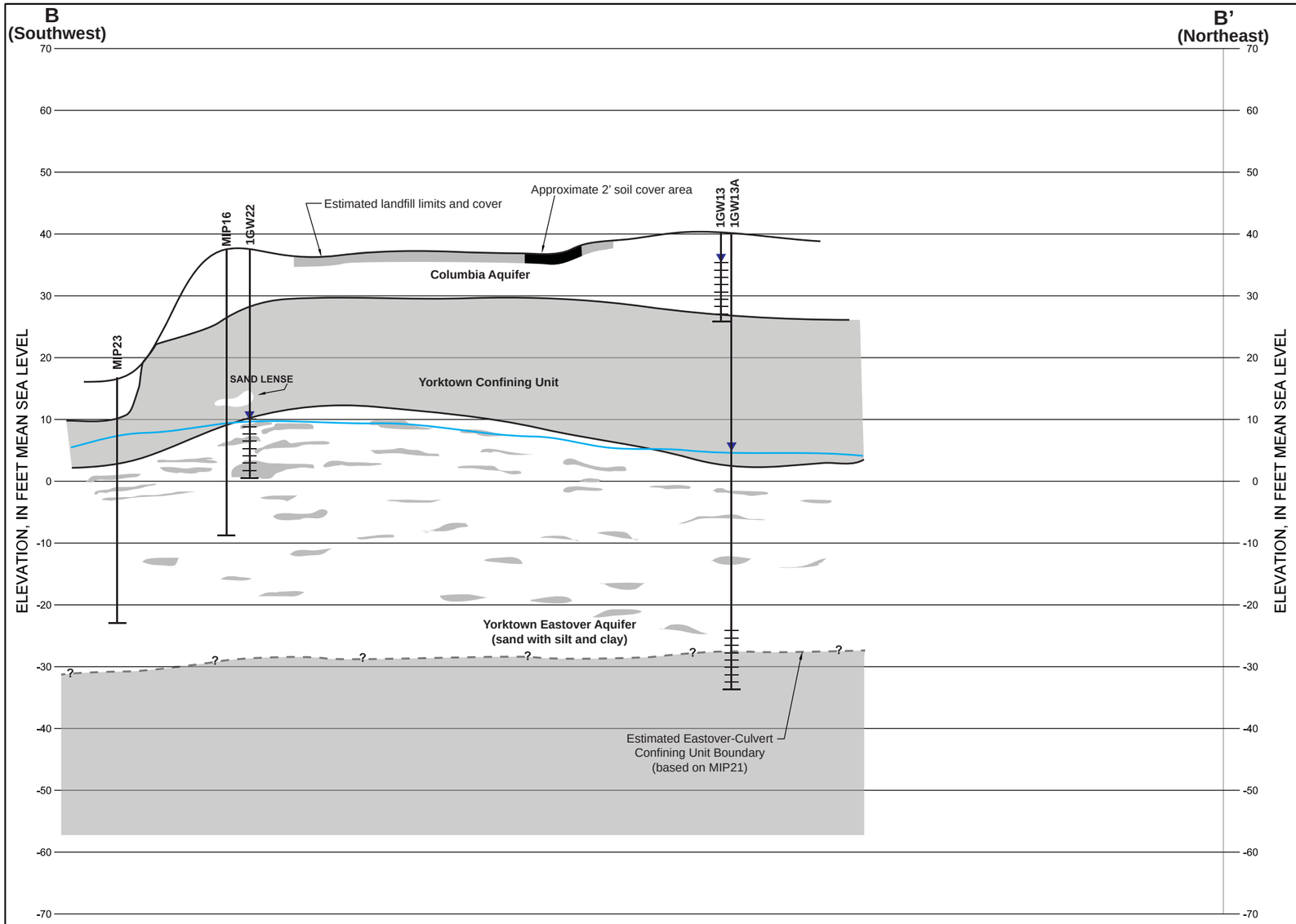
1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. GROUND SURFACE DEPRESSION IS A RESULT OF WELL 1GW04A BEING CLOSER TO UNNAMED TRIBUTARY THAN OTHER POINTS.



VERTICAL EXAGGERATION = 5

FIGURE 4-4
SITE 1 CONCEPTUAL HYDROGEOLOGIC CROSS SECTION A-A'
PHASE II REMEDIAL INVESTIGATION REPORT, SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL



LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.

VERTICAL SCALE
10
0
50
APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 4-5
SITE 1 CONCEPTUAL HYDROGEOLOGIC CROSS SECTION B-B'
PHASE II REMEDIAL INVESTIGATION REPORT, SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL

ES102111132027VBO Yorktown_XSections_BB_Prime_v5.ai 12-22-11 IT/jls

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE4-6_SITE3_MWNETWORK_HYDRO_XSECTIONS.MXD CELEFTHE 12/23/2011 12:04:49 PM

Legend

- Membrane Interface Probe Location
- Yorktown-Eastover Aquifer Monitoring Well
- Landfill Access Road
- Cross-Section (Hydro)

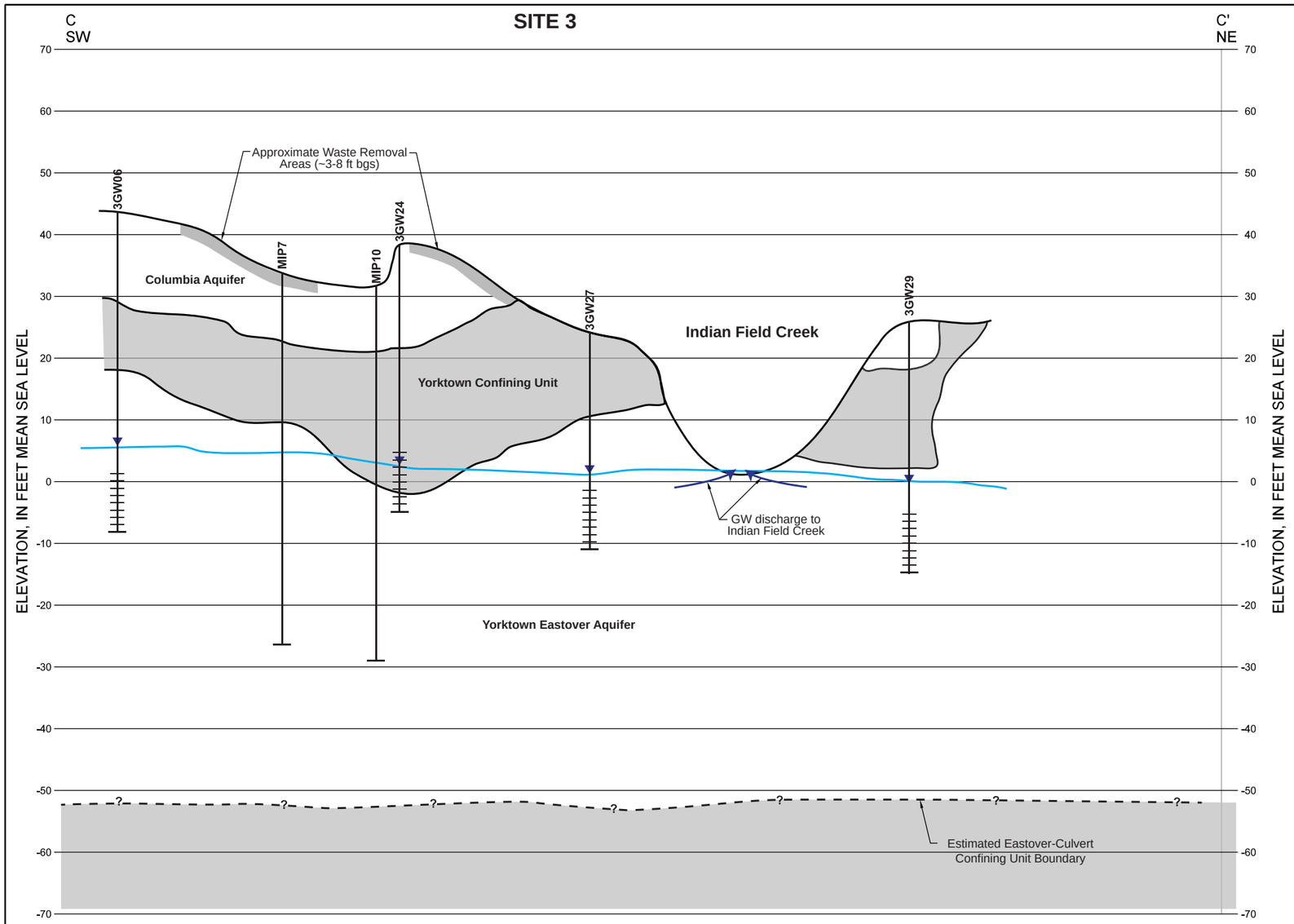
N
W E
S

0 100 200
Feet

Figure 4-6
Site 3 Monitoring Well Network and
Location of Hydrogeologic Cross-Section Lines
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

SITE 3



LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL
- GROUNDWATER FLOW

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. MIP DATA WAS NOT USED FOR LITHOLOGY DETERMINATION DUE TO EXPOSURE TO PETROLEUM. CONDUCTIVITY RESULTS WERE CONSIDERED UNRELIABLE. HOWEVER, ECD RESULTS WERE UNAFFECTED BY PETROLEUM CONTAMINATION AND WERE USED TO HELP DETERMINE EXTENT OF CONTAMINATION.

VERTICAL SCALE
10
0
50
APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 4-7
SITE 3 CONCEPTUAL HYDROGEOLOGIC CROSS SECTION C-C'
PHASE II REMEDIAL INVESTIGATION REPORT, SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL

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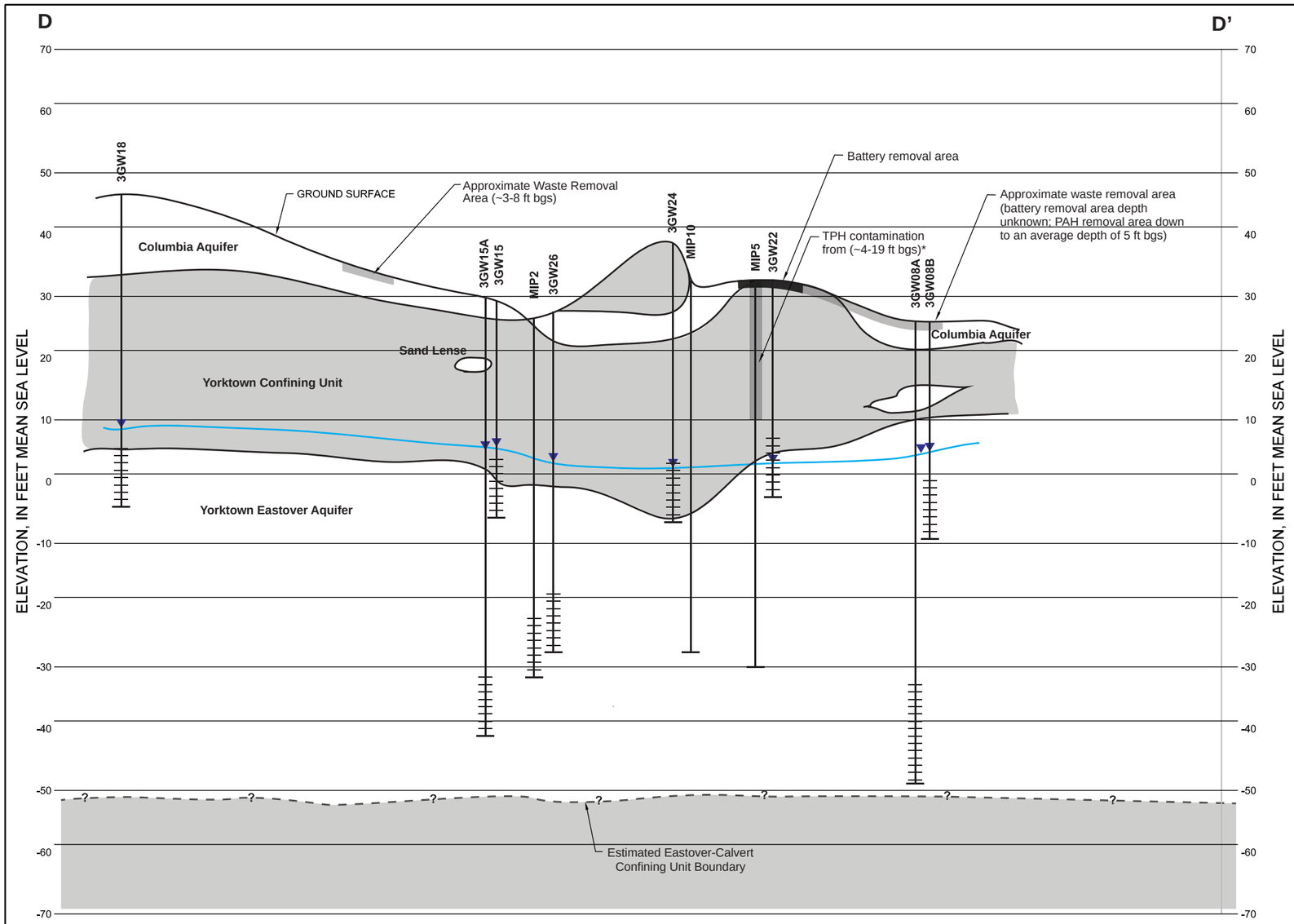


*TPH-diesel range = 350,000 µg/kg
gas range = 220 JB
oil range = 66,000

LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. MIP DATA WAS NOT USED FOR LITHOLOGY DETERMINATION DUE TO EXPOSURE TO PETROLEUM. CONDUCTIVITY RESULTS WERE CONSIDERED UNRELIABLE. HOWEVER, ECD RESULTS WERE UNAFFECTED BY PETROLEUM CONTAMINATION AND WERE USED TO HELP DETERMINE EXTENT OF CONTAMINATION.
3. SOME CONTAMINATION WAS OBSERVED IN THE UNSATURATED ZONE BASED ON THE MIP RESULTS AND DPT CONFIRMATION SAMPLES CONFIRM MIP SIGNATURE AS CVOCs.

VERTICAL SCALE
10
0
50
APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 4-8
SITE 3 CONCEPTUAL HYDROGEOLOGIC CROSS SECTION D-D'
PHASE II REMEDIAL INVESTIGATION REPORT, SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIG4_9_SITE1_COLUMBIA_POTENTIO.MXD BALDRIDG 5/31/2012 7:31:34 PM

Legend

- Columbia Aquifer Monitoring Well
- Membrane Interface Probe Location
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour
- Groundwater Flow Direction
- Tributary
- Intermittent Tributary

*1GW20 well not used for groundwater contours

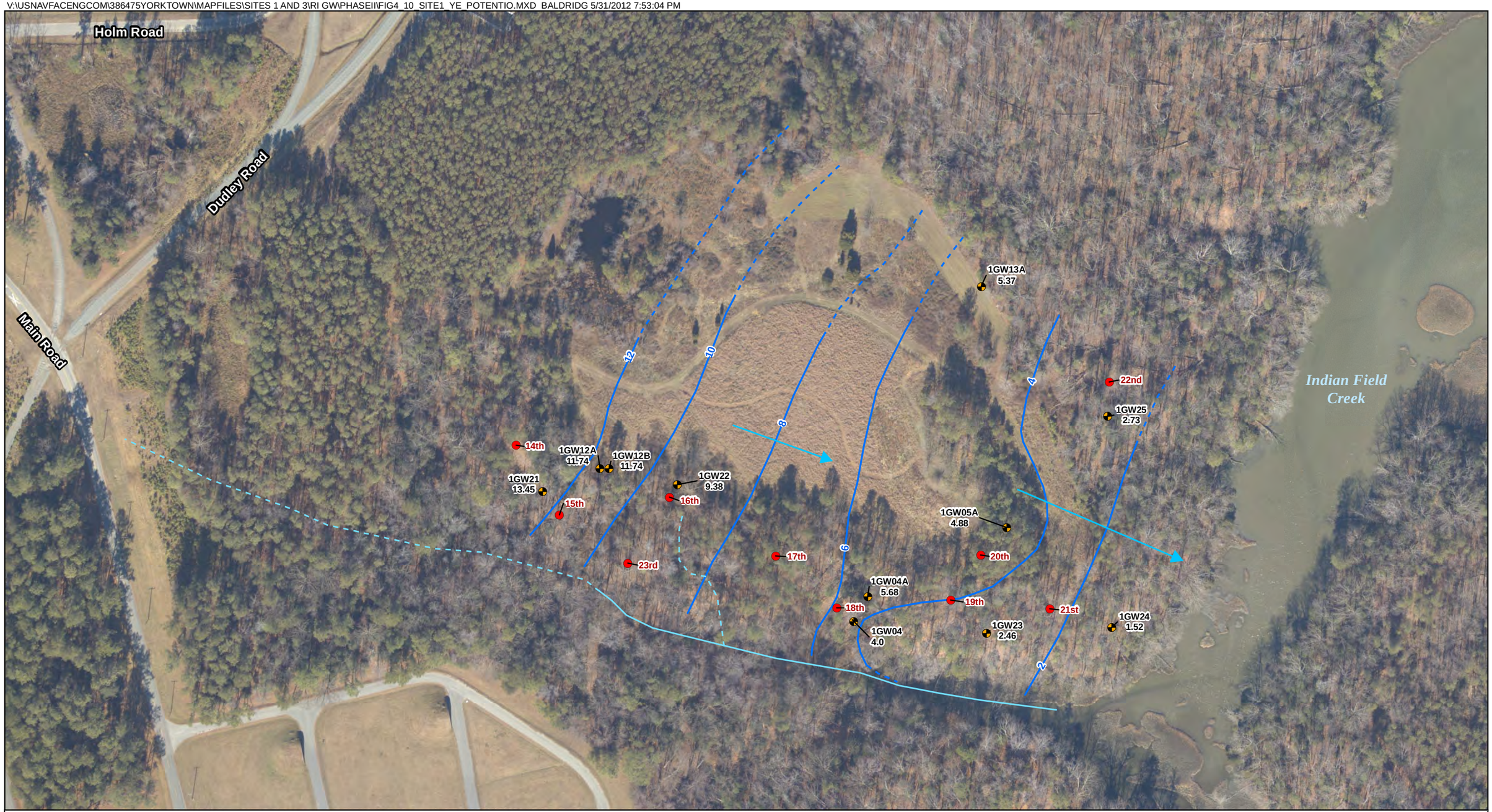
N
W E
S

0 75 150
Feet

Figure 4-9
Site 1 Groundwater Elevation Contour Map
Columbia Aquifer
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIG4_10_SITE1_YE_POTENTIO.MXD BALDRIDG 5/31/2012 7:53:04 PM



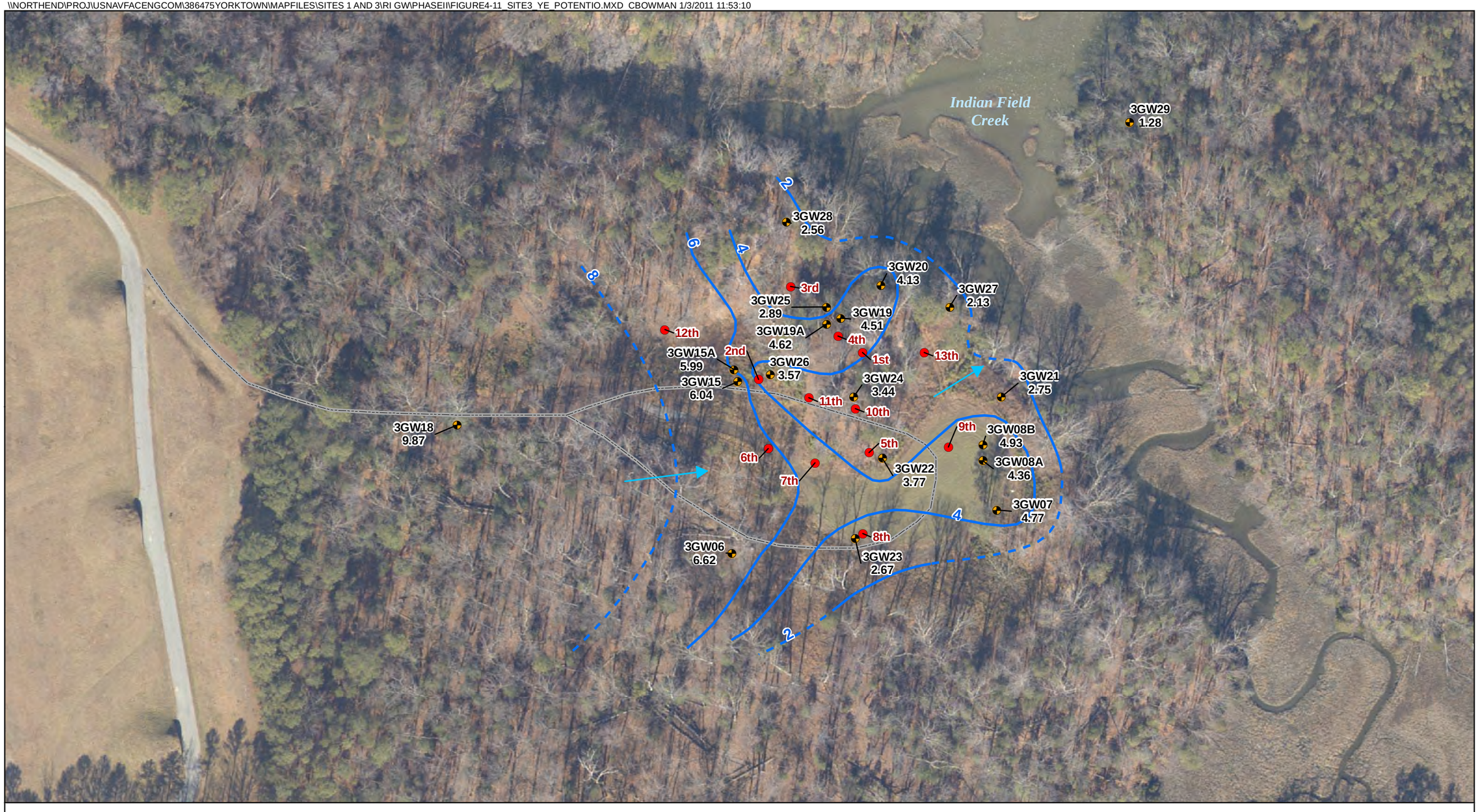
Legend

- Yorktown-Eastover Aquifer Monitoring Well
- Membrane Interface Probe Location
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour
- Groundwater Flow Direction
- Tributary
- Intermittent Tributary

Figure 4-10
Site 1 Groundwater Elevation Contour Map
Yorktown-Eastover Aquifer
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE4-11_SITE3_YE_POTENTIO.MXD CBOWMAN 1/3/2011 11:53:10



Legend

- Yorktown-Eastover Aquifer Monitoring Well
- Membrane Interface Probe Location
- Landfill Access Road
- Groundwater Elevation Contour
- Inferred Groundwater Elevation Contour
- Groundwater Flow Direction

N
W E
S

0 100 200 Feet

Figure 4-11
Site 3 Groundwater Elevation Contour Map
Yorktown-Eastover Aquifer
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

SECTION 5

Nature and Extent of Contamination

This section presents an evaluation of the nature and extent of contamination within groundwater, surface water, sediment, and sediment pore-water at Sites 1 and 3. Additionally, a limited evaluation of soil was conducted to facilitate a greater understanding of potential sources to groundwater at Sites 1 and 3. Environmental samples were collected in areas to better define the vertical and horizontal extent of contamination and to assess if the contaminants are migrating to Indian Field Creek. This section describes the analytical results, contaminants identified, and the vertical and horizontal extent of contamination.

Laboratory analytical reports for the Phase II RI that are the basis of this section are included in **Appendix G**. The following sections are sub-divided by site, media, and aquifers present at the sites.

5.1 Groundwater

MIP and DPT groundwater samples were used initially to characterize the extent of groundwater contamination at each site. Results from the MIP and DPT samples were then used to site the locations of permanent monitoring wells. Analytical results from DPT groundwater sampling are discussed first in this subsection. However, the groundwater samples collected from the permanent monitoring wells provide the basis for the evaluation of risks to human and ecological receptors presented in Sections 6 and 7.

5.1.1 Site 1

MIP/DPT Results

A total of 10 MIP borings (MIP-14 through -23) were completed at Site 1 (**Figure 5-1 and Appendix A**). The highest ECD response was observed at MIP-16 at depths ranging from 15 to 25 feet bgs within the Columbia aquifer. A depth-discrete groundwater sample was collected at this location from 9 to 13 feet bgs because the yield was too low at the depth interval at which the ECD response was highest. Chemicals at concentrations exceeding screening criteria in the sample from this location comprise 1,1,2-TCA, 1,1-DCE, 1,2-DCE, PCE, TCE, and vinyl chloride (**Table 5-1** and **Figure 5-1).** All other ECD responses from other MIP locations were significantly lower. No VOCs were detected in groundwater DPT locations that were collected in the same locations as MIP-20, -21, and -22, except for chloroform at MIP-21. Chloroform was detected at a concentration of 8.5 µg/L at this location, which is greater than the RSL of 0.19 µg/L, but less than the MCL of 80 µg/L.

Monitoring Well Sampling

New wells were installed based on the results of the MIP/DPT sampling as described in Section 3. The resultant monitoring well network of new and existing wells at Site 1 consists of 19 monitoring wells that provide the basis for defining the nature and extent of contamination in groundwater. While shown on the figures to aid determining the extent of contamination, well 3GW29, located across Indian Field Creek from Sites 1 and 3, is not considered part of the Site 1 well network.

A discussion of the general groundwater geochemistry and nature and extent of contamination by aquifer and contaminant type is provided below. A discussion of the significance of each natural attenuation parameter and geochemical conditions within groundwater is provided in Section 8.

General Groundwater Geochemistry

Specific conductivity values provide an indication of the TDS within groundwater. Specific conductivity values measured during the purging of all monitoring wells indicate low TDS concentrations indicative of freshwater conditions within both the Columbia and Yorktown-Eastover aquifers (**Table 5-2**). pH values recorded ranged from 2.45 to 9.3 and 6.94 to 12.67 within the Columbia and Yorktown-Eastover aquifers, respectively. However, the pH meter likely malfunctioned during Phase II RI measurements. Historical measurements indicate that the pH of the groundwater generally ranges from 5 to 8 (CH2M HILL, 2007).

Volatile Organic Compounds

A total of 15 VOCs were observed in the permanent monitoring wells installed in the Columbia and Yorktown-Eastover aquifers, respectively (**Table 5-3**). Two VOCs exceeded one or more screening criteria within the Columbia aquifer (**Figure 5-2**) and eight exceeded screening criteria within the Yorktown-Eastover aquifer (**Figure 5-3**).

TCE was the most frequently detected VOC in Site 1 groundwater samples. This compound exceeded screening criteria (tap water RSL of 2 µg/L and MCL of 5 µg/L) at one monitoring well within the Columbia aquifer (1GW12) and four monitoring wells within the Yorktown-Eastover aquifer (1GW04A, 1GW12A, 1GW22, 1GW24).

Concentration contour maps were prepared for TCE in groundwater at Site 1 in relation to the appropriate, most protective regulatory standard (tap water RSL), as shown in **Figures 5-4** and **5-5**. The depicted contours on the figures represent concentrations exceeding the tap water RSL by less than 10 times (light green), from 10 to less than 100 times (dark green), from 100 to less than 1,000 times (yellow), from 1,000 times to one percent of the solubility of the chemical [i.e., 11,000 µg/L for TCE (orange)], and greater than one percent of the solubility (red). **Figures 5-4** and **5-5** also present the locations of the conceptual cross-sections at Site 1, A-A' and B-B', that show the horizontal and vertical distribution of TCE beneath Site 1. TCE is concentrated around 1GW22, which is screened in the shallower portion (27 to 37 feet bgs) of the Yorktown-Eastover aquifer.

Although TCE was observed at only one monitoring well within the Columbia aquifer (56 µg/L), it is anticipated that the TCE plume extends at least approximately 140 feet horizontally to the southeast based on the depth-discrete sample collected at MIP-16 (no Columbia aquifer well was installed in this location due to insufficient yield). TCE also likely extends downward through the Yorktown confining unit to the Yorktown-Eastover aquifer in the area of monitoring wells 1GW12A and 1GW22. This is evidenced by the elevated ECD response at MIP-16, PID measurements within the confining unit during the drilling of 1GW22, and the high concentration of TCE historically detected in 1GW12B (850 µg/L in 2005), which is screened in the Yorktown confining unit (**Figure 5-4**). 1GW12B could not be sampled during this round of monitoring due to insufficient yield. TCE was observed within the Yorktown-Eastover aquifer with a maximum concentration of 18,000 µg/L (1GW22). The TCE plume within the Yorktown-Eastover aquifer is presumed to extend approximately 900 feet to the southeast to monitoring well 1GW24, which is adjacent to Indian Field Creek (**Figure 5-4**).

It is important to note that during this and previous field investigations, TCE was detected at concentrations greater than 11,000 µg/L. 11,000 µg/L represents 1 percent of the aqueous solubility of TCE. Concentrations greater than this value are generally indicative of the likely presence of TCE as DNAPL (Bedient, Rifai, and Newell, 1994). However, during this field investigation DNAPL was not observed. DNAPL Indigo Blue Dye testing kits were used to identify potential DNAPL in saturated soil at Site 1, but none was detected using these kits (**Table 5-4**). Historical reports also do not indicate visual observations of the presence of free product. DNAPL is discussed in more detail in Section 8, as it can act as a continuous source of groundwater contamination.

Vinyl chloride, a daughter-product of TCE biodegradation, was observed within the Yorktown-Eastover aquifer at two monitoring wells (1GW04 and 1GW22) above screening criteria (tap water RSL of 0.016 µg/L and MCL of 2 µg/L), with a maximum concentration of 3.6 µg/L (1GW22). Vinyl chloride generally occurred in the same area as the TCE plume. Degradation of TCE to vinyl chloride is discussed in more detail in Section 6.

Chloroform was observed in one Columbia aquifer monitoring well (1GW14) and two Yorktown-Eastover aquifer monitoring wells (1GW24 and 1GW25) above a screening criterion (tap water RSL of 0.19 µg/L), with a maximum concentration of 0.74 µg/L (1GW24). Chloroform is a common laboratory contaminant; however, detections in monitoring well samples are spatially consistent with chloroform detections in DPT samples. Therefore, chloroform is likely a site-related constituent at Site 1.

Other chemicals observed above a screening criterion in the Yorktown-Eastover aquifer only occurred at one monitoring well (1GW22). These chemicals comprise 1,1,2-TCA (1.7 µg/L), 1,1-DCE (8.6 µg/L), 1,2-DCE (3,000 µg/L), and PCE (0.21J µg/L). 1,1-DCE and cis-1,2-DCE are also daughter products of TCE.

Inorganic Constituents

Inorganic constituent concentrations detected in samples from Site 1 wells were compared against MCLs, RSLs, and WPNSTA Yorktown background criteria for the Columbia and Yorktown-Eastover aquifers. Nine inorganics were observed above either the MCL or RSL in Site 1 groundwater (**Table 5-3** and **Figures 5-6** and **5-7**).

Total chromium was observed at concentrations exceeding the tap water RSL of 0.043 µg/L in samples from six Columbia aquifer monitoring wells (1GW05, 1GW13, 1GW14, 1GW17, 1GW18, and 1GW19). The maximum concentration of 2.9J µg/L was detected at 1GW19. This value was not greater than the MCL of 100 µg/L. This concentration is also less than the station-wide background value for total chromium in the Columbia aquifer of 12.8 µg/L. Total chromium was also detected above the RSL in all nine Yorktown-Eastover aquifer monitoring wells (1GW04, 1GW04A, 1GW05A, 1GW12A, 1GW13A, 1GW21, 1GW22, 1GW23, and 1GW24). The maximum concentration of 35.2 µg/L was detected at 1GW05A, which is located on the eastern side of the site near Indian Field Creek. This concentration is greater than the station-wide background value for total chromium in the Yorktown-Eastover aquifer of 15.1 µg/L. Dissolved chromium was observed at concentrations greater than the RSL in the sample from one Columbia aquifer monitoring well (0.89J µg/L at 1GW18) and one Yorktown-Eastover aquifer monitoring well (1.4J µg/L at 1GW22). Chromium was not detected in the dissolved background sample set for the Columbia aquifer. The background UTL for dissolved chromium in the Yorktown Eastover aquifer is 6.04 µg/L, which is greater than site detections of chromium.

Total antimony was observed at concentrations exceeding one or more criteria (tap water RSL of 1.5 µg/L and MCL of 6 µg/L) at five Columbia aquifer monitoring wells (1GW05, 1GW13, 1GW17, 1GW18, and 1GW19). The maximum concentration of 9.9J µg/L was detected at 1GW18, which lies on the eastern perimeter of the site. Antimony was not detected in the total metals samples collected to support the basewide background investigation. Total antimony was also detected at seven Yorktown-Eastover aquifer wells (1GW05A, 1GW12A, 1GW13A, 1GW21, 1GW, 23, 1GW24, and 1GW25). The maximum concentration of 10.1 µg/L was detected at 1GW12A, which is less than the station-wide background value for total antimony in the Yorktown Eastover aquifer (18.8 µg/L). Dissolved antimony was not detected at the site.

Total iron was observed at concentrations exceeding a screening criterion (tap water RSL of 2,600 µg/L) at four Columbia aquifer wells (1GW05, 1GW14, 1GW17, and 1GW18). The maximum concentration of 11,800 µg/L was detected at 1GW18, on the eastern edge of the site. This value slightly exceeds the station-wide background value for total iron in the Columbia aquifer of 11,600 µg/L. Total iron was also detected at levels in exceedance of the RSL at three Yorktown-Eastover aquifer wells (1GW21, 1GW22, and 1GW24). The maximum concentration of 13,500 µg/L was detected at 1GW21. This exceeds the background UTL for iron in the Yorktown-Eastover aquifer of 894 µg/L. Dissolved iron exceeded the RSL at two Columbia aquifer wells (1GW05 and 1GW18). The maximum concentration of 8,000 µg/L was observed at 1GW18. This concentration exceeds the station-wide background value for dissolved iron in the Columbia aquifer of 17.7 J µg/L. Dissolved iron did not exceed the RSL in the Yorktown-Eastover aquifer samples.

Total arsenic was observed at concentrations exceeding one or more criteria (tap water RSL of 0.045 µg/L and MCL of 10 µg/L) in samples from two Columbia aquifer monitoring wells (1GW14 and 1GW18). The maximum concentration of 26.6 µg/L was detected at 1GW14. This value exceeds the station-wide background concentration of 5.2 µg/L for total arsenic in the Columbia aquifer. Total arsenic was also detected at three Yorktown-Eastover aquifer monitoring wells (1GW04, 1GW21, and 1GW24). The maximum concentration of 19.1 µg/L was detected at 1GW24, in exceedance of the station-wide background value for total arsenic in the Yorktown aquifer (2.28 µg/L). Dissolved arsenic exceeding one or more criteria was detected in two monitoring wells (1GW05 and 1GW18) in Columbia aquifer samples. The maximum concentration of 28.6 µg/L was detected at 1GW18. Dissolved arsenic was not detected in the background sample set collected from the Columbia aquifer. Dissolved arsenic exceeded one or more criteria in three Yorktown-Eastover aquifer wells (1GW04, 1GW22, 1GW25, and 1GW29). The maximum concentration of 5.4 J µg/L was detected at 1GW04. This exceeds the station-wide background value for dissolved arsenic in the Yorktown-Eastover aquifer (1.37 µg/L)

Total manganese was observed at concentrations exceeding the tap water RSL of 88 µg/L at one Columbia aquifer well (238 µg/L at 1GW18) and at four Yorktown-Eastover aquifer wells (1GW12A, 1GW21, 1GW22, and 1GW24).

The maximum concentration of 705 µg/L was observed at the upgradient monitoring well 1GW21. These concentrations exceeded background values for total manganese in the Columbia and Yorktown Eastover aquifers (105 µg/L and 57.9 µg/L, respectively). Dissolved manganese exceeded the tap water RSL in one Columbia aquifer well (233 µg/L at 1GW18) and two Yorktown-Eastover aquifer wells (1GW22 and 1GW24). The maximum concentration of 125 µg/L was detected at 1GW22. These concentrations exceeded background values for dissolved manganese in the Columbia and Yorktown Eastover aquifers (50.4 µg/L and 49.5 µg/L, respectively).

Total cobalt was observed at concentrations exceeding the tap water RSL of 1.1 µg/L at two Columbia aquifer wells (1GW05 and 1GW14). The maximum concentration detected was 11 µg/L at 1GW05. This value exceeded the station-wide background value of 5 J µg/L for total cobalt in the Columbia aquifer. Total cobalt also exceeded the RSL at two Yorktown-Eastover aquifers (1GW21 and 1GW24). The maximum detected concentration detected was 5.5 µg/L in 1GW21. This value is less than the station-wider background value of 20.6 µg/L for total cobalt in the Yorktown-Eastover aquifer. Dissolved cobalt exceeded the RSL in two Columbia aquifer wells (1GW05 and 1GW13). The maximum detected concentration was 13.7 µg/L at 1GW05, which exceeds the station-wide background value of 4.6 J µg/L for dissolved cobalt in the Columbia aquifer. Dissolved cobalt was not detected in any Yorktown-Eastover aquifer monitoring well.

Cadmium (total and dissolved), selenium (dissolved), and zinc (total and dissolved) were detected at concentrations exceeding one or more criteria in two or fewer Columbia monitoring wells. The only exceedance of selenium (1GW18) was K-flagged (value may be biased high and actual concentration may be lower) with a concentration of 19.3K µg/L, slightly above the tap water RSL of 18 µg/L. Selenium was not detected in any Columbia aquifer background samples. Elevated total and dissolved concentrations of zinc, 2,210 µg/L and 2,470 µg/L, respectively, were observed at the Columbia aquifer monitoring well 1GW12 above the tap water RSL (1,100 µg/L). Total and dissolved background zinc values for the Columbia aquifer are 30.3 J µg/L and 15.6 J µg/L, respectively. Elevated total and dissolved cadmium were observed in wells 1GW12 and 1GW19 above the respective RSL (1.8 µg/L) and MCL (5 µg/L). Maximum concentrations of total and dissolved cadmium were 11.4 µg/L and 13 µg/L, respectively in 1GW12. Cadmium was not detected in the background dataset for the Columbia aquifer.

Total aluminum (maximum concentration of 4,960 µg/L in 1GW21), cadmium (maximum concentration of 2.9J µg/L in 1GW21), and vanadium (maximum concentration of 33.5 µg/L in 1GW21) were detected at concentrations exceeding their RSLs of 3,700 µg/L, 1.8 µg/L, and 18 µg/L, respectively, in two or fewer Yorktown-Eastover monitoring wells. Maximum values of these chemicals also exceeded corresponding background values.

5.1.2 Site 3

MIP/DPT Results

A total of 13 MIP borings (MIP-1 through -13) were completed at Site 3 (**Figure 5-8** and **Appendix A**). The highest ECD response was observed within unsaturated soils at MIP-5 at depths ranging from 4 to 19 feet bgs. A DPT groundwater sample was collected at this location from 30 to 34 feet bgs and contained 1,2-DCE, TCE, and vinyl chloride above screening criteria (**Table 5-5** and **Figure 5-8**). A DPT groundwater sample was also collected at an elevated ECD response observed at MIP-10 from 35 to 39 feet bgs. Chemicals observed above screening criteria in this sample included 1,1-dichloroethane (1-1-DCA), 1,1-DCE, 1,2-DCE, chloromethane, TCE, and vinyl chloride. Vinyl chloride and TCE were also detected in groundwater DPT sample locations that were collected in the same locations as MIP-6 and MIP-9, respectively.

Monitoring Well Sampling

New wells were installed based on the results of the MIP/DPT sampling as described in Section 3. The resultant monitoring well network of new and existing wells at Site 3 consists of 20 monitoring wells that provide the basis for defining the nature and extent of contamination in groundwater.

A discussion of the general groundwater geochemistry and nature and extent of groundwater contamination by aquifer and contaminant type at Site 3 is provided below. A discussion of the significance of each natural attenuation parameter and geochemical conditions within groundwater is discussed in Section 8.

General Groundwater Geochemistry

Specific conductivity values measured during the purging of all monitoring wells indicate low TDS concentrations indicative of freshwater conditions within the Yorktown-Eastover aquifer (**Table 5-6**). pH values recorded ranged from 6.16 to 12.79. However, the pH meter likely malfunctioned during Phase II RI measurements. Historical measurements indicate that the pH of the groundwater generally ranges from 5 to 8 (CH2M HILL, 2007).

Volatile Organic Compounds

A total of 12 VOCs were detected in the permanent monitoring wells installed in the Yorktown-Eastover aquifer (**Table 5-7**). Concentrations of seven VOCs exceeded one or more screening criteria (**Figure 5-9**).

TCE was the most frequently detected VOC in Site 3 groundwater samples, exceeding screening criteria (tap water RSL of 2 µg/L and MCL of 5 µg/L) at 12 monitoring wells (3GW08B, 3GW15, 3GW19, 3GW19A, 3GW21, 3GW22, 3GW23, 3GW24, 3GW25, 3GW26, 3GW27, and 3GW28). The maximum concentration of 400 µg/L was detected at 3GW24.

Concentration contour maps were prepared for TCE within the Yorktown-Eastover aquifer at Site 3 in relation to the most protective regulatory standard (tap water RSL), as shown in **Figures 5-10** and **5-11**. The depicted contours on the figure represent concentrations exceeding the tap water RSL by less than 10 times (light green), from 10 to less than 100 times (dark green), and from 100 to less than 1,000 times (yellow). **Figures 5-10** and **5-11** also present the locations of the conceptual cross-sections at Site 3, C-C' and D-D' that show the horizontal and vertical distribution of TCE beneath Site 3. The TCE plume is anticipated to occur generally beneath the former landfill area and extends approximately 400 feet toward Indian Field Creek (**Figure 5-11**). As shown in **Figures 5-10** and **5-11**, the dissolved TCE plume generally occurs within the uppermost portion of the Yorktown-Eastover aquifer. It should be noted that some uncertainty exists with respect to the extent of the VOC plume to the northwest of 3GW28; the installation and sampling of an additional monitoring well in this area is recommended (see Section 9.2).

Cis-1,2-DCE and vinyl chloride, daughter products of TCE, were also detected in Site 3 groundwater samples. Cis-1,2-DCE was detected in seven monitoring wells (3GW19, 3GW22, 3GW24, 3GW25, 3GW26, 3GW27, and 3GW28) exceeding one or more of the screening criteria (tap water RSL of 7.3 µg/L and MCL of 70 µg/L). The maximum concentration was 1,400 J µg/L at 3GW24.

Vinyl chloride was observed above the screening criteria (tap water RSL of 0.016 µg/L and MCL of 2 µg/L) in samples from nine monitoring wells (3GW15, 3GW19, 3GW22, 3GW23, 3GW24, 3GW25, 3GW26, 3GW27, and 3GW28). The maximum concentration of 1,200 µg/L was detected at 3GW24. The highest concentration of vinyl chloride was observed in the sample from the same monitoring well where the highest concentrations of TCE and 1,2-DCE were observed. In addition, elevated concentrations of vinyl chloride were also observed adjacent to Indian Field Creek (1,100 µg/L at 3GW27), where groundwater discharges to the surface water body.

Total 1,2-DCE was observed above the screening criteria (tap water RSL of 33 µg/L and MCL of 70 µg/L) at seven monitoring wells (3GW19, 3GW22, 3GW24, 3GW25, 3GW26, 3GW27, and 3GW28). The maximum concentration of 1,400 µg/L was observed at 3GW24.

1,1-DCE exceeded the MCL (7 µg/L) with a concentration of 12J µg/L and 1,1-DCA exceeded the RSL (2.4 µg/L) with a concentration of 8.2J µg/L at 3GW24. 3GW24 is located in the center of the former landfill and had the highest concentrations of TCE, cis-1,2-DCE, and vinyl chloride.

1,4-dichlorobenzene exceeded its RSL of 0.43 µg/L, with a concentration of 0.56 J µg/L at 3GW25.

Testing for the presence of DNAPL was completed at Site 3 (**Table 5-4**). The dye kit indicated a positive response in the location of 3GW22 only. Petroleum contamination was observed at this location, and the positive response was likely due to petroleum rather than chlorinated solvent DNAPL. The analytical data also support this premise because TCE was detected at this site at well below the 1% aqueous solubility of TCE in water.

Inorganic Constituents

Inorganic constituent concentrations were compared against the MCLs, RSLs, and WPNSTA Yorktown background criteria for the Yorktown-Eastover aquifer. Eleven total inorganics were observed above one or more screening criteria in the Yorktown-Eastover aquifer (**Table 5-7** and **Figure 5-12**). Arsenic and manganese were the only dissolved inorganic constituents observed above screening criteria.

Total arsenic was observed at concentrations exceeding one or more screening criteria (tap water RSL of 0.045 µg/L and MCL of 10 µg/L) in seven monitoring wells (3GW19A, 3GW21, 3GW23, 3GW24, 3GW25, 3GW27, and 3GW29). The maximum concentration of 60.7 µg/L was detected at 3GW19A. This was greater than the station-wide background value of 2.28 µg/L. Dissolved arsenic was observed at concentrations exceeding one or more screening criteria in 17 monitoring wells (3GW06, 3GW08A, 3GW08B, 3GW15, 3GW19, 3GW19A, 3GW20, 3GW20A, 3GW21, 3GW22, 3GW23, 3GW24, 3GW25, 3GW26, 3GW27, 3GW28, and 3GW29). The maximum concentration of 34.7 µg/L was detected at 3GW21. This was greater than the station-wide background value of 1.37 µg/L

Total chromium was observed at concentrations exceeding one or more screening criteria (tap water RSL of 0.043 µg/L and MCL of 100 µg/L) in eleven Yorktown-Eastover aquifer monitoring wells (3GW08B, 3GW15, 3GW15A, 3GW19A, 3GW20, 3GW21, 3GW24, 3GW25, 3GW26, 3GW27, and 3GW29). The maximum total concentration of 524 µg/L was detected at 3GW24, in exceedance of the station-wide background value of 15.1 µg/L. Dissolved chromium was not detected in any monitoring well sample exceeding any screening criteria.

Total manganese was observed above a screening criterion (tap water RSL of 88 µg/L) in eight monitoring well samples (3GW15, 3GW19A, 3GW21, 3GW22, 3GW23, 3GW24, 3GW25, and 3GW27). The maximum total concentration of 1,320 µg/L was at 3GW19A. The station-wide background value for total manganese is 57.9 µg/L. Dissolved manganese was also observed above the RSL in eight of the monitoring well samples (3GW15, 3GW19A, 3GW21, 3GW22, 3GW23, 3GW24, 3GW25, and 3GW27). The maximum concentration of 1,260 µg/L was detected at 3GW21. The station-wide background value for dissolved manganese is 49.5 µg/L. Manganese detections occurred within similar monitoring well samples with exceedances of arsenic.

Total cobalt was observed above the tap water RSL of 1.1 µg/L in six monitoring well samples (3GW15, 3GW19A, 3GW21, 3GW24, 3GW25, and 3GW27). The maximum concentration of 10.9 µg/L was observed at 3GW24. This is less than the background value of 20.6 µg/L. Dissolved cobalt was not detected above screening criteria.

Total iron was detected at concentrations exceeding the tap water RSL of 2,600 µg/L in six monitoring well samples (3GW19A, 3GW20, 3GW21, 3GW24, 3GW26, and 3GW27). The maximum concentration of 49,600 µg/L was detected at 3GW19A. This exceeded the station-wide background value of 894 µg/L. Dissolved iron was not above screening criteria.

Total aluminum was detected at concentrations exceeding the tap water RSL of 3,700 µg/L in four monitoring well samples (3GW19A, 3GW21, 3GW24, and 3GW27). The maximum concentration of 19,300 µg/L was observed at 3GW19A, in exceedance of the basewide background value of 2230 µg/L. Dissolved aluminum was not detected above screening criteria.

Total vanadium was detected at concentrations exceeding the tap water RSL of 18 µg/L in four monitoring well samples (3GW19A, 3GW21, 3GW24, and 3GW27). The maximum concentration of 77.6 µg/L was detected at 3GW19A, in exceedance of the basewide background value of 26.2 µg/L. Dissolved vanadium was not detected at any well above screening criteria.

Total lead was detected at 17 µg/L, exceeding its RSL and MCL of 15 µg/L in a sample from 3GW19A. However, this concentration is less than the background value of 21.3 µg/L. Total zinc was also detected in the sample from 3GW19A at a concentration of 2,780 µg/L, greater than its MCL of 1,100 µg/L and the background value of 4.52 µg/L. Total nickel was detected in the sample from 3GW24 at a concentration of 250 µg/L greater than the RSL of 73 µg/L and the background value of 11.4 µg/L. Dissolved thallium was detected in the sample from 3GW08B, greater than the tap water RSL (0.24 µg/L) and MCL (2 µg/L), with a concentration of 4.1J µg/L. Thallium was not detected in the dissolved background dataset.

Of the ten total inorganics detected in groundwater at levels exceeding one or more screening criteria, the maximum concentrations of seven of them were detected in the sample collected from 3GW19A.

5.2 Surface Water, Sediment, and Sediment Pore-Water

Surface water, sediment, and sediment pore-water samples were collected from the unnamed tributary between Sites 1 and 3 and Indian Field Creek to assess the potential for contamination in surface water or sediment resulting from groundwater discharge. **Table 5-8** summarizes the VOCs and inorganic constituents detected in surface water at Sites 1 and 3. **Table 5-9** summarizes the VOCs and inorganic constituents observed in sediment at Sites 1 and 3, respectively. **Figures 5-13** and **5-14** present the inorganic constituents exceeding screening criteria in surface water and sediment at both Sites 1 and 3. **Table 5-10** and **Figure 5-15** summarize the VOCs observed in sediment pore-water.

5.2.1 Surface Water Quality

General surface water quality parameters measured at Sites 1 and 3 are summarized in **Tables 5-8** and **5-11**. Surface water TDS concentrations measured from the unnamed tributary at Site 1 and Indian Field Creek ranged from 19,500 to 25,900 milligrams per liter (mg/L), indicative of saline conditions. Measured DO concentrations indicate aerobic conditions, and ranged from 4.82 to 8.53 mg/L. ORP values were generally positive. Salinity (between 1.6% and 2%) and specific conductivity (between 22 mS/cm and 32.1 mS/cm) are consistent with brackish water. Temperatures ranged from 25 degrees Celsius to 28.5 degrees Celsius, typical of area surface water temperatures in the summer months. Turbidity values were generally very low, with the exception of sample SW12, which was very turbid (>999 ntu). This was the most downstream sample location in Indian Field Creek.

5.2.2 Volatile Organic Compounds

No VOCs exceeded screening criteria in surface water or sediment at Sites 1 and 3. Detections below screening criteria comprised carbon disulfide, chloromethane, and toluene in surface water carbon disulfide, 2-butanone, and styrene in sediment; and carbon disulfide, cyclohexane, and toluene in sediment pore-water. Carbon disulfide is a naturally occurring constituent commonly observed in marsh sediments. The principal Sites 1 and 3 groundwater COPCs, TCE, 1,2-DCE, and vinyl chloride, were not observed in surface water, sediment, and sediment pore-water.

5.2.3 Inorganic Constituents

Three inorganics were detected above ecological screening criteria or RSLs within surface water (**Figure 5-13**). Total manganese exceeded the ERA marine screening value of 100 µg/L in three surface water samples (3SW05, 3SW06, and 1SW31). The maximum concentration detected was 235 µg/L at 1SW31. Additionally, dissolved manganese exceeded the screening value in 1SW31 with a concentration of 202 µg/L. Total copper was detected exceeded the ERA marine screening value of 3.73 µg/L in 1SW31 with a concentration of 9.6 L µg/L. Copper was not observed above screening criteria in groundwater at either site. Dissolved arsenic was detected in nine surface water samples (3SW03, 3SW04, 3SW05, 3SW07, 3SW08, 3SW09, 3SW11, 1SW31, and 1SW33) above the adjusted tap water RSL of 0.45 µg/L. The maximum concentration detected was 4.4J µg/L in 3SW04 and 1SW31.

Seven inorganics were detected above ESVs for sediment at Sites 1 and 3 (**Figure 5-14**). Chromium exceeded a screening criterion (adjusted residential soil RSL of 2.9 mg/kg) in twelve sediment sample locations (3SD03, 3SD04, 3SD05, 3SD06, 3SD07, 3SD08, 3SD09, 3SD10, 3SD11, 3SD12, 1SD32, and 1SD33), with a maximum concentration of 55.1L mg/kg (3SD08). Aluminum exceeded the ESV of 18,000 mg/kg at nine sediment sample locations (3SD06, 3SD07, 3SD08, 3SD09, 3SD10, 3SD11, 3SD12, 1SD32, and 1SD33), with a maximum concentration of 27,800 mg/kg (3SD08). Aluminum was not frequently observed within groundwater at either site. Arsenic exceeded screening criteria (adjusted residential soil RSL of 3.9 mg/kg and/or ESV of 8.2 mg/kg) in nine sediment samples (3SD06, 3SD07, 3SD08, 3SD09, 3SD10, 3SD11, 3SD12, 1SD32, and 1SD33). The maximum concentration of 11.6L mg/kg was detected 1SD33. Nickel exceeded a screening criterion (ESV of 21 mg/kg) at five sediment samples (3SD08, 3SD09, 3SD10, 1SD32, and 1SD33), with a maximum concentration of 26.6 mg/kg (3SD08). Four sediment samples (3SD07, 3SD08, 3SD09, and 1SD32) had manganese concentrations above the

ESV of 260 mg/kg, with a maximum concentration of 349L mg/kg (3SD09). Vanadium exceeded the ESV of 57 mg/kg at four sediment samples (3SD08, 3SD09, 1SD32, and 1SD33) with a maximum concentration of 73.8L mg/kg (3SD08). Barium exceeded the ESV of 48 mg/kg in one sediment sample with a concentration of 51.4J mg/kg (3SD08).

5.3 Soil Sampling

An approach for soil sampling was added to the Phase II RI Work Plan (CH2M HILL, 2008) as an addendum to the field investigation due to possible contamination in the unsaturated zone observed during the MIP study. At Site 1, one soil sample was collected from MIP-21 between 15 and 19 feet bgs and analyzed for VOCs based on an elevated ECD and PID response from the MIP log. However, no VOCs were observed above screening criteria in the soil sample (**Table 5-12**).

At Site 3, two soil samples were collected from MIP-5 (12 to 16 feet bgs and 15 to 19 feet bgs) and analyzed for VOCs, SVOCs, total inorganics, pesticides, PCBs, and TPH (**Table 5-13**). The samples were collected based on elevated PID and ECD responses from the MIP log. No VOCs, SVOCs, pesticides, or PCBs concentrations exceeded the screening criteria. TPH within the diesel range was observed at a concentration of 350,000 μg/kg. Five inorganic constituents exceeded one or more criteria, including aluminum (12,700E mg/kg), arsenic (30.5E mg/kg), chromium (35.1E mg/kg), cobalt (17.4E mg/kg), and iron (30,600E mg/kg). However, all inorganic constituents were below the Yorktown subsurface soil background UTL, except for chromium (35.1E mg/kg), which slightly exceeded the background concentration (34 mg/kg).

During the investigations, it was also noted that additional evaluation of the efficacy, spatial coverage and thickness of the soil coverage at Site 1 may be necessary. Any uncertainty associated with the soil cover is not anticipated to impact the conclusions of this RI. However, additional investigation will likely be necessary prior to completion of the FS for Site 1.

TABLE 5-1
Depth-Discrete Groundwater Detection and Exceedance Results - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	**MCL-Groundwater**	**Adjusted Tap Water RSLs Nov 2011**	YS01-DW001	YS01-DW002	YS01-DW003	YS01-DW004
Sample ID			YS01-DW001-0109	YS01-DW002-0109	YS01-DW003-0109	YS01-DW004-0209
			MIP 16	MIP 21	MIP 22	MIP 20
Sample Depth			9-13 ft bgs	35-39 ft bgs	45-49 ft bgs	9-13 ft bgs
Sample Date			01/29/09	01/29/09	01/30/09	02/02/09
Chemical Name						
Volatile Organic Compounds (UG/L)						
1,1,2-Trichloroethane	5	0.041	1.7	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	--	2.4	0.5 U	0.5 U	0.5 U	0.8
1,1-Dichloroethene	7	26	21	0.5 U	0.5 U	0.2 J
1,2-Dichloroethane	5	0.15	0.12 J	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	70	13	1,700	0.5 U	0.5 U	0.5 U
Acetone	--	1200	26	1.5 L	2.5 R	4.4 L
Benzene	5	0.39	0.15 J	0.5 U	0.5 U	0.5 U
Carbon disulfide	--	72	0.28 J	0.5 U	0.5 U	0.21 J
Chloroethane	--	2100	0.61	0.5 U	0.5 U	0.5 U
Chloroform	80	0.19	0.5 U	8.5	0.5 U	0.5 U
Chloromethane	--	19	0.94	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	70	2.8	1,700	0.5 U	0.5 U	0.5 U
Ethylbenzene	700	1.3	0.16 J	0.66	0.5	0.24 J
m- and p-Xylene	--	19	0.75 J	1 U	1 U	0.24 J
Methylene chloride	5	4.7	0.12 J	0.26 B	0.28 B	0.18 B
o-Xylene	--	19	0.31 J	0.5 U	0.5 U	0.5 U
Tetrachloroethene	5	0.072	0.52	0.5 U	0.5 U	0.5 U
Toluene	1,000	86	3.1	0.37 J	0.28 J	0.18 J
trans-1,2-Dichloroethene	100	8.6	14	0.5 U	0.5 U	0.5 U
Trichloroethene	5	0.26	11,000 J	0.49 J	0.5 U	0.16 J
Vinyl chloride	2	0.015	32 J	0.5 U	0.5 U	0.5 U
Xylene, total	10,000	19	1.1	0.5 U	0.5 U	0.26 J
Semivolatile Organic Compounds (UG/L)						
No Detections	--	--	NA	NA	NA	NA

Notes:

Shading indicates exceedance of MCL Groundwater

Bold indicates exceedance of RSLs

NA - Not analyzed

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

L - Analyte present, value may be biased low, actual value may be higher

R - Unreliable Result

U - The material was analyzed for, but not detected

MG/L - Milligrams per liter

UG/L - Micrograms per liter

RSLs - regional screening levels

MCLs - maximum contaminant levels

ft - feet

bgs - below ground surface

DW01, DW02, DW03, and DW04 samples were collected at corresponding MIP points 16, 21, 22, and 20, respectively

TABLE 5-2
Groundwater Parameters - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Columbia Aquifer

Station ID	YS01-GW05	YS01-GW12	YS01-GW13	YS01-GW14	YS01-GW17	YS01-GW18	YS01-GW19
Sample ID	YS01-GW05-0309	YS01-GW12-0309	YS01-GW13-0309	YS01-GW14-0309	YS01-GW17-0309	YS01-GW18-0309	YS01-GW19-0309
Sample Date	3/10/09	3/13/09	3/9/09	3/13/09	3/12/09	3/11/09	3/11/2009
Field Parameter							
Dissolved Oxygen (mg/L)	1.36	6.49	7.84	4.06	5.7	0.97	1.9
Chemets Dissolved Oxygen (mg/L)	2	6	7	5.5	3.5	0	3.5
Nitrate (mg/L)	1	1	4	1.5	0	0	0
Nitrite (mg/L)	0.004	0.015	0.008	0.046	0.01	0.006	0.004
Oxidation Reduction Potential (mV)	29	134	357	300	220	-30	28
pH	5.75	5.53	4.43	2.45	4.18	9.3	6.12
Salinity (pct)	0.02	0.02	0	0	0	0.02	0.01
Specific Conductivity (mS/cm)	0.576	0.594	0.103	0.089	0.082	0.545	0.183
Sulfide (mg/L)	0	0	0	0	0	0	0
Temperature (°C)	10.41	10.62	14.93	9.78	11.43	13.8	15.88
Turbidity (NTU)	429	3.3	0	0	34.1	0	74.4

Yorktown-Eastover Aquifer

Station ID	YS01-GW04	YS01-GW04A-0309	YS01-GW05A	YS01-GW12A	YS01-GW13A	YS01-GW21	YS01-GW22	YS01-GW23	YS01-GW24	YS01-GW25
Sample ID	YS01-GW04-0309	YS01-GW04A	YS01-GW05A-0309	YS01-GW12A-0309	YS01-GW13A-0309	YS01-GW21-0309	YS01-GW22-0309	YS01-GW23-0309	YS01-GW24-0309	YS01-GW25-0309
Sample Date	3/16/09	3/16/09	3/10/09	3/12/09	3/9/09	3/12/09	3/16/09	3/10/09	3/10/09	3/10/09
Field Parameter										
Dissolved Oxygen (mg/L)	0.48	0.15	0.36	0.08	0.97	0.65	0.99	0.89	0	0
Chemets Dissolved Oxygen (mg/L)	3	1.5	1	1.5	2	2	3	2	1.5	1.5
Nitrate (mg/L)	0	0	0	0	0	1	0	0	0	0
Nitrite (mg/L)	0	0.013	0	0.006	0.013	0	0	0	0	0.04
Oxidation Reduction Potential (mV)	-87	-179	-121	-120	-70	11	121	-58	-52	-4
pH	7.81	12.67	7.64	12.12	10.46	8.91	6.94	7.19	10.57	9.22
Salinity (pct)	0.01	0.01	0.01	0.01	0.01	0.03	0.04	0.02	0.02	0.04
Specific Conductivity (mS/cm)	0.314	0.224	0.199	0.299	0.252	0.663	0.887	0.467	0.406	0.999
Sulfide (mg/L)	0	0	0.008	0	0	0	0	0	0	0
Temperature (°C)	12.15	15.6	15.29	10.5	20.06	15.42	11.98	15.71	11.49	11.96
Turbidity (NTU)	166	0	326	27.6	3.5	390	40.6	328	228	376

Notes:

C - Degrees centigrade
mg/L - Milligrams per liter

mS/cm - Milliseimens per centimeter
mV - Millivolts

NTU - Nephelometric turbidity unit
pct - Percent
NA - Not analyzed

TABLE 5-3
Groundwater Detection and Exceedance Results - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	Yorktown Background Criteria - Yorktown-Eastover Aquifer (November 2010)	Yorktown Background Criteria - Columbia Aquifer	MCL-Groundwater	Adjusted Tap Water RSLs Nov 2011	YS01-GW004	YS01-GW004A	YS01-GW005	YS01-GW005A	YS01-GW012	YS01-GW012A		YS01-GW013	YS01-GW013A	YS01-GW014	YS01-GW017	YS01-GW018
Aquifer					Yorktown-Eastover	Yorktown-Eastover	Columbia	Yorktown-Eastover	Columbia	Yorktown-Eastover		Columbia	Yorktown-Eastover	Columbia	Columbia	Columbia
Sample ID					YS01-GW04-0309	YS01-GW04A-0309	YS01-GW05-0309	YS01-GW05A-0309	YS01-GW12-0309	YS01-GW12A-0309	YS01-GW12AP-0309	YS01-GW13-0309	YS01-GW13A-0309	YS01-GW14-0309	YS01-GW17-0309	YS01-GW18-0309
Sample Date					03/16/09	03/16/09	03/10/09	03/10/09	03/13/09	03/12/09	03/12/09	03/09/09	03/09/09	03/13/09	03/12/09	03/11/09
Chemical Name																
Volatile Organic Compounds (µg/l)																
1,1,2-Trichloroethane	--	--	5	0.041	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	--	--	--	2.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	--	--	7	26	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	--	--	70	13	20	0.2 J	0.5 U	0.5 U	4.1	14 J	26 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Benzene	--	--	5	0.39	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Carbon disulfide	--	--	--	72	0.5 U	0.5 U	1.4	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Chloroform	--	--	80	0.19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U
Chloromethane	--	--	--	19	0.23 B	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
cis-1,2-Dichloroethene	--	--	70	2.8	20	0.21 J	0.5 U	0.5 U	4.3	15 J	28 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Dichlorodifluoromethane (Freon-12)	--	--	--	19	0.5 U	0.5 U	0.5 U	0.5 U	0.14 J	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	--	--	700	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Tetrachloroethene	--	--	5	0.072	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	--	--	100	8.6	0.15 J	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Trichloroethene	--	--	5	0.26	0.5 U	3.7	0.5 U	0.5 U	56	57 J	95 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Vinyl chloride	--	--	2	0.015	0.48 J	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U	4.2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Total Metals (µg/l)																
Aluminum	2230	3,170	--	1600	1,300	162 J	3,010	187 J	224	720	778	1,120	617	599	500	111 J
Antimony	18.8	ND	6	0.6	5.1 B	5.2 B	6.8 J	9.3 J	3.5 B	10.1	7.7 J	6 J	7.6 J	4.5 B	6.7 J	9.9 J
Arsenic	2.28	5.2 L	10	0.045	5.2 J	2.2 U	4.9 B	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	26.6	9.7 B	23.4
Barium	118	53 J	2,000	290	46.7 J	10 J	30.6 J	11.2 J	101 J	37 J	33.7 J	167 J	38.2 J	104 J	2.8 J	43.6 J
Beryllium	2.45	0.38 K	4	1.6	0.42 U	0.42 U	0.73 J	0.42 U	0.42 UL	0.42 U	0.42 U	0.42 U	0.42 U	0.42 UL	0.42 U	0.42 U
Cadmium	0.605	ND	5	0.69	0.64 U	0.64 U	0.64 U	0.64 U	11.4	0.64 U	0.66 J	0.64 U	0.64 U	0.64 U	0.64 U	1.4 J
Chromium	15.1	12.8 L	100	0.031	2.2 J	4 J	2.3 J	35.2	0.7 U	2.5 J	3.7 J	1.6 J	29.3	1.8 J	1.7 J	1.8 J
Cobalt	20.6	5 J	--	0.47	1.6 U	1.6 U	11	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	4.1 J	1.6 U	1.6 U
Copper	12.2	4.7 J	1,300	62	0.85 J	0.91 J	1.2 J	4.6 J	6	2.9 J	2.9 J	0.84 U	1.3 J	1.8 J	0.84 U	0.97 J
Iron	894	11,600	--	1100	2,170	320	5,850	555	375	669 J	954 J	1,610	871	9,910	6,690	11,800
Lead	21.3	2.5 L	15	15	1.4 UL	1.4 UL	2.2 L	3.5 L	1.6 L	2.7 L	3.8 L	2.6 L	3.4 L	6 L	2.4 L	2.4 L
Manganese	57.9	105	--	32	72.3	26.9	59.9	50.7	37.3	59.8 J	110 J	66	80.9	26	23.6	238
Nickel	11.4	ND	--	30	0.67 U	2.1 J	8.3 B	15.8 B	6.2 B	1.9 B	2.3 B	2.8 B	12.8 B	4.2 B	0.67 U	0.67 U
Selenium	--	ND	50	7.8	2.2 UL	2.2 UL	2.8 J	2.2 U	2.2 UL	2.2 U	2.2 U	2.2 U	2.2 U	2.2 UL	2.2 U	2.2 U
Vanadium	26.2	16 J	--	7.8	3.2 J	0.57 U	7.6 J	0.96 J	0.57 U	1.8 J	1.2 J	1.5 J	1.4 J	1 J	16.7 J	1.4 J
Zinc	4.52	30.2 J	--	470	6.3 J	5.2 U	34.6	15.1 J	2,210	13.7 J	18.7 J	49.8	5.2 U	14.5 J	5.2 U	14.2 J
Dissolved Metals (µg/l)																
Aluminum, Dissolved	100	20.9 J	--	1600	56.1 B	53.4 U	1,810	44.1 U	53.4 U	173 B	212 B	185 J	44.1 U	442	61.5 B	44.1 U
Arsenic, Dissolved	1.37	ND	10	0.045	5.4 J	2.2 U	5.7 J	2.8 U	2.2 U	2.8 U	3.3 B	2.8 U	2.8 U	2.2 U	2.8 U	28.6
Barium, Dissolved	127	37.2 J	2,000	290	42 J	9.3 J	28.1 J	9.9 J	103 J	23.9 J	24.3 J	162 J	20.1 J	103 J	2.1 J	39.3 J
Cadmium, Dissolved	0.177	ND	5	0.69	0.64 U	0.64 U	0.34 U	0.34 U	13	0.34 U	0.34 U	0.34 U	0.34 U	0.64 U	0.34 U	0.34 U
Chromium, Dissolved	6.04	ND	100	0.031	0.7 U	0.7 U	0.88 U	0.88 U	0.7 U	0.88 U	0.88 U	0.88 U	0.88 U	0.7 U	0.88 U	0.89 J
Cobalt, Dissolved	0.7	4.6 J	--	0.47	1.6 U	1.6 U	13.7	0.65 U	1.6 U	0.65 U	0.67 J	1.4 J	0.65 U	3.4 B	0.65 U	0.87 J
Copper, Dissolved	3	2.3 J	1,300	62	7.7 L	1.2 L	1.8 B	21.6	4.1 L	1.2 J	0.9 U	1.2 B	1.4 B	0.95 L	0.9 U	1.2 J
Iron, Dissolved	275	17.7 J	--	1100	596	31.1 B	3,420	19.9 U	24.6 U	26.1 B	19.9 U	19.9 U	19.9 U	24.6 U	19.9 U	8,000
Lead, Dissolved	1.7	ND	15	15	5.3	1.4 U	2.6 U	2.6 U	1.4 U	2.6 U	2.6 U	2.6 U	2.6 U	1.4 U	2.6 U	2.6 U
Manganese, Dissolved	49.5	50.4	--	32	71	14.4	54.6	28.2	0.99 B	5.4 J	3.2 J	63.6	19.3	25.7	5.7 J	233
Mercury, Dissolved	0.1	ND	2	0.43	0.1 U	0.1 U	0.1 UL	0.1 UL	0.1 U	0.15 L	0.1 UL	0.1 UL	0.1 UL	0.1 U	0.1 UL	0.1 UL
Nickel, Dissolved	12.2	ND	--	30	0.92 B	1 B	9 J	1.3 U	7.6 J	7.1 J	1.3 U	2.1 J	1.3 U	3.9 B	1.3 U	1.3 U
Selenium, Dissolved	9.1	ND	50	7.8	2.2 U	2.2 U	4.1 U	4.1 U	2.2 U	4.1 U	4.1 U	4.1 U	4.1 U	2.2 U	4.1 U	19.3 K
Vanadium, Dissolved	4.3	2.7 J	--	7.8	0.57 U	0.57 U	4.4 J	0.47 U	0.57 U	0.55 B	0.67 B	0.47 U	0.98 B	0.57 U	1.6 B	0.7 B
Zinc, Dissolved	--	15.6 J	--	470	11.5 B	11.1 B	33.8	1 B	2,470	3.7 B	2.6 B	44.8	1.6 J	11.8 B	2.6 B	11.5 J
Wet Chemistry																
Alkalinity (mg/l)	--	--	--	--	198	62.7	10 U	93.3	156	32.3	NA	10 U	62.7	10 U	10 U	123
Chloride (mg/l)	--	--	--	--	12 D	8.3 JD	35 D	7.4 JD	9 JD	10 D	NA	10 D	9.4 JD	8.5 JD	6.8 JD	6.5 JD
Ethane (ug/l)	--	--	--	--	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	2 U	2 U
Ethene (ug/l)	--	--	--	--	2 U	2 U	2 U	2 U	2 U	2 U	NA	2 U	2 U	2 U	2 U	2 U
Sulfate (mg/l)	--	--	--	--	26 D	8.1 JD	190 D	14 JD	36 D	19 JD	NA	17 JD	13 JD	15 JD	13 JD	42 D
Total organic carbon (TOC) (mg/l)	--	--	--	--	2.2 J	0.79 J	11	1.4 J	3.4 J	1.5 J	NA	1.7 J	0.82 J	2.4 J	2.3 J	6.1
Dechlorinating Bacteria (cells/ml)																
Dehalococcoides	--	--	--	--	NA	NA	NA	NA	8.5	NA	NA	NA	NA	NA	NA	NA

Notes:

Concentrations shaded blue exceed MCLs

Concentrations shaded green exceed RSLs

Concentrations shaded red exceed both MCLs and RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

B - Analyte not detected above the level reported in blanks

D - Compound identified in an analysis at a secondary dilution factor

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high,

L - Analyte present, value may be biased low, actual value may be higher

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

cells/ml - Cells per milliliter

mg/l - Milligrams per liter

µg/l - Micrograms per liter

TABLE 5-3
Groundwater Detection and Exceedance Results - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	Yorktown Background Criteria - Yorktown-Eastover Aquifer (November 2010)	Yorktown Background Criteria - Columbia Aquifer	MCL-Groundwater	Adjusted Tap Water RSLs Nov 2011	YS01-GW019	YS01-GW021	YS01-GW022		YS01-GW023	YS01-GW024	YS01-GW025
Aquifer					Columbia	Yorktown-Eastover	Yorktown-Eastover		Yorktown-Eastover	Yorktown-Eastover	Yorktown-Eastover
Sample ID					YS01-GW19-0309	YS01-GW21-0309	YS01-GW22-0309	YS01-GW22P-0309	YS01-GW23-0309	YS01-GW24-0309	YS01-GW25-0309
Sample Date					03/11/09	03/12/09	03/16/09	03/16/09	03/10/09	03/10/09	03/10/09
Chemical Name											
Volatile Organic Compounds (µg/l)											
1,1,2-Trichloroethane	--	--	5	0.041	0.5 U	0.5 U	1.7	1.6	0.5 U	0.5 U	0.5 U
1,1-Dichloroethane	--	--	--	2.4	0.5 U	0.5 U	0.26 J	0.26 J	0.5 U	0.5 U	0.6
1,1-Dichloroethene	--	--	7	26	0.5 U	0.5 U	8.3	8.6	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	--	--	70	13	0.5 U	0.5 U	3,000	2,800	0.5 U	0.42 J	0.5 U
Benzene	--	--	5	0.39	0.5 U	0.5 U	0.24 J	0.24 J	0.5 U	0.5 U	0.5 U
Carbon disulfide	--	--	--	72	0.5 U	0.15 J	0.37 J	0.39 J	0.5 U	0.5 U	0.5 U
Chloroform	--	--	80	0.19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.74	0.73
Chloromethane	--	--	--	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.14 J	0.5 U
cis-1,2-Dichloroethene	--	--	70	2.8	0.5 U	0.5 U	3,000	2,900	0.5 U	0.44 J	0.5 U
Dichlorodifluoromethane (Freon-12)	--	--	--	19	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Ethylbenzene	--	--	700	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.16 J	0.13 J
Tetrachloroethene	--	--	5	0.072	0.5 U	0.5 U	0.21 J	0.21 J	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	--	--	100	8.6	0.5 U	0.5 U	5.6	5.3	0.5 U	0.5 U	0.5 U
Trichloroethene	--	--	5	0.26	0.5 U	0.54	18,000	17,000	1.4	6.9	0.5 U
Vinyl chloride	--	--	2	0.015	0.5 U	0.5 U	3.6	3.6	0.5 U	0.5 U	0.5 U
Total Metals (µg/l)											
Aluminum	2230	3,170	--	1600	962	4,960	1,420 J	3,920 J	929	3,410	639
Antimony	18.8	ND	6	0.6	8.8 J	8.3 J	5.3 B	4.4 B	7.1 J	8.8 J	6.4 J
Arsenic	2.28	5.2 L	10	0.045	2.2 U	14.7	2.2 U	2.2 U	3.4 B	19.1	2.2 U
Barium	118	53 J	2,000	290	28.2 J	58.1 J	27.7 J	31.9 J	21.2 J	38.6 J	32.9 J
Beryllium	2.45	0.38 K	4	1.6	0.42 U	0.42 U	0.42 UL	0.42 UL	0.42 U	0.42 U	0.42 U
Cadmium	0.605	ND	5	0.69	5.8	2.9 J	0.64 U	0.64 U	0.64 U	1.4 J	0.99 J
Chromium	15.1	12.8 L	100	0.031	2.9 J	25.1	9 J	11.5	4.9 J	25.8	8.4 J
Cobalt	20.6	5 J	--	0.47	1.6 U	5.5	1.6 U	1.6 U	1.6 U	2.5 J	1.6 U
Copper	12.2	4.7 J	1,300	62	3.3 J	9.1	2.7 J	3.3 J	1.5 J	3.7 J	0.84 U
Iron	894	11,600	--	1100	1,970	13,500	3,960 J	5,280 J	2,060	11,200	1,800
Lead	21.3	2.5 L	15	15	4.9 L	6 L	1.4 UL	1.6 L	2.4 L	4.1 L	2.7 L
Manganese	57.9	105	--	32	20.6	705	103	103	80.9	200	65.7
Nickel	11.4	ND	--	30	1.1 B	17.3 B	4.5 J	5.6 J	2.6 B	10.7 B	4 B
Selenium	--	ND	50	7.8	2.2 U	2.2 U	2.2 UL	2.2 UL	2.2 U	2.2 U	2.2 U
Vanadium	26.2	16 J	--	7.8	3.1 J	33.5	4.9 J	9.6 J	5.2 J	24.6	4.6 J
Zinc	4.52	30.2 J	--	470	281	33.9	14.9 J	20.8	10.6 J	21.2	5.8 J
Dissolved Metals (µg/l)											
Aluminum, Dissolved	100	20.9 J	--	1600	88.1 B	51.1 B	582 J	202 B	44.1 U	44.1 U	44.1 U
Arsenic, Dissolved	1.37	ND	10	0.045	9.6 B	6.8 B	2.9 J	2.2 U	2.8 U	2.8 U	5.2 J
Barium, Dissolved	127	37.2 J	2,000	290	25.2 J	13.6 J	26.3 J	22.6 J	19.7 J	18.1 J	29.9 J
Cadmium, Dissolved	0.177	ND	5	0.69	5.5	0.34 U	0.64 U	0.64 U	0.34 U	0.34 U	0.34 U
Chromium, Dissolved	6.04	ND	100	0.031	0.88 U	0.88 U	1.4 J	0.7 U	0.88 U	0.88 U	0.88 U
Cobalt, Dissolved	0.7	4.6 J	--	0.47	0.65 U	0.65 U	1.6 U	1.6 U	0.65 U	0.65 U	0.65 U
Copper, Dissolved	3	2.3 J	1,300	62	2.2 J	0.9 U	2.5 L	0.84 UL	1 B	1.4 B	1.5 B
Iron, Dissolved	275	17.7 J	--	1100	103 B	19.9 U	1,500 J	382 J	33.6 B	19.9 U	19.9 U
Lead, Dissolved	1.7	ND	15	15	2.6 U	2.6 U	2.9 J	1.4 U	2.6 U	2.6 U	2.6 U
Manganese, Dissolved	49.5	50.4	--	32	16.6	11	125	98.2	64.8	116	59.1
Mercury, Dissolved	0.1	ND	2	0.43	0.1 UL	0.1 UL	0.14 J	0.1 U	0.1 UL	0.1 UL	0.1 UL
Nickel, Dissolved	12.2	ND	--	30	1.6 J	1.3 U	2.3 B	1.7 B	1.3 U	1.3 U	1.3 U
Selenium, Dissolved	9.1	ND	50	7.8	10.1 K	6.7 K	3.1 B	2.2 U	4.1 U	7.6 K	13.9 K
Vanadium, Dissolved	4.3	2.7 J	--	7.8	0.47 U	0.47 U	2.1 J	1 J	0.79 B	0.63 B	0.79 B
Zinc, Dissolved	--	15.6 J	--	470	257	1.5 B	15.6 B	8 B	2.2 B	0.74 U	1.4 J
Wet Chemistry											
Alkalinity (mg/l)	--	--	--	--	38	174	208	NA	204	116	301
Chloride (mg/l)	--	--	--	--	4.5 JD	12 D	50 D	NA	10 D	11 D	20 D
Ethane (ug/l)	--	--	--	--	2 U	2 U	2 U	NA	2 U	0.2 J	0.2 J
Ethene (ug/l)	--	--	--	--	2 U	2 U	2 U	NA	2 U	0.2 J	0.1 J
Sulfate (mg/l)	--	--	--	--	29 D	32 D	40 D	NA	36 D	21 JD	33 D
Total organic carbon (TOC) (mg/l)	--	--	--	--	3.6 J	1.6 J	1.8 J	NA	2.9 J	8	5.1
Dechlorinating Bacteria (cells/ml)											
Dehalococcoides	--	--	--	--	NA	NA	5.3 J	NA	NA	NA	NA

Notes:

Concentrations shaded blue exceed MCLs

Concentrations shaded green exceed RSLs

Concentrations shaded red exceed both MCLs and RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

B - Analyte not detected above the level reported in blanks

D - Compound identified in an analysis at a secondary dilution factor

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high,

L - Analyte present, value may be biased low, actual value may be

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

cells/ml - Cells per milliliter

mg/l - Milligrams per liter

µg/l - Micrograms per liter

TABLE 5-4
Indigo Blue Test Results
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Indigo Blue Test Results					
Site	**Well**	**Test Results**	**PID Reading (PPM)**	**Depth (ft bgs)**	**Comment**
1	1GW22	Test Not Taken	48	23'	
1	1GW23	Negative	36.7	13'	
1	1GW24	Negative	0	35'	Taken at top of water table
1	1GW25	Negative	6.8	24'	
3	3GW21	Test Not Taken	N/A	N/A	
3	3GW22	**Positive**	33	15.5'	Bead turned blue indicating more than 500 ppm TPH
3	3GW23	Negative	1	20'	
3	3GW24	Negative	1.2	25'	
3	3GW25	Negative	3.3	17.5'	
3	3GW26	Negative	0	N/A	Depth not recorded
3	3GW27	Test Not Taken	N/A	N/A	PID Unavailable: Charging
3	3GW28	Negative	1.3	16'	
3	3GW29	Negative	6.4	17'	

TABLE 5-5
Depth-Discrete Groundwater Detection and Exceedance Results - Site 3
Phase II Remedial Investigation Report at Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	**MCL-Groundwater**	**Adjusted Tap Water RSLs Nov 2011**	YS03-DW001	YS03-DW002	YS03-DW003	YS03-DW004
Sample ID			YS03-DW001-0209	YS03-DW002-0209	YS03-DW003-0209	YS03-DW004-0209
Sample Date			02/02/09	02/02/09	02/02/09	02/02/09
Chemical Name						
Volatile Organic Compounds (UG/L)						
1,1-Dichloroethane	--	2.4	1.8 U	0.12 J	0.49 J	8.1 J
1,1-Dichloroethene	7	26	1.8 U	0.5 U	1.4	12 J
1,2-Dichloroethene (total)	70	13	64	0.25 J	12	1,100
1,4-Dichlorobenzene	75	0.42	1.8 U	0.5 U	0.14 J	36 U
Acetone	--	1200	15 L	3 L	1.8 L	180 R
Benzene	5	0.39	1.8 U	0.5 U	0.24 J	36 U
Chloroethane	--	2100	1.8 U	0.5 U	0.41 J	36 U
Chloromethane	--	19	1.1 J	0.5 U	0.5 U	20 J
cis-1,2-Dichloroethene	70	2.8	65	0.25 J	12	1,100
Ethylbenzene	700	1.3	0.61 J	0.82	0.54	36 U
m- and p-Xylene	--	19	3.6 U	0.24 J	1 U	71 U
Methylcyclohexane	--	--	1.8 U	0.5 U	0.12 J	36 U
o-Xylene	--	19	1.8 U	0.5 U	0.14 J	36 U
Toluene	1,000	86	0.57 J	0.42 J	0.32 J	36 U
Trichloroethene	5	0.26	16 J	3.1 J	0.5 U	270 J
Vinyl chloride	2	0.015	1.8	0.5 U	17	690
Xylene, total	10,000	19	1.8 U	0.25 J	0.14 J	36 U
Semivolatile Organic Compounds (UG/L)						
No Detections	--	--	NA	NA	NA	NA

Notes:

Shading indicates exceedance of MCL

Bold box indicates exceedance of Adjusted RSL Tapwater

NA - Not analyzed

J - Analyte present, value may or may not be accurate or precise

L - Analyte present, value may be biased low, actual value may be higher

R - Unreliable Result

U - The material was analyzed for, but not detected

UG/L - Micrograms per liter

TABLE 5-6
Groundwater Parameters Results - Site 3
Phase II Remeidal Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	YS03-GW06	YS03-GW08A	YS03-GW08B	YS03-GW15	YS03-GW15A	YS03-GW18
Sample ID	YS03-GW06-0309	YS03-GW08A-0309	YS03-GW08B-0309	YS03-GW15-0309	YS03-GW15A-0309	YS03-GW18-0309
Sample Date	3/19/09	3/18/09	3/18/09	3/17/09	3/17/09	3/17/09
Field Parameter						
Dissolved Oxygen (mg/L)	0.57	0.01	0.52	0.75	0.24	6.06
Chemets Dissolved Oxygen (mg/L)	5	1.5	1.5	2.5	1.5	7
Oxidation Reduction Potential (mV)	-124	-180	-96	-169	-89	-79
pH	7.48	12.79	6.16	7.57	10.58	12.77
Salinity (pct)	0.02	0.03	0.02	0.03	0.02	0.01
Specific Conductivity (mS/cm)	0.432	0.655	0.534	0.663	0.559	0.179
Temperature (°C)	16.81	15.44	15.36	14.95	14.92	15.06
Turbidity (NTU)	9.1	0	0	NR	10	NR
Nitrite (mg/L)	0.004	0	0	0.015	0.063	0
Nitrate (mg/L)	0	0	0	0	0	0
Sulfide (mg/L)	0	0	0	0	0	0

Station ID	YS03-GW19	YS03-GW19A*	YS03-GW20	YS03-GW20A	YS03-GW21	YS03-GW22
Sample ID	YS03-GW19-0309	YS03-GW19A-0409	YS03-GW20-0309	YS03-GW20A-0309	YS03-GW21-0309	YS03-GW22-0309
Sample Date	3/19/2009	4/6/2009	3/20/2009	3/20/2009	3/18/2009	3/19/2009
Field Parameter						
Dissolved Oxygen (mg/L)	0.32	NR	2.5	2.53	0.45	0.67
Chemets Dissolved Oxygen (mg/L)	2	4	2.5	1.5	2	1
Oxidation Reduction Potential (mV)	-150	NR	-120	-137	-286	-54
pH	7.3	NR	7	7.01	6.56	9.45
Salinity (pct)	0.03	NR	0.9	0.2	0.02	0.05
Specific Conductivity (mS/cm)	0.601	NR	15.9	3.7	0.465	0.999
Temperature (°C)	16.38	NR	15.04	14.95	16.29	17.02
Turbidity (NTU)	0	NR	60	41.4	NR	0
Nitrite (mg/L)	0	0	0.005	0.009	0	0.018
Nitrate (mg/L)	0	0	0	0	0	0
Sulfide (mg/L)	0	0	0	0	0	0

Station ID	YS03-GW23	YS03-GW24	YS03-GW25	YS03-GW26	YS03-GW27	YS03-GW28
Sample ID	YS03-GW23-0309	YS03-GW24-0309	YS03-GW25-0309	YS03-GW26-0309	YS03-GW27-0309	YS03-GW28-0309
Sample Date	3/18/2009	3/30/2009	3/20/2009	3/17/2009	3/20/2009	3/19/2009
Field Parameter						
Dissolved Oxygen (mg/L)	0.4	3.71	2.12	0	2.08	2.26
Chemets Dissolved Oxygen (mg/L)	1	1	1	3	1	5
Oxidation Reduction Potential (mV)	-269	17	17	-184	73	18
pH	6.71	6.2	6.73	12.46	6.65	8.34
Salinity (pct)	0.02	4	0	0.04	0	0.02
Specific Conductivity (mS/cm)	0.578	NR	0.761	0.854	0.95	0.557
Temperature (°C)	15.9	16.8	14.9	14.9	15.6	13.8
Turbidity (NTU)	7	580	120	26.4	165	0
Nitrite (mg/L)	0	0	0	0.008	0	0.015
Nitrate (mg/L)	0	0	0	0	0	0
Sulfide (mg/L)	0	0	0	0	0	0

Station ID	YS03-GW29
Sample ID	YS03-GW29-0309
Sample Date	3/30/2009
Field Parameter	
Dissolved Oxygen (mg/L)	2.56
Chemets Dissolved Oxygen (mg/L)	1.5
Oxidation Reduction Potential (mV)	-119
pH	6.69
Salinity (pct)	0
Specific Conductivity (mS/cm)	0.565
Temperature (°C)	16.3
Turbidity (NTU)	17.6
Nitrite (mg/L)	0
Nitrate (mg/L)	0
Sulfide (mg/L)	0

Notes:

C - Degrees centigrade
mg/L - Milligrams per liter

mS/cm - Milliseimens per centimeter
mV - Millivolts
NTU - Nephelometric turbidity unit
pct - Percent
NA - Not analyzed
NR - Not recorded

* - Data were not collected because obstruction in the well did not allow for a submersible pump and flow through cell; sampling was conducted with a check valve

TABLE 5-7
Groundwater Detection and Exceedance Results - Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	Yorktown Background Criteria - Yorktown-Eastover Aquifer (November 2010)	MCL-Groundwater	Adjusted Tap Water RSLs Nov 2011	YS03-GW006	YS03-GW008A	YS03-GW008B		YS03-GW015	YS03-GW015A	YS03-GW018	YS03-GW019	YS03-GW019A	YS03-GW020	YS03-GW020A	YS03-GW021	YS03-GW022
				Yorktown-Eastover												
Sample ID				YS03-GW06-0309	YS03-GW08A-0309	YS03-GW08B-0309	YS03-GW08BP-0309	YS03-GW15-0309	YS03-GW15A-0309	YS03-GW18-0309	YS03-GW19-0309	YS03-GW19A-0409	YS03-GW20-0309	YS03-GW20A-0309	YS03-GW21-0309	YS03-GW22-0309
Sample Date				03/19/09	03/18/09	03/18/09	03/18/09	03/17/09	03/17/09	03/17/09	03/19/09	04/06/09	03/20/09	03/20/09	03/18/09	03/19/09
Chemical Name																
Volatile Organic Compounds (µg/l)																
1,1-Dichloroethane	--	--	2.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.3 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
1,1-Dichloroethene	--	7	26	0.5 U	0.5 U	0.5 U	0.5 U	0.35 J	0.5 U	0.5 U	3.4 J	0.5 U	0.5 U	0.5 U	0.5 U	0.68 J
1,2-Dichloroethene (total)	--	70	13	0.15 J	0.5 U	0.12 J	0.13 J	3.7	0.18 J	0.5 U	**330**	6.4	0.5 U	0.5 U	2.5	**100**
1,4-Dichlorobenzene	--	75	0.42	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.3 U	0.5 U	0.5 U	0.5 U	0.11 J	2.5 U
Carbon disulfide	--	--	72	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.3 U	0.13 J	0.5 U	0.5 U	1.6	2.5 U
cis-1,2-Dichloroethene	--	70	2.8	0.15 J	0.5 U	0.12 J	0.14 J	**3.7**	0.18 J	0.5 U	**330**	**6.5**	0.5 U	0.5 U	2.5	**110**
Dichlorodifluoromethane (Freon-12)	--	--	19	0.5 U	0.5 U	0.15 J	0.15 J	0.5 U	0.5 U	0.5 U	8.3 U	0.5 U	0.5 U	0.5 U	0.5 U	2.5 U
Ethylbenzene	--	700	1.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.3 U	0.19 J	0.5 U	0.5 U	0.17 J	2.5 U
Methyl acetate	--	--	1600	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	8.3 U	0.5 U	0.5 U	0.5 U	0.4 J	2.5 U
trans-1,2-Dichloroethene	--	100	8.6	0.5 U	0.5 U	0.5 U	0.5 U	0.1 J	0.5 U	0.5 U	2.2 J	0.5 U	0.5 U	0.5 U	0.5 U	0.73 J
Trichloroethene	--	5	0.26	**0.49 J**	0.5 U	**4.9**	**5**	**3.8**	0.5 U	**0.91**	**190**	**3.1**	0.5 U	0.5 U	**2.9**	**63**
Vinyl chloride	--	2	0.015	0.5 U	0.5 U	0.5 U	0.5 U	**2.3**	0.5 U	0.5 U	**58**	**0.26 J**	0.5 U	0.5 U	0.5 U	**9.8**
Total Metals (µg/l)																
Aluminum	2230	--	1600	134 J	119 J	107 J	116 J	309	53.4 U	181 J	149 J	**19,300**	532	190 J	**4,290**	162 J
Arsenic	2.28	10	0.045	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	**60.7**	2.2 U	2.2 U	**45**	2.2 U
Barium	118	2,000	290	26 J	22.9 J	31.6 J	32.4 J	49.5 J	22.8 J	39.7 J	38.5 J	101 J	22.1 J	13.5 J	66 J	61.8 J
Beryllium	2.45	4	1.6	0.83 B	1.2 B	0.42 U	0.42 U	0.42 UL	0.42 UL	0.42 UL	1.1 B	0.69 J	0.93 B	0.5 B	0.45 B	1.2 B
Chromium	15.1	100	0.031	3.6 B	2.5 B	1.2 B	**12.7**	**1.9 J**	**1.4 J**	0.7 U	4.1 B	**123**	**11.7**	3 B	**20.8**	2.2 B
Cobalt	20.6	--	0.47	1.6 U	1.6 U	1.6 U	1.6 U	**2.6 J**	1.6 U	1.6 U	1.6 U	**6.2**	1.6 U	1.6 U	**2.7 J**	1.6 U
Copper	12.2	1,300	62	0.84 UL	0.84 UL	0.84 U	0.84 U	1.7 J	0.84 U	0.84 U	54.9	25.2	0.84 UL	0.84 UL	3.1 J	0.84 UL
Iron	894	--	1100	419	**1,160**	280	306	**1,410**	**1,340**	35.1 B	402	**49,600**	**2,700**	**1,410**	**11,000**	384
Lead	21.3	15	15	1.8 L	1.4 UL	1.4 UL	1.4 UL	1.4 UL	1.4 UL	1.4 UL	2.1 L	**17**	2.7 L	2 L	2.5 L	1.4 UL
Manganese	57.9	--	32	**41.7**	**77.5**	**39.2**	**39**	**219**	**47.6**	0.42 B	**33.3**	**1,320**	25.6	**80.2**	**1,260**	**102**
Mercury	0.081	2	0.43	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.28	0.1 U	0.1 U
Nickel	11.4	--	30	2.8 B	0.86 B	1.4 J	5.8 J	3.4 J	0.67 U	0.67 U	3.1 B	**32.4 J**	5.4 J	2 B	9.3 J	2.6 B
Selenium	ND	50	7.8	2.2 U	2.2 U	2.2 UL	2.2 UL	2.2 UL	2.2 UL	2.2 UL	2.2 U	3.5 J	2.2 U	2.2 U	2.2 UL	2.2 U
Vanadium	26.2	--	7.8	1.1 B	0.98 B	1.3 J	1.4 J	1.5 J	0.57 U	2.4 J	1.1 B	**77.6**	3.4 J	0.95 J	**29**	1.6 B
Zinc	4.52	--	470	5.2 U	5.2 U	6.6 J	20.6	19 J	5.8 J	5.2 U	5.5 J	**2,780**	10.4 J	6.2 J	21.7	5.2 U
Dissolved Metals (µg/l)																
Aluminum, Dissolved	100	--	1600	44.1 U	44.1 U	73.5 B	69.6 B	70.2 B	53.4 U	264 B	44.4 B	**2,040**	66.2 B	44.1 U	108 B	44.1 U
Arsenic, Dissolved	1.37	10	0.045	**4.9 J**	**4.7 J**	**3.5 J**	**3.7 J**	**3.1 J**	2.2 U	2.2 U	**4.8 J**	**5.6 J**	**2.8 J**	**2.9 J**	**34.7**	**6.5 J**
Barium, Dissolved	127	2,000	290	27.4 J	24.6 J	32.4 J	31.2 J	48.5 J	19.7 J	37.4 J	41.7 J	35.2 J	19.4 J	13.5 J	44.5 J	65.1 J
Cadmium, Dissolved	0.177	5	0.69	0.34 U	0.34 U	0.86 B	0.75 B	0.64 U	0.64 U	0.64 U	0.34 U	0.64 U	0.34 U	0.34 U	0.93 B	0.34 U
Copper, Dissolved	3	1,300	62	0.9 U	0.9 U	0.84 UL	0.84 UL	0.84 UL	0.84 UL	0.84 UL	0.9 U	4.3 B	0.9 U	0.9 U	0.84 UL	0.9 U
Iron, Dissolved	275	--	1100	63.5 B	810	24.6 U	24.6 U	956	119	24.6 U	100 B	**1,540**	181	172	**2,010**	140 B
Manganese, Dissolved	49.5	--	32	28.5	**77.3**	**32.8**	**34.9**	**226**	25.5	0.37 U	**32.8**	**448**	13.5	**59.2**	**1,260**	**121**
Mercury, Dissolved	0.1	2	0.43	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 UL	0.1 U	0.11 J	0.1 U	0.13 J
Nickel, Dissolved	12.2	--	30	2.2 B	1.3 U	1.3 B	1.6 B	2.2 B	1.1 B	1.2 B	1.3 U	2.6 B	1.4 B	1.3 U	1.7 B	2.4 B
Selenium, Dissolved	9.1	50	7.8	6.8 L	7.7 L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	9.7 L	2.2 U	4.1 UL	4.4 L	2.3 J	8.4 L
Silver, Dissolved	ND	--	7.1	0.93 J	0.67 B	0.62 U	0.62 U	0.62 U	0.62 U	0.62 U	0.61 U	0.62 U	0.61 U	0.61 U	0.62 U	0.83 J
Thallium, Dissolved	ND	2	0.016	6.2 U	6.2 U	3.3 U	**4.1 J**	3.3 U	3.3 U	3.3 U	6.2 U	3.3 U	6.2 U	6.2 U	3.3 U	6.2 U
Vanadium, Dissolved	4.3	--	7.8	0.57 B	0.47 U	0.57 U	0.57 U	0.57 U	0.57 U	2 J	0.47 U	5.7 J	0.47 U	0.47 U	0.57 U	1.1 B
Zinc, Dissolved	ND	--	470	4.8 B	0.79 B	24.1 B	12 B	8.5 B	8.7 B	5.2 U	1 B	112	0.74 U	1.3 B	5.2 U	2 B
Wet Chemistry																
Alkalinity (mg/l)	--	--	--	10 U	178	300	NA	399	176	10 U	356	160	124	117	293	428
Chloride (mg/l)	--	--	--	12 D	10 D	15 D	NA	7.2 JD	8.9 JD	7.9 JD	14 D	10 D	11 D	12 D	17 D	19 D
Ethane (ug/l)	--	--	--	2 U	2 U	2 U	NA	0.4 J	2 U	2 U	1 J	2 U	2 U	2 U	0.3 J	0.7 J
Ethene (ug/l)	--	--	--	2 U	2 U	2 U	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.2 J	2 U
Nitrate (ug/l)	--	10,000	2,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/l)	--	--	--	62 D	47 D	29 D	NA	18 JD	24 JD	26 D	24 JD	39 D	49 D	25 JD	18 JD	19 JD
Total organic carbon (TOC) (mg/l)	--	--	--	0.44 J	1.3 J	0.54 J	NA	1.8 J	1.1 J	1.9 J	1.4 J	1.8 J	1.3 J	1.6 J	17	2.7 J
Dechlorinating Bacteria (cells/ml)																
Dehalococcoides	--	--	--	NA	NA	NA	NA	NA	NA	NA	6.1	NA	NA	NA	NA	NA

Notes:

Concentrations shaded blue exceed MCLs

Concentrations shaded green exceed Adjusted Tapwater RSLs

Concentrations shaded red exceed both

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

ND - Not detected

B - Analyte not detected above the level reported

D - Compound identified in an analysis at a

J - Analyte present, value may or may not be

K - Analyte present, value may be biased high,

L - Analyte present, value may be biased low,

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

cells/ml - Cells per milliliter

mg/l - Milligrams per liter

µg/l - Micrograms per liter

TABLE 5-7
Groundwater Detection and Exceedance Results - Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	Yorktown Background Criteria - Yorktown-Eastover Aquifer (November 2010)	MCL-Groundwater	Adjusted Tap Water RSLs Nov 2011	YS03-GW023	YS03-GW024	YS03-GW025		YS03-GW026	YS03-GW027	YS03-GW028	YS03-GW029		
				Yorktown-Eastover									
Sample ID				YS03-GW23-0309	YS03-GW24-0309	YS03-GW25-0309	YS03-GW25P-0309	YS03-GW26-0309	YS03-GW27-0309	YS03-GW28-0309	YS03-GW29-0309	YS03-GW29-0709	YS03-GW29P-0709
Sample Date				03/18/09	03/30/09	03/20/09	03/20/09	03/17/09	03/20/09	03/19/09	03/30/09	07/13/09	07/13/09
Chemical Name													
Volatile Organic Compounds (µg/l)													
1,1-Dichloroethane	--	--	2.4	0.5 U	**8.2 J**	1.3 U	1 U	10 U	31 U	3.1 UL	0.5 U	0.5 U	0.5 U
1,1-Dichloroethene	--	7	26	0.5 U	**12 J**	0.47 J	0.43 J	10 U	31 U	3.1 UL	0.5 U	0.5 U	0.5 U
1,2-Dichloroethene (total)	--	70	13	5.9	**1,400**	**51**	**51**	**330**	**880**	**120 L**	0.29 J	0.5 U	0.5 U
1,4-Dichlorobenzene	--	75	0.42	0.5 U	36 U	**0.55 J**	**0.56 J**	10 U	31 U	3.1 UL	0.5 U	0.5 U	0.5 U
Carbon disulfide	--	--	72	0.5 U	36 U	1.3 U	1 U	10 U	31 U	3.1 UL	0.27 J	0.5 U	0.5 U
cis-1,2-Dichloroethene	--	70	2.8	**5.9**	**1,400**	**52**	**52**	**330**	**890**	**120 L**	0.29 J	0.5 U	0.5 U
Dichlorodifluoromethane (Freon-12)	--	--	19	0.5 U	36 U	1.3 U	1 U	10 U	31 U	3.1 UL	0.5 U	0.5 U	0.5 U
Ethylbenzene	--	700	1.3	0.15 J	36 U	1.3 U	1 U	10 U	31 U	3.1 UL	0.59	0.79	0.87
Methyl acetate	--	--	1600	0.5 U	36 U	1.3 U	1 U	10 U	31 U	3.1 UL	0.5 U	0.5 U	0.5 U
trans-1,2-Dichloroethene	--	100	8.6	0.5 U	**8.8 J**	1.3 U	0.27 J	10 U	31 U	1.1 L	0.5 U	0.5 U	0.5 U
Trichloroethene	--	5	0.26	**9.9**	**400**	**9.6**	**9.5**	**130**	**130**	**36 L**	0.24 J	0.5 U	0.5 U
Vinyl chloride	--	2	0.015	**0.19 J**	**1,200**	**4.3**	**4.9**	10 U	**1,100**	**5.2 L**	**0.24 J**	0.5 U	0.5 U
Total Metals (µg/l)													
Aluminum	2230	--	1600	193 J	**13,000**	900	746	713	**5,670**	122 J	369	NA	NA
Arsenic	2.28	10	0.045	**2.7 J**	**32.3**	**3.6 J**	2.2 U	2.2 U	**17.2**	2.2 U	**18.5**	NA	NA
Barium	118	2,000	290	38.4 J	132 J	38.8 J	38.1 J	35.4 J	69.8 J	13.3 J	17.6 J	NA	NA
Beryllium	2.45	4	1.6	0.42 U	0.42 U	1.3 B	1 B	0.42 UL	1.3 B	1.3 B	0.42 U	NA	NA
Chromium	15.1	100	0.031	2.8 B	**524**	**6.1 J**	**4.9 J**	**5.6 J**	**18.2**	1.5 B	**40.4**	NA	NA
Cobalt	20.6	--	0.47	1.6 U	**10.9**	**1.8 J**	**2.7 J**	1.6 U	**5.3**	1.6 U	1.6 U	NA	NA
Copper	12.2	1,300	62	0.84 U	28.9	0.84 UL	0.84 UL	0.84 U	1.9 L	0.84 UL	2 J	NA	NA
Iron	894	--	1100	**2,190**	**36,000**	**2,220**	**1,730**	**2,930**	**7,250**	160	**1,310**	NA	NA
Lead	21.3	15	15	1.4 UL	13.7	2.1 L	1.8 L	1.4 UL	4.7 L	1.4 UL	1.4 U	NA	NA
Manganese	57.9	--	32	**147**	**523**	**147**	**155**	**79.1**	**500**	30.5	**42.7**	NA	NA
Mercury	0.081	2	0.43	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 J	0.1 U	0.1 U	NA	NA
Nickel	11.4	--	30	1.4 B	**250**	3.4 B	3.1 B	2.1 J	15 J	1.3 B	19.4 J	NA	NA
Selenium	ND	50	7.8	2.2 UL	2.2 U	2.2 U	2.2 U	2.2 UL	2.2 U	2.2 U	2.2 U	NA	NA
Vanadium	26.2	--	7.8	1 J	**62**	4.5 J	4 J	2.3 J	**26.1**	1.7 B	3.2 B	NA	NA
Zinc	4.52	--	470	5.2 U	64.6	7 J	6.1 J	5.2 U	34.8	8.4 J	5.2 U	NA	NA
Dissolved Metals (µg/l)													
Aluminum, Dissolved	100	--	1600	69.6 B	53.4 UL	114 B	78.8 B	68.1 B	113 B	44.1 U	53.4 UL	NA	NA
Arsenic, Dissolved	1.37	10	0.045	**6 J**	**6.4 J**	**7.9 J**	**5.2 J**	**3.1 J**	**5.7 J**	**3.2 J**	**25.8**	NA	NA
Barium, Dissolved	127	2,000	290	37.5 J	67 J	37.7 J	37.8 J	33.5 J	60.4 J	13.8 J	17.3 J	NA	NA
Cadmium, Dissolved	0.177	5	0.69	0.75 B	0.64 U	0.34 U	0.34 U	0.64 U	0.44 J	0.34 U	0.64 U	NA	NA
Copper, Dissolved	3	1,300	62	0.84 UL	3.7 B	0.9 U	0.9 U	0.84 UL	1.5 J	0.9 U	3.7 B	NA	NA
Iron, Dissolved	275	--	1100	**1,800**	107 B	49.1 B	43 B	**1,960**	19.9 U	19.9 U	171 B	NA	NA
Manganese, Dissolved	49.5	--	32	**152**	**225**	**148**	**153**	**76.5**	**482**	28.2	**40.7**	NA	NA
Mercury, Dissolved	0.1	2	0.43	0.1 U	0.1 UL	0.1 U	0.1 U	0.1 U	0.1 U	0.1 J	0.1 UL	NA	NA
Nickel, Dissolved	12.2	--	30	0.97 B	15 J	1.4 B	1.9 B	0.67 U	4.4 B	1.3 U	2.3 B	NA	NA
Selenium, Dissolved	9.1	50	7.8	2.2 U	2.9 J	8.7 L	6.4 L	2.2 U	11.2 L	5.8 L	4.4 J	NA	NA
Silver, Dissolved	ND	--	7.1	0.62 U	0.62 U	0.61 U	0.61 U	0.62 U	0.61 U	0.61 U	0.62 U	NA	NA
Thallium, Dissolved	ND	2	0.016	3.3 U	3.3 U	6.2 U	6.2 U	3.3 U	6.2 U	6.2 U	3.3 U	NA	NA
Vanadium, Dissolved	4.3	--	7.8	0.57 U	1 B	0.47 U	0.47 U	0.57 U	0.84 B	1.2 B	0.7 B	NA	NA
Zinc, Dissolved	ND	--	470	5.2 U	9 B	1.6 B	3.7 B	5.2 U	33.8	1 B	5.2 U	NA	NA
Wet Chemistry													
Alkalinity (mg/l)	--	--	--	236	536 D	362	NA	270	386	214	194	NA	NA
Chloride (mg/l)	--	--	--	12 D	56 D	10 D	NA	16 D	33 D	12 D	10 JD	NA	NA
Ethane (ug/l)	--	--	--	0.3 J	21	0.5 J	NA	0.1 J	15	0.2 J	0.1 J	NA	NA
Ethene (ug/l)	--	--	--	0.2 J	1 J	2 U	NA	0.3 J	1 J	2 U	0.05 J	NA	NA
Nitrate (ug/l)	--	10,000	2,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sulfate (mg/l)	--	--	--	95 D	11 JD	18 JD	NA	43 D	20 JD	24 JD	21 JD	NA	NA
Total organic carbon (TOC) (mg/l)	--	--	--	1.5 J	6.8	2.9 J	NA	2 J	1 J	2.1 J	4 J	NA	NA
Dechlorinating Bacteria (cells/ml)													
Dehalococcoides	--	--	--	NA	26.2	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Concentrations shaded blue exceed MCLs

Concentrations shaded green exceed Adjusted Tapwater RSLs

Concentrations shaded red exceed both

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

ND - Not detected

B - Analyte not detected above the level reported

D - Compound identified in an analysis at a

J - Analyte present, value may or may not be

K - Analyte present, value may be biased high,

L - Analyte present, value may be biased low,

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

cells/ml - Cells per milliliter

mg/l - Milligrams per liter

µg/l - Micrograms per liter

TABLE 5-8
Surface Water Detection and Exceedance Results - Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	**ERA Marine SW Screening Value**	**Adjusted RSLs Tap X 10 for SW Nov 2011**	YS01-SW031		YS01-SW032	YS01-SW033
Sample ID			YS01-SW31-0709	YS01-SW31P-0709	YS01-SW32-0709	YS01-SW33-0709
Sample Date			07/23/09	07/23/09	07/21/09	07/21/09
Chemical Name						
Volatile Organic Compounds (µg/l)						
Carbon disulfide	--	720	0.11 J	0.1 J	0.12 L	0.5 UL
Chloromethane	2,700	190	0.12 J	0.5 U	0.5 UL	0.5 UL
Total Metals (µg/l)						
Aluminum	--	16000	1,440 J	2,980 J	761 J	680 J
Barium	200	2900	36.8 J	41.1 J	28.8 J	27.1 J
Cobalt	--	4.7	0.86 L	1.9 L	0.91 L	5 UL
Copper	3.73	620	**9.6 L**	2.3 L	5 UL	5 UL
Iron	--	11000	2,240 J	4,990 J	903	814
Manganese	100	320	**213**	**235**	86.5	70.1
Mercury	1.11	4.3	0.12 B	0.2 U	0.1 J	0.2 U
Vanadium	50	78	5.9 J	9.4 J	4.4 J	3.6 J
Dissolved Metals (µg/l)						
Arsenic, Dissolved	36	0.45	**4.4 J**	10 U	10 U	**2.8 J**
Barium, Dissolved	200	2900	29.7 J	40.3 J	26.5 J	26.1 J
Cadmium, Dissolved	8.8	6.9	0.35 J	5 U	5 U	5 U
Cobalt, Dissolved	--	4.7	0.98 J	5 U	0.6 J	1.1 J
Iron, Dissolved	--	11000	64.8 J	60.7 J	167	270
Manganese, Dissolved	100	320	**160**	**202**	43.5	39.2
Vanadium, Dissolved	50	78	2.6 J	2 B	2.8 J	3.2 J
Zinc, Dissolved	81	4700	12 J	15.1 J	22.4	28
Wet Chemistry						
Total dissolved solids (TDS) (mg/l)	--	--	19,500	NA	24,600	24,800

Station ID	**ERA Marine SW Screening Value**	**Adjusted RSLs Tap X 10 for SW Nov 2011**	YS03-SW003	YS03-SW004	YS03-SW005		YS03-SW006	YS03-SW007	YS03-SW008	YS03-SW009	YS03-SW010	YS03-SW011	YS03-SW012
Sample ID			YS03-SW03-0709	YS03-SW04-0709	YS03-SW05-0709	YS03-SW05P-0709	YS03-SW06-0709	YS03-SW07-0709	YS03-SW08-0709	YS03-SW09-0709	YS03-SW10-0709	YS03-SW11-0709	YS03-SW12-0709
Sample Date			07/24/09	07/24/09	07/23/09	07/23/09	07/22/09	07/22/09	07/22/09	07/22/09	07/22/09	07/21/09	07/21/09
Chemical Name													
Volatile Organic Compounds (µg/l)													
Carbon disulfide	--	720	0.5 U	0.5 U	0.14 J	0.11 J	0.14 J	0.13 J	0.5 U	0.11 J	0.5 U	0.5 UL	0.5 UL
Chloromethane	2,700	190	0.5 U	0.5 U	0.5 U	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UL	0.5 UL
Toluene	215	860	0.5 U	0.13 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.12 J	0.5 UL	0.1 L
Total Metals (µg/l)													
Aluminum	--	16000	413 B	437 B	1,130 J	1,050 J	889 J	754 J	564 J	684 J	1,190 J	604 J	597 J
Barium	200	2900	29.2 J	29.6 J	29.6 J	28.8 J	30.1 J	28.4 J	28.5 J	28.3 J	28 J	26.9 J	26.5 J
Iron	--	11000	526	506	1,270	1,210	971	838	715	816	844	776	755
Lead	8.52	15	3 UL	3 UL	3 UL	3 UL	3 UL	3 UL	3 UL	3 UL	3 UL	4.2 L	3 UL
Manganese	100	320	62.3	52.4	**139**	**136**	**108**	93.5	81.5	66.5	55.8	50.8	47.7
Vanadium	50	78	3.7 J	3.3 J	4.4 J	4.6 J	3.7 J	3.6 J	4 J	4 J	4.3 J	3.5 J	3.2 J
Zinc	86	4700	3.5 B	5 B	7.2 B	6.1 B	6.5 B	7.1 B	33.5	7.5 B	6.8 B	6.3 B	6.7 B
Dissolved Metals (µg/l)													
Arsenic, Dissolved	36	0.45	**4 J**	**4.4 J**	**2.7 J**	**2.4 J**	10 U	**3.2 J**	**3.7 J**	**2.8 J**	10 U	**3.6 J**	10 U
Barium, Dissolved	200	2900	27.4 J	26.2 J	25.6 J	27.7 J	27.9 J	27.1 J	26.7 J	26.5 J	25.1 J	25.5 J	24.9 J
Cobalt, Dissolved	--	4.7	5 U	5 U	5 U	5 U	5 U	0.96 J	0.67 J	5 U	5 U	5 U	0.64 J
Iron, Dissolved	--	11000	62.7 J	61.4 J	69.7 J	61.1 J	66.6 J	72.7 J	94.7 J	73.1 J	47.3 J	240	215
Manganese, Dissolved	100	320	41.2	30.3	91.1	95.4	89.1	71.5	62.4	38.9	15.3	22.1	9.5 J
Selenium, Dissolved	71	78	5 U	5 U	5 U	5 U	3.1 K	5 U	5 U	5 U	5 U	5 U	5 U
Vanadium, Dissolved	50	78	2 J	2 J	2.9 J	2.6 J	2.7 J	2.7 J	3.1 J	2.2 B	2.4 B	2.4 B	2.7 J
Zinc, Dissolved	81	4700	20 UL	20 UL	4.8 J	3.4 J	11.9 J	27.6	25	25.3	9.1 J	24.9	14.4 J
Wet Chemistry													
Total dissolved solids (TDS) (mg/l)	--	--	25,000	25,000	22,800	NA	25,900	24,600	25,000	24,700	25,200	25,900	24,900

Notes:

Concentrations shaded blue exceed ERA Marine SW SVs

Concentrations shaded green exceed RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

L - Analyte present, value may be biased low, actual value may be higher

R - Unreliable Result

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

UL - Analyte not detected, quantitation limit is probably higher

µg/l - Micrograms per liter

TABLE 5-9
Sediment Detection and Exceedance Results - Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	ERA Marine SD Screening Value	RSLs Res Soil X 10 for SD Adjusted (May 2012)	YS01-SD030	YS01-SD031		YS01-SD032	YS01-SD033
Sample ID			YS01-SD30-0709	YS01-SD31-0709	YS01-SD31P-0709	YS01-SD32-0709	YS01-SD33-0709
Sample Date			07/23/09	07/23/09	07/23/09	07/21/09	07/21/09
Chemical Name							
Volatile Organic Compounds (µg/kg)							
2-Butanone	--	28,000,000	6.6 J	13 B	17 B	84 UL	15 B
Carbon disulfide	--	740,000	4.4 J	13	13	10 L	4.9 L
Total Metals (mg/kg)							
Aluminum	18,000	77,000	395	716 J	478 J	**25,600**	**22,600**
Arsenic	8.2	3.9	1.2 UL	1.3 UL	1.3 UL	7.3 L	**11.6 L**
Barium	48	15,000	2.1 J	5.3 J	4.4 J	47.6 J	42.7 J
Beryllium	--	160	0.13 B	0.17 B	0.15 B	1.5 J	1.3
Chromium	81	2.9	0.88 L	1.6 L	1.2 L	**51.6 L**	**45.8 L**
Cobalt	10	23	0.11 J	0.57 J	0.44 J	8.9	8
Copper	34	3,100	0.47 L	1.8	0.64 L	28.9	26.8
Iron	220,000	55,000	471	1,760	1,300	40,000	40,000
Lead	47	4,000	1.6 J	2.1 J	1.9 J	29.6 J	27.2 J
Manganese	260	1,800	1.6 L	15.5 L	13.1 L	**316 L**	250 L
Mercury	0.15	23	0.037 U	0.043 U	0.04 U	0.064 J	0.069 J
Nickel	21	1,500	0.23 J	0.88 J	0.54 J	**23**	**21.1**
Vanadium	57	390	0.79 L	1.9 L	1.2 L	**61.1 L**	**62.3 L**
Zinc	150	23,000	2.5 L	5.1 L	3.6 L	125 L	114 L
Acid Volatile Sulfide/Simultaneously Extractable Metals (µmol/g)							
Zinc, SEM	--	--	0.043 K	0.038 K	0.065 K	0.853 K	0.518 K
Acid volatile sulfide	--	--	0.1 UJ	0.11 UJ	2.4 J	2.5 J	1.9 J
Cadmium, SEM	--	--	0.00086	0.00053 U	0.00063 U	0.0022	0.0014
Copper, SEM	--	--	0.0108	0.0078	0.0044 U	0.0208	0.0566
Lead, SEM	--	--	0.005 J	0.0034 J	0.0048 J	0.0217 J	0.0403 J
Nickel, SEM	--	--	0.0079 U	0.0082 U	0.0096 U	0.038	0.031
Wet Chemistry							
Alkalinity (mg/kg)	--	--	200 U	200 U	NA	173 J	200 U
pH (ph)	--	--	6.3	7.4	NA	7.3	6.8
Total organic carbon (TOC) (mg/kg)	--	--	3,556	8,950	NA	22,910	19,210
Grain Size (pct/p)							
Sieve No. 004 (4.75 mm)	--	--	99	99.8	NA	98.1	94.9
Sieve No. 010 (2.00 mm)	--	--	95.2	97.7	NA	67.1	63.5
Sieve No. 020 (850 um)	--	--	63.6	72	NA	39.5	37.6
Sieve No. 040 (425 um)	--	--	33.1	39.3	NA	25.6	23.2
Sieve No. 060 (250 um)	--	--	14.3	18.6	NA	17.4	15.8
Sieve No. 080 (180 um)	--	--	7	8.5	NA	13.4	12.3
Sieve No. 100 (150 um)	--	--	4.4	5	NA	11.6	11.3
Sieve No. 230 (63-UM)	--	--	1.7	2.1	NA	3.1	5.1
Sieve No. 200 (75 um)	--	--	2.1	2.3	NA	5.6	6.4

Station ID	ERA Marine SD Screening Value	RSLs Res Soil X 10 for SD Adjusted (May 2012)	YS03-SD003	YS03-SD004	YS03-SD005		YS03-SD006	YS03-SD007	YS03-SD008	YS03-SD009	YS03-SD010	YS03-SD011	YS03-SD012
Sample ID			YS03-SD03-0709	YS03-SD04-0709	YS03-SD05-0709	YS03-SD05P-0709	YS03-SD06-0709	YS03-SD07-0709	YS03-SD08-0709	YS03-SD09-0709	YS03-SD10-0709	YS03-SD11-0709	YS03-SD12-0709
Sample Date			07/24/09	07/24/09	07/23/09	07/23/09	07/22/09	07/22/09	07/22/09	07/22/09	07/22/09	07/21/09	07/21/09
Chemical Name													
Volatile Organic Compounds (µg/kg)													
Carbon disulfide	--	740,000	11 J	3 J	5.7 J	7 J	6.8 J	9.8 J	38	16 J	13 J	11 L	16 L
Styrene	7,069	870,000	34 U	9.4 U	12 U	12 U	21 U	20 U	35 U	24 U	20 U	20 UL	4.6 L
Total Metals (mg/kg)													
Aluminum	18,000	77,000	5,520	2,350	5,480 J	4,860 J	**20,900**	**22,400**	**27,800**	**24,400**	**20,600**	**20,800**	**18,800**
Arsenic	8.2	3.9	1.7 L	1.6 L	2.4 L	2 L	**7.7 L**	**9.7 L**	**9.4 L**	**10.6 L**	**8.9 L**	**10.3 L**	**7.4 L**
Barium	48	15,000	16.7 J	12.3 J	11.1 J	9.9 J	39.4 J	41.5 J	**51.4 J**	45 J	38.1 J	40.3 J	37 J
Beryllium	--	160	1 B	0.34 B	0.46 B	0.42 B	1.3 J	1.3 J	1.6 B	1.4 B	1.2 J	1.3 J	1.2 J
Chromium	81	2.9	**10.1 L**	**5.1 L**	**11.4 L**	**10.5 L**	**42.4 L**	**44.8 L**	**55.1 L**	**50.9 L**	**41.6 L**	**42.8 L**	**38.9 L**
Cobalt	10	23	2.2	1.1	2.2	2	7.7	7.8	10	8.3	7.4	7.6	6.9
Copper	34	3,100	12.3	3.5	6.4	5.4	23.5	28	29.7	27.4	22.9	25.5	20.9
Iron	220,000	55,000	8,280	3,380	9,900	8,460	35,000	39,500	40,900	42,300	35,400	38,400	31,900
Lead	46.7	4,000	23.2 J	6.5 J	8.8 J	7.3 J	24.8 J	25.1 J	35.5 J	28.7 J	23.3 J	26.1 J	23.1 J
Manganese	260	1,800	73.2 L	9.7 L	61.8 L	53.2 L	238 L	**274 L**	**308 L**	**349 L**	254 L	238 L	201 L
Mercury	0.15	23	0.12 J	0.03 J	0.056 U	0.03 J	0.054 J	0.083 J	0.067 J	0.08 J	0.083 U	0.081	0.062 J
Nickel	21	1,500	7.6 J	2.5 J	5.4 J	4.7 J	19.2	20	**26.6**	**24**	**21.5**	19.4	17.4
Vanadium	57	390	20.9 L	8.4 L	16.6 L	14.1 L	52.2 L	51.1 L	**73.8 L**	**61.6 L**	50.6 L	54.4 L	48.6 L
Zinc	150	23,000	36 L	29.7 L	27 L	23.3 L	105 L	110 L	114 L	113 L	98.8 L	108 L	103 L
Acid Volatile Sulfide/Simultaneously Extractable Metals (µmol/g)													
Zinc, SEM	--	--	0.36 K	0.207 K	0.253 K	0.247 K	0.738 K	0.757 K	0.83 K	0.548 K	0.8 K	0.66 K	0.556 K
Acid volatile sulfide	--	--	0.38 UJ	0.13 UJ	0.17 UJ	0.15 UJ	0.47 J	0.26 J	0.35 UJ	1.6 J	0.89 J	1.7 J	1.59 J
Cadmium, SEM	--	--	0.0019 U	0.00118	8.40E-04 U	7.40E-04 U	0.0025	0.0023	0.0022	0.0014 U	0.0021	0.0017	0.0014
Copper, SEM	--	--	0.058	0.0291	0.0218	0.0169	0.0332	0.0119	0.012 U	0.0099 U	0.0359	0.0584	0.0475
Lead, SEM	--	--	0.07 J	0.0192 J	0.0173 J	0.0169 J	0.0324 J	0.0188 J	0.0304 J	0.013 J	0.0305 J	0.0438 J	0.0394 J
Nickel, SEM	--	--	0.041	0.0201	0.018	0.017	0.039	0.042	0.052	0.03	0.048	0.035	0.032
Wet Chemistry													
Alkalinity (mg/kg)	--	--	200 U	200 U	200 U	NA	187 J	200 U	200 U	286	200 U	200 U	200 U
pH (ph)	--	--	6.6	4.9	6.3	NA	7.5	7.4	6.8	7.2	6.8	7.6	7.5
Total organic carbon (TOC) (mg/kg)	--	--	159,100	21,400	22,560	NA	36,820	71,570	59,350	27,340	21,030	22,430	20,110
Grain Size (pct/p)													
Sieve No. 004 (4.75 mm)	--	--	87.3	99.4	98.1	NA	91.4	97.8	93	93.9	97.1	98.2	98.7
Sieve No. 010 (2.00 mm)	--	--	62	93.2	90.8	NA	56.5	62.5	60.7	59.8	65.4	69.1	69.6
Sieve No. 020 (850 um)	--	--	38.6	73	68.1	NA	33.7	38.2	34.4	35	38.1	40.3	45.3
Sieve No. 040 (425 um)	--	--	25.3	46.7	43.2	NA	21.8	24.7	21.9	21.5	24.1	25.5	31
Sieve No. 060 (250 um)	--	--	16.4	25.3	21.1	NA	15.4	23.7	14.7	16.6	16.7	16.9	22.4
Sieve No. 080 (180 um)	--	--	11.9	13.3	10.9	NA	11.9	13.9	11.4	11.1	13	13.2	17.3
Sieve No. 100 (150 um)	--	--	10.1	9.7	7.9	NA	10.5	12.5	10.3	10.4	11.5	11.7	15.8
Sieve No. 230 (63-UM)	--	--	5.1	3.3	3.3	NA	3.9	4.9	3.1	4.1	3.5	2.7	4.8
Sieve No. 200 (75 um)	--	--	5.7	3.7	3.5	NA	5.3	7.1	5.6	5.5	5.1	4.5	6.6

Notes:

Concentrations shaded blue exceed ERA Marine SD SVs

Concentrations shaded green exceed RSLs

Concentrations shaded red exceed both ERA Marine SD SVs and RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

B - Analyte not detected above the level reported in blanks

J - Analyte present, value may or may not be accurate or precise

K - Analyte present, value may be biased high, actual value may be lower

ph - pH units

L - Analyte present, value may be biased low, actual value may be higher

UL - Analyte not detected, quantitation limit is probably higher

U - The material was analyzed for, but not detected

UJ - Analyte not detected, quantitation limit may be inaccurate

R - Unreliable Result

mg/kg - Milligrams per kilogram

pct/p - Percent Passed

µg/kg - Micrograms per kilogram

µmol/g - Micromoles per gram

TABLE 5-10
Sediment Porewater Detection Results - Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	**Adjusted RSLs Tap X 10 for SW Adjusted Nov 2011**	YS01-WN02		YS01-WN03
Sample ID		YS01-WN02-0909	YS01-WN02P-0909	YS01-WN03-0909
Sample Date		09/01/09	09/01/09	09/01/09
Chemical Name				
Volatile Organic Compounds (µg/l)				
Carbon disulfide	720	0.3 J	0.26 J	0.27 J
Cyclohexane	860	0.69 J	1.2 J	1.4

Station ID	**Adjusted RSLs Tap X 10 for SW Adjusted Nov 2011**	YS03-WN01	YS03-WN02	YS03-WN03	YS03-WN04
Sample ID		YS03-WN01-0909	YS03-WN02-0909	YS03-WN03-0909	YS03-WN04-0909
Sample Date		09/01/09	09/02/09	09/02/09	09/01/09
Chemical Name					
Volatile Organic Compounds (µg/l)					
Carbon disulfide	720	0.5 U	2.5 U	3.8	2.3
Cyclohexane	860	0.5 U	0.76 J	2 J	1.3
Toluene	13000	0.5 U	0.86 J	0.96 J	0.15 J

Notes:

Bold box indicates exceedance of RSL Tap x 10 for SW Adjusted

J - Analyte present, value may or may not be accurate or precise

U - The material was analyzed for, but not detected

µg/l - Micrograms per liter

TABLE 5-11
Surface Water and Sediment Parameters - Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	YS01-SW/SD33	YS01-SW/SD32	YS01-SW/SD31	YS03-SW/SD05	YS03-SW/SD06	YS03-SW/SD07
Sample ID	YS01-SW/SD33-0709	YS01-SW/SD32-0709	YS01-SW/SD31-0709	YS03-SW/SD05-0709	YS03-SW/SD06-0709	YS03-SW/SD07-0709
Sample Date	7/21/09	7/21/09	7/23/09	7/23/09	7/22/09	7/22/09
Field Parameter						
Dissolved Oxygen (mg/L)	6.36	8.53	5.41	5.91	7.46	7.67
Oxidation Reduction Potential (mV)	-163	51	111	168	18	17
pH	7.31	7.49	6.54	5.6	6.79	6.27
Salinity (pct)	2	2.1	1.3	1.6	1.8	1.7
Specific Conductivity (mS/cm)	32.1	33.4	22.4	25.8	28.4	28.2
Temperature (°C)	25	26.3	26.5	26.9	28.5	28
Turbidity (NTU)	0	56.7	145	24.7	0	0

Station ID	YS03-SW/SD08	YS03-SW/SD09*	YS03-SW/SD10	YS03-SW/SD11	YS03-SW/SD12
Sample ID	YS03-SW/SD08-0709	YS03-SW/SD09-0709	YS03-SW/SD10-0709	YS03-SW/SD11-0709	YS03-SW/SD12-0709
Sample Date	7/22/09	7/22/09	7/22/09	7/21/09	7/21/09
Field Parameter					
Dissolved Oxygen (mg/L)	7.48	N/A	7.23	4.82	6.73
Oxidation Reduction Potential (mV)	17	N/A	17	-166	-72
pH	6.08	N/A	6.14	7.16	5.95
Salinity (pct)	1.7	N/A	1.7	2	2
Specific Conductivity (mS/cm)	28.1	N/A	27.7	31.9	32
Temperature (°C)	27.3	N/A	26.7	25.4	25.2
Turbidity (NTU)	0	N/A	0	0	≥999

Notes:

C - Degrees centigrade
mg/L - Milligrams per liter
mS/cm - Milliseimens per centimeter
mV - Millivolts

NTU - Nephelometric turbidity unit
pct - Percent
NA - Not analyzed
* - Parameters were not collected

TABLE 5-12
Soil Detection Results - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	**Adjusted Industrial Soil RSLs (May 2012)**	**Adjusted Residential Soil RSLs (May 2012)**	YS01-SO01
Sample ID			YS01-SO01-0109
Sample Depth			15-19 ft bgs
Sample Date			01/29/09
Chemical Name			
Volatile Organic Compounds (µg/kg)			
Methylene chloride	310,000	36,000	1.2 B

Notes:

Bold text indicates exceedance of Adjusted Industrial Soil RSLs

Underline indicates exceedance of Adjusted Residential Soil RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

B - Analyte not detected above the level reported in blanks

µg/kg - Micrograms per kilogram

RSLs - regional screening levels

The soil analytical results have not been validated.

ft - feet

bgs - below ground surface

TABLE 5-13
Soil Detection and Exceedance Results - Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Station ID	**Yorktown Subsurface Soil Background Criteria (November 2010)**	**Adjusted Industrial Soil RSLs (May 2012)**	**Adjusted Residential Soil RSLs (May 2012)**	YS03-SO01	
Sample ID				YS03-SO01-0209	YS03-SO01-0609
Sample Depth				12 - 16 ft bgs	15 - 19 ft bgs
Sample Date				02/02/09	06/24/09
Chemical Name					
Volatile Organic Compounds (µg/kg)					
Acetone	--	63,000,000	6,100,000	28 L	NA
cis-1,2-Dichloroethene	--	200,000	16,000	11	NA
Isopropylbenzene	--	270,000	210,000	4.5 J	NA
Methylcyclohexane	--	--	--	8.8	NA
Trichloroethene	--	2,000	440	14	NA
Semivolatile Organic Compounds (µg/kg)					
1,1-Biphenyl	--	21,000	5,100	NA	400
2-Methylnaphthalene	--	220,000	23,000	NA	11,000
bis(2-Ethylhexyl)phthalate	--	120,000	35,000	NA	480
Dibenzofuran	--	100,000	7,800	NA	310
Fluorene	--	2,200,000	230,000	NA	740
Naphthalene	--	18,000	3,600	NA	1,800
Phenanthrene	--	17,000,000	1,700,000	NA	2,100
Pyrene	--	1,700,000	170,000	NA	140 J
Pesticide/Polychlorinated Biphenyls (µg/kg)					
4,4'-DDD	--	7,200	2,000	NA	4.8 JP
alpha-BHC	--	270	77	NA	3.3 P
alpha-Chlordane	--	6,500	1,600	NA	0.53 J
beta-BHC	--	960	270	NA	0.667
delta-BHC	--	960	270	NA	4.4 P
Dieldrin	--	110	30	NA	2.5 JP
gamma-BHC (Lindane)	--	2,100	520	NA	3.6 P
gamma-Chlordane	--	6,500	1,600	NA	1.3 JP
Heptachlor	--	380	110	NA	2.3 JPB
Heptachlor epoxide	--	190	53	NA	1.6 JP
Total Metals (mg/kg)					
Aluminum	13000	99,000	7,700	NA	12,700 E
Antimony	--	41	3.1	NA	0.95 B
Arsenic	5.54	1.6	0.39	NA	**30.5 E**
Barium	84.5	19,000	1,500	NA	57.2 E
Beryllium	0.52	200	16	NA	1.9
Calcium	2380	--	--	NA	3,270 E
Chromium	33.7	5.6	0.29	NA	**35.1 E**
Cobalt	5.18	30	2.3	NA	17.4 E
Copper	3.17	4,100	310	NA	8.6
Iron	32000	72,000	5,500	NA	30,600 E
Lead	8.79	800	400	NA	12.4
Magnesium	1120	--	--	NA	2,640 E
Manganese	176	2,300	180	NA	125 E
Mercury	0.14	31	2.3	NA	0.045 B
Nickel	17.6	2,000	150	NA	19.6 E
Potassium	901	--	--	NA	2,460
Sodium	811	--	--	NA	221 B
Vanadium	48.3	520	39	NA	26.7 E
Zinc	28	31,000	2,300	NA	63.7 E
Wet Chemistry					
No Detections				NA	NA
Total Petroleum Hydrocarbons (µg/kg)					
TPH-diesel range	--	--	--	NA	350,000
TPH-gas range	--	--	--	NA	220 JB
TPH-oil range	--	--	--	NA	66,000

Notes:

Shading indicates exceedance of NWSY Background values

Bold text indicates exceedance of Adjusted Industrial Soil RSLs

Underline indicates exceedance of Adjusted Residential Soil RSLs

RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

NA - Not analyzed

B - Analyte not detected above the level reported in blanks

E - Concentration exceeds calibration range of GC/MS instrument (Organic) OR Value is estimated due to matrix interferences (Inorganic)

J - Analyte present, value may or may not be accurate or precise

L - Analyte present, value may be biased low, actual value may be higher

U - The material was analyzed for, but not detected

mg/kg - Milligrams per kilogram

µg/kg - Micrograms per kilogram

RSLs = regional screening levels

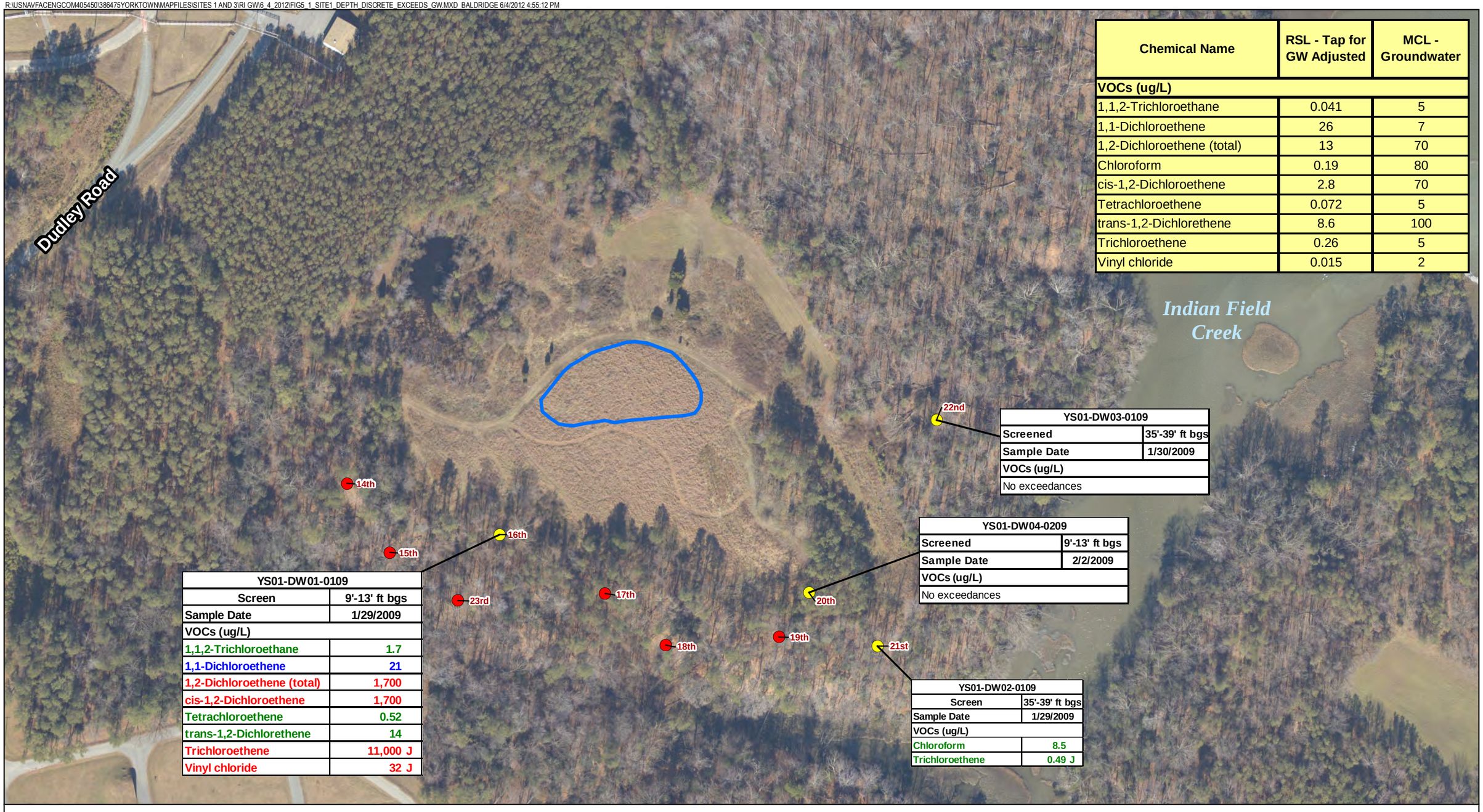
TPH = total petroleum hydrocarbons

The soil analytical results have not been validated.

ft - feet

bgs - below ground surface

R:\USNAVFACENGCOM405450\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\6_4_2012\FIG5_1_SITE1_DEPTH_DISCRETE_EXCEEDS_GW.MXD BALDRIDGE 6/4/2012 4:55:12 PM



Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
VOCs (ug/L)		
1,1,2-Trichloroethane	0.041	5
1,1-Dichloroethene	26	7
1,2-Dichloroethene (total)	13	70
Chloroform	0.19	80
cis-1,2-Dichloroethene	2.8	70
Tetrachloroethene	0.072	5
trans-1,2-Dichlorethene	8.6	100
Trichloroethene	0.26	5
Vinyl chloride	0.015	2

YS01-DW03-0109	
Screened	35'-39' ft bgs
Sample Date	1/30/2009
VOCs (ug/L)	
No exceedances	

YS01-DW04-0209	
Screened	9'-13' ft bgs
Sample Date	2/2/2009
VOCs (ug/L)	
No exceedances	

YS01-DW01-0109	
Screen	9'-13' ft bgs
Sample Date	1/29/2009
VOCs (ug/L)	
1,1,2-Trichloroethane	1.7
1,1-Dichloroethene	21
1,2-Dichloroethene (total)	1,700
cis-1,2-Dichloroethene	1,700
Tetrachloroethene	0.52
trans-1,2-Dichlorethene	14
Trichloroethene	11,000 J
Vinyl chloride	32 J

YS01-DW02-0109	
Screen	35'-39' ft bgs
Sample Date	1/29/2009
VOCs (ug/L)	
Chloroform	8.5
Trichloroethene	0.49 J

Legend
- Membrane Interface Probe (MIP) Sample Location
- Membrane Interface Probe (MIP) and Depth-Discrete Sample Location
- Landfill Area with New Cap

Notes:
Concentrations shaded blue exceed MCLs
Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both MCLs and RSLs
J - Analyte present. Value may or may not be accurate or precise
µg/L - micrograms per Liter
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

N
W E
S

0 75 150
Feet

Figure 5-1
Depth-Discrete Exceedances in Groundwater
Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

V:\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIG5_2_SITE1_VOC_COLUMBIA_GW.MXD BALDRIDG 5/31/2012 8:06:19 PM

Chemical Name	RSL - Tap for GW Adjusted*	MCL - Groundwater
VOCs (ug/L)		
Chloroform	0.19	80
Trichloroethene	2	5

YS01-GW17-0309	
Screen	2-12 ft bgs
Sample Date	3/12/2009
VOCs (ug/L)	
No exceedances	

YS01-GW19-0309	
Screen	3-13 ft bgs
Sample Date	3/11/2009
VOCs (ug/L)	
No exceedances	

YS01-GW13-0309	
Screen	4-14 ft bgs
Sample Date	3/9/2009
VOCs (ug/L)	
No exceedances	

YS01-GW14-0309	
Screen	5-15 ft bgs
Sample Date	3/13/2009
VOCs (ug/L)	
Chloroform	0.35 J

YS01-GW18-0309	
Screen	8-18 ft bgs
Sample Date	3/11/2009
VOCs (ug/L)	
No exceedances	

YS01-GW12-0309	
Screen	4-14 ft bgs
Sample Date	3/13/2009
VOCs (ug/L)	
Trichloroethene	56

YS01-GW05-0309	
Screen	0.5-15.5 ft bgs
Sample Date	3/10/2009
VOCs (ug/L)	
No exceedances	

Dudley Road

Indian Field Creek

22nd

14th

16th

15th

1GW20

23rd

17th

20th

18th

19th

21st

Legend
- Columbia Aquifer Monitoring Well
- Membrane Interface Probe Location
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap

Notes:
Concentrations shaded **green** exceed RSLs
Concentrations shaded **red** exceed both MCLs and RSLs
Where duplicate samples taken, most conservative concentration value given
J - Analyte present. Value may or may not be accurate or precise
ug/L - micrograms per Liter
VOC - Volatile Organic Compound
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

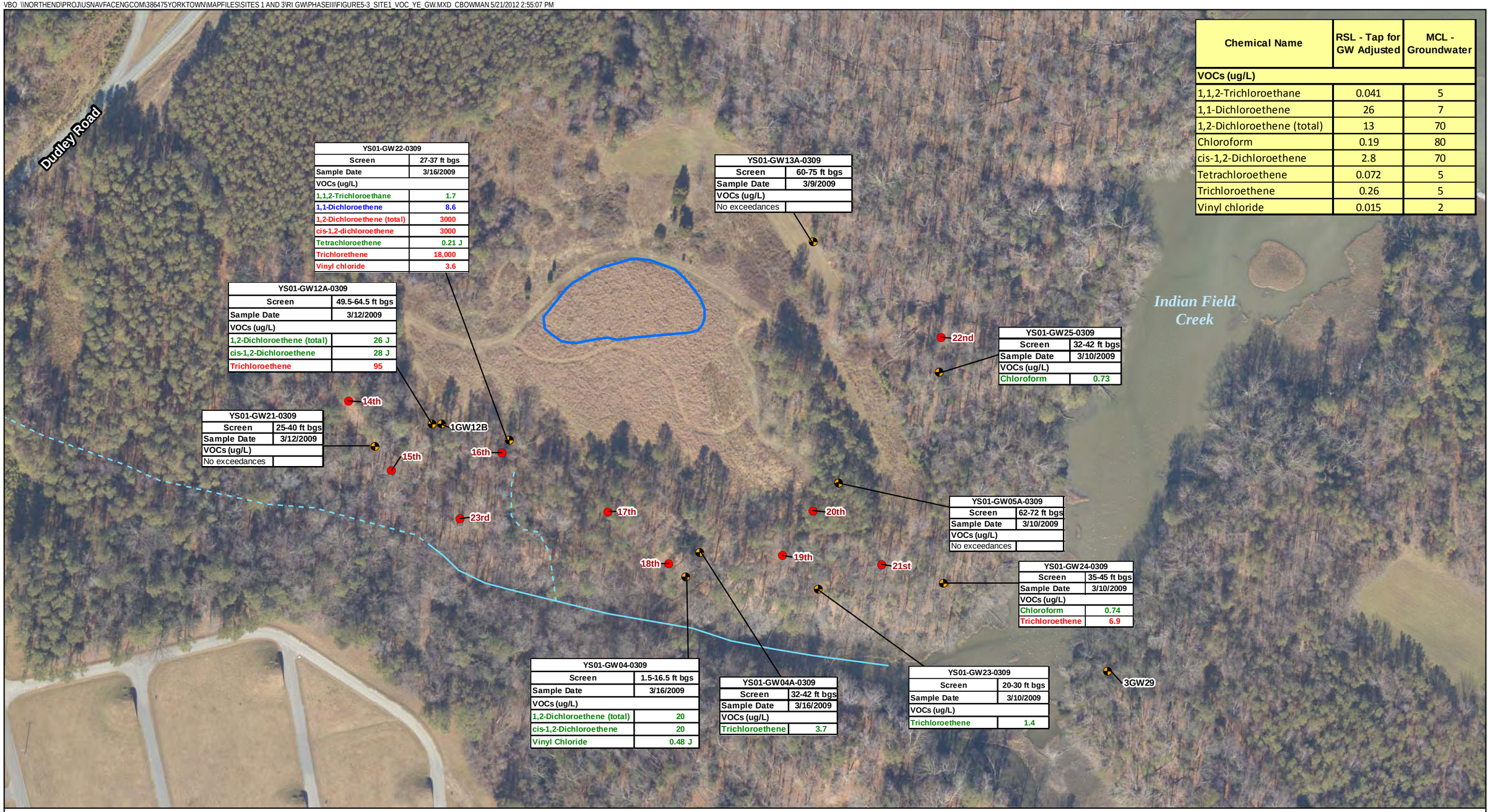
N
W E
S

0 75 150
Feet

Figure 5-2
VOC Exceedances in Columbia Aquifer
Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

VBO \\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEIII\FIGURE5-3_SITE1_VOC_YE_GW.MXD CBOWMAN 5/21/2012 2:55:07 PM



Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
VOCs (ug/L)		
1,1,2-Trichloroethane	0.041	5
1,1-Dichloroethene	26	7
1,2-Dichloroethene (total)	13	70
Chloroform	0.19	80
cis-1,2-Dichloroethene	2.8	70
Tetrachloroethene	0.072	5
Trichloroethene	0.26	5
Vinyl chloride	0.015	2

Legend
- Yorktown-Eastover Aquifer Monitoring Well
- Membrane Interface Probe Location
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap

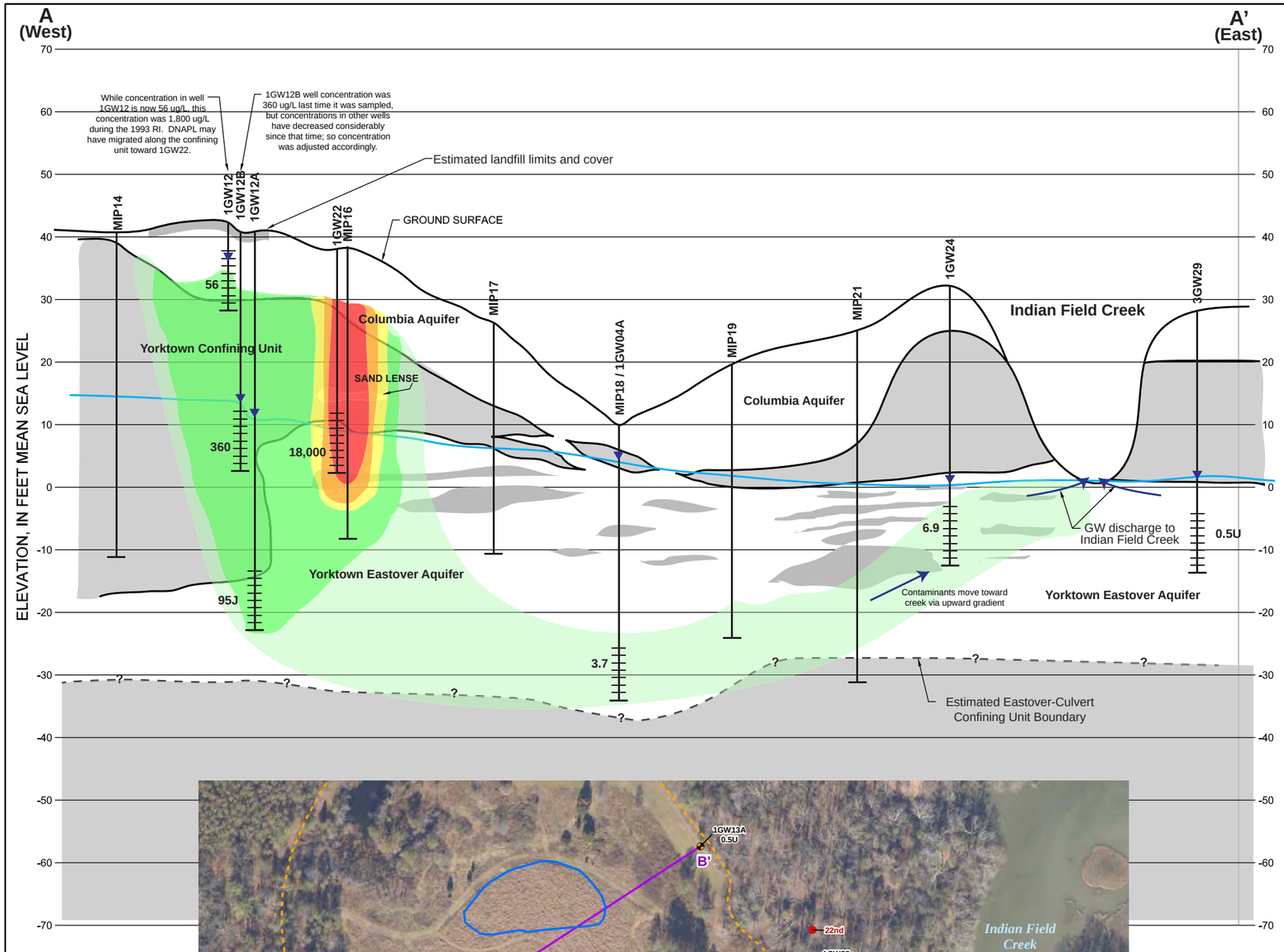
Notes:
Concentrations shaded **blue** exceed MCLs
Concentrations shaded **green** exceed RSLs
Concentrations shaded **red** exceed both MCLs and RSLs
Where duplicate samples taken, most conservative concentration value given
J - Analyte present. Value may or may not be accurate or precise
ug/L - micrograms per Liter
1GW20 and 1GW12B were not sampled.
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

N W E S

0 150 300 Feet

Figure 5-3
VOC Exceedances in Yorktown-Eastover Aquifer
Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL



LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL
- GROUNDWATER FLOW

TCE ISOCONCENTRATION CONTOURS

- 2 ug/L - 20 ug/L
- 20 ug/L - 200 ug/L
- 200 ug/L - 2,000 ug/L
- 2,000 ug/L - 11,000 ug/L
- >11,000 ug/L

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. GROUND SURFACE DEPRESSION IS A RESULT OF WELL 1GW04A BEING CLOSER TO UNNAMED TRIBUTARY THAN OTHER POINTS
3. WHILE NO CONTAMINATION WAS NOTED IN MIP21 AT THIS DEPTH, THE MIP IS UNRELIABLE AT DETECTING CVOCS AT <10 UG/L AND THE DEPTH DISCRETE SAMPLE WAS COLLECTED AT A MORE SHALLOW DEPTH. THEREFORE, THE CONTAMINATION WAS DRAWN AT THIS INTERVAL BECAUSE IT IS THE MOST LOGICAL DEPTH.

***** Low concentrations of TCE and vinyl chloride (0.24J µg/L) were detected in some rounds of sampling at 3GW29. However, the most recent round of sampling was 0.5U µg/L for both constituents. Thus, there is some uncertainty regarding contamination at this well.

LEGEND

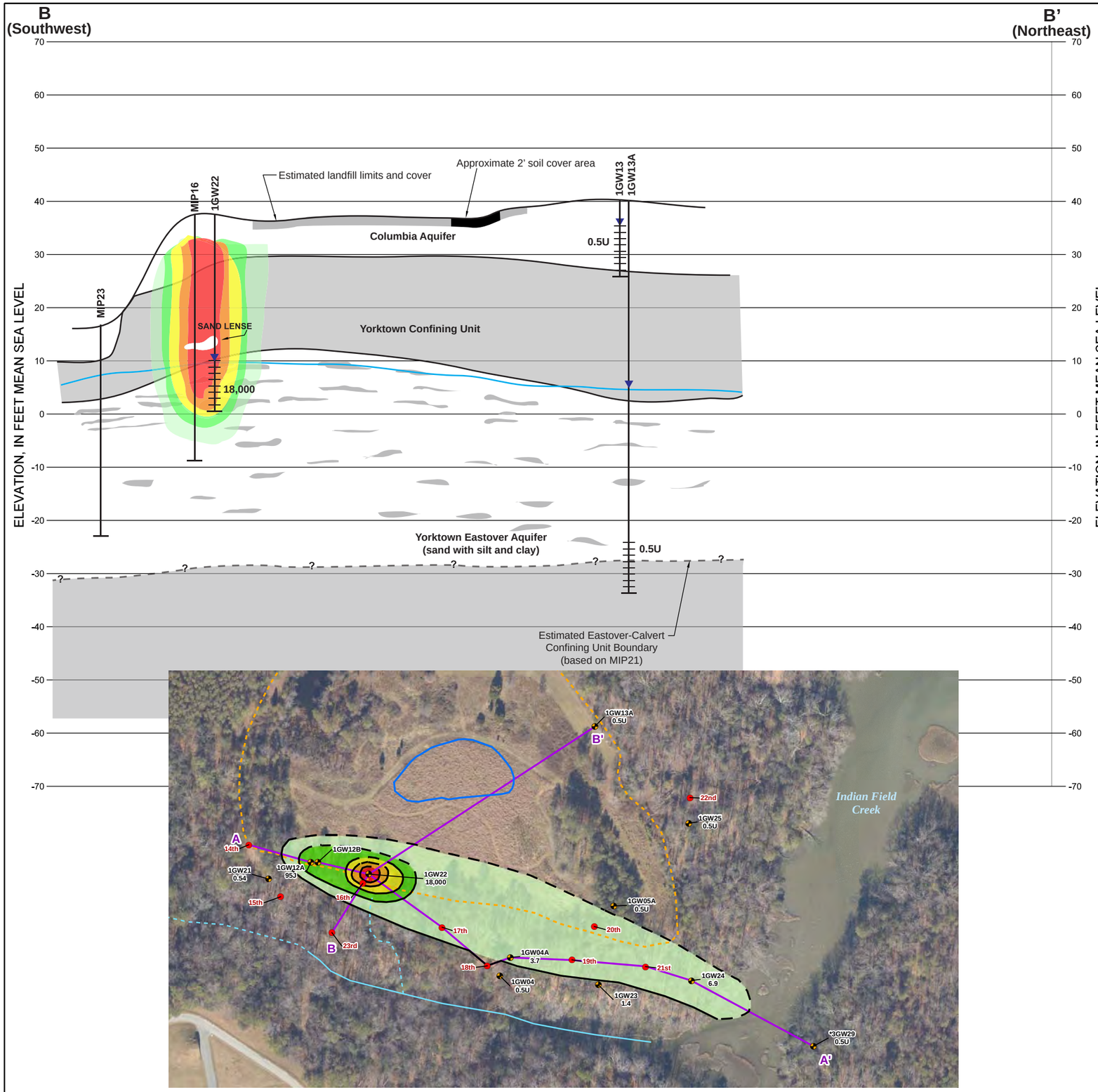
- 0.5U — WELL SCREEN INTERVAL AND TCE CONCENTRATION IN ug/L
- COLUMBIA AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL
- INFERRED

VERTICAL SCALE
10
0
50
APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 5-4
SITE 1 TCE ISOCONCENTRATIONS
CROSS SECTION A-A'
PHASE II REMEDIAL INVESTIGATION REPORT,
SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL



LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL

TCE ISOCONCENTRATION CONTOURS

- 2 ug/L - 20 ug/L
- 20 ug/L - 200 ug/L
- 200 ug/L - 2,000 ug/L
- 2,000 ug/L - 11,000 ug/L
- >11,000 ug/L

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. WHILE NO CONTAMINATION WAS NOTED IN MIP21 AT THIS DEPTH, THE MIP IS UNRELIABLE AT DETECTING CVOCS AT <10 UG/L AND THE DEPTH DISCRETE SAMPLE WAS COLLECTED AT A MORE SHALLOW DEPTH. THEREFORE, THE CONTAMINATION WAS DRAWN AT THIS INTERVAL BECAUSE IT IS THE MOST LOGICAL DEPTH.

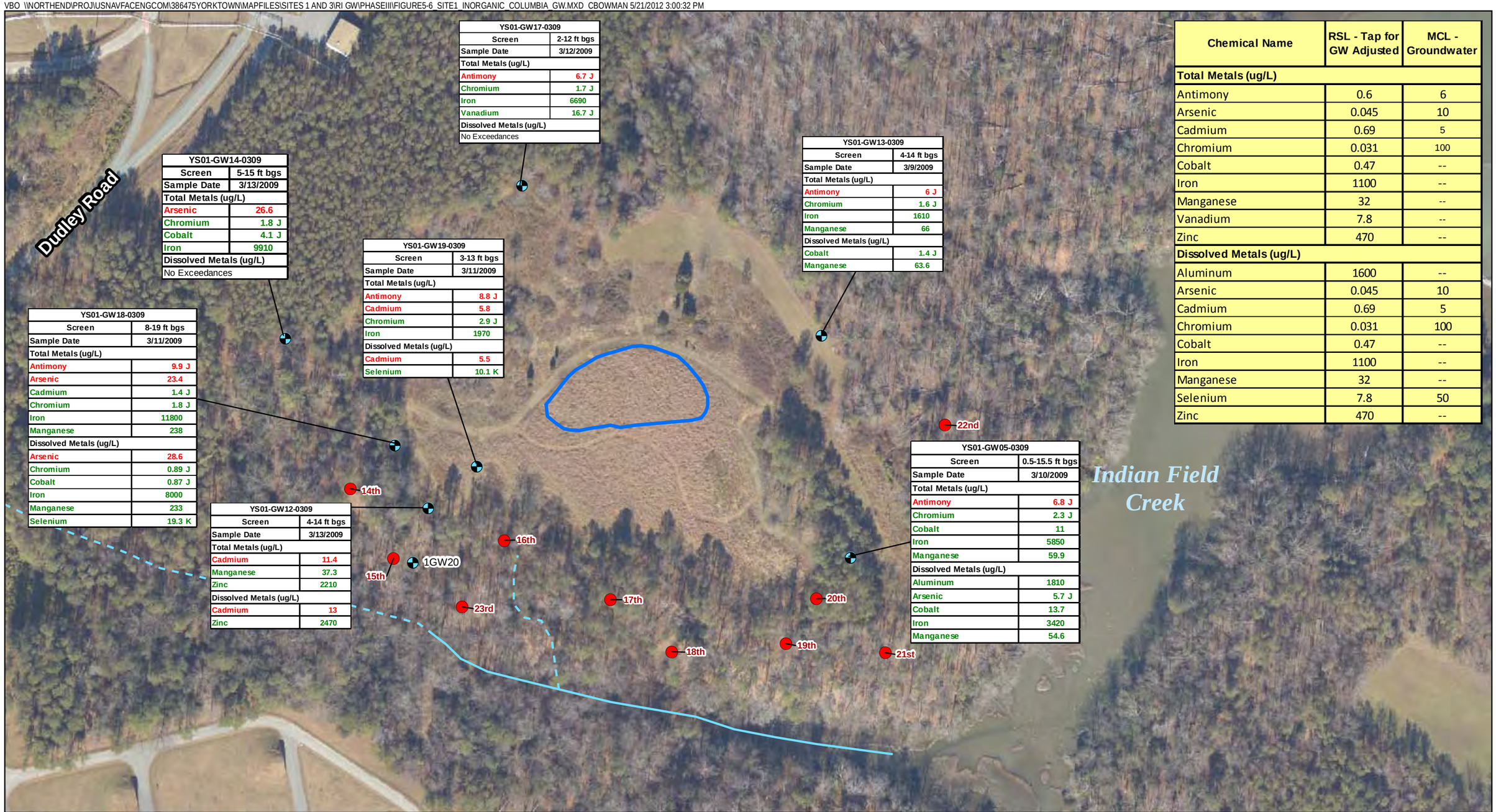
VERTICAL SCALE
10
0
50
APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 5-5
SITE 1 TCE ISOCONCENTRATIONS
CROSS SECTION B-B'
PHASE II REMEDIAL INVESTIGATION REPORT,
SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL

VBO \\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEIII\FIGURE5-6_SITE1_INORGANIC_COLUMBIA_GW.MXD CBOWMAN 5/21/2012 3:00:32 PM



Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
Total Metals (ug/L)		
Antimony	0.6	6
Arsenic	0.045	10
Cadmium	0.69	5
Chromium	0.031	100
Cobalt	0.47	--
Iron	1100	--
Manganese	32	--
Vanadium	7.8	--
Zinc	470	--
Dissolved Metals (ug/L)		
Aluminum	1600	--
Arsenic	0.045	10
Cadmium	0.69	5
Chromium	0.031	100
Cobalt	0.47	--
Iron	1100	--
Manganese	32	--
Selenium	7.8	50
Zinc	470	--

Legend

- Membrane Interface Probe (MIP) Sample Location
- Columbia Monitoring Wells
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap

Notes:

Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both MCLs and RSLs
Where duplicate samples taken, most conservative concentration value given
J - Analyte present. Value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
ND - Not Detected
ug/L - micrograms per Liter
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

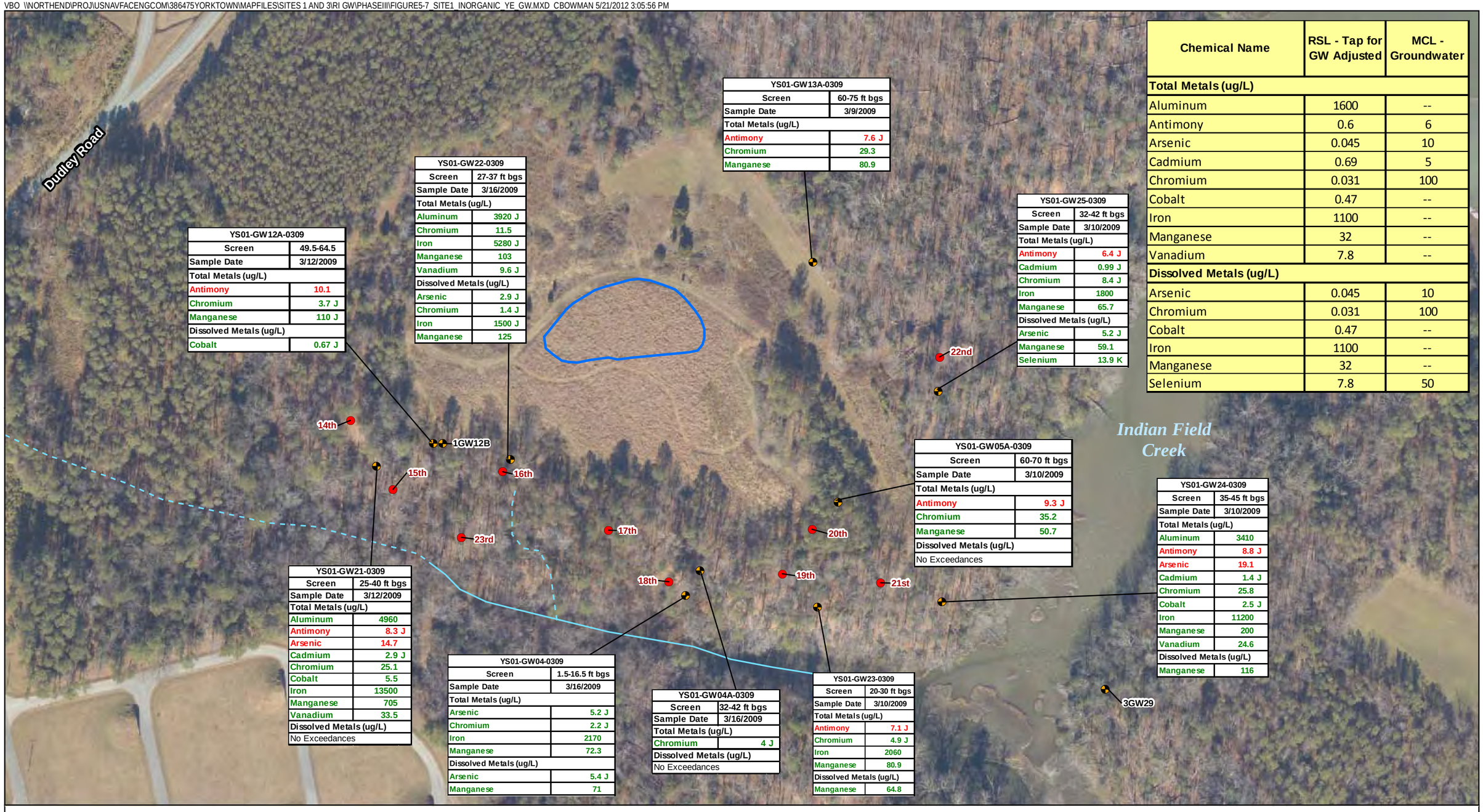
N W E S

0 150 300 Feet

Figure 5-6
Inorganic Exceedances in Columbia Aquifer
Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

VBO \\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEIII\FIGURE5-7_SITE1_INORGANIC_YE_GW.MXD CBOWMAN 5/21/2012 3:05:56 PM



YS01-GW12A-0309	
Screen	49.5-64.5
Sample Date	3/12/2009
Total Metals (ug/L)	
Antimony	10.1
Chromium	3.7 J
Manganese	110 J
Dissolved Metals (ug/L)	
Cobalt	0.67 J

YS01-GW22-0309	
Screen	27-37 ft bgs
Sample Date	3/16/2009
Total Metals (ug/L)	
Aluminum	3920 J
Chromium	11.5
Iron	5280 J
Manganese	103
Vanadium	9.6 J
Dissolved Metals (ug/L)	
Arsenic	2.9 J
Chromium	1.4 J
Iron	1500 J
Manganese	125

YS01-GW13A-0309	
Screen	60-75 ft bgs
Sample Date	3/9/2009
Total Metals (ug/L)	
Antimony	7.6 J
Chromium	29.3
Manganese	80.9

YS01-GW25-0309	
Screen	32-42 ft bgs
Sample Date	3/10/2009
Total Metals (ug/L)	
Antimony	6.4 J
Cadmium	0.99 J
Chromium	8.4 J
Iron	1800
Manganese	65.7
Dissolved Metals (ug/L)	
Arsenic	5.2 J
Manganese	59.1
Selenium	13.9 K

YS01-GW05A-0309	
Screen	60-70 ft bgs
Sample Date	3/10/2009
Total Metals (ug/L)	
Antimony	9.3 J
Chromium	35.2
Manganese	50.7
Dissolved Metals (ug/L)	
No Exceedances	

YS01-GW24-0309	
Screen	35-45 ft bgs
Sample Date	3/10/2009
Total Metals (ug/L)	
Aluminum	3410
Antimony	8.8 J
Arsenic	19.1
Cadmium	1.4 J
Chromium	25.8
Cobalt	2.5 J
Iron	11200
Manganese	200
Vanadium	24.6
Dissolved Metals (ug/L)	
Manganese	116

YS01-GW21-0309	
Screen	25-40 ft bgs
Sample Date	3/12/2009
Total Metals (ug/L)	
Aluminum	4960
Antimony	8.3 J
Arsenic	14.7
Cadmium	2.9 J
Chromium	25.1
Cobalt	5.5
Iron	13500
Manganese	705
Vanadium	33.5
Dissolved Metals (ug/L)	
No Exceedances	

YS01-GW04-0309	
Screen	1.5-16.5 ft bgs
Sample Date	3/16/2009
Total Metals (ug/L)	
Arsenic	5.2 J
Chromium	2.2 J
Iron	2170
Manganese	72.3
Dissolved Metals (ug/L)	
Arsenic	5.4 J
Manganese	71

YS01-GW04A-0309	
Screen	32-42 ft bgs
Sample Date	3/16/2009
Total Metals (ug/L)	
Chromium	4 J
Dissolved Metals (ug/L)	
No Exceedances	

YS01-GW23-0309	
Screen	20-30 ft bgs
Sample Date	3/10/2009
Total Metals (ug/L)	
Antimony	7.1 J
Chromium	4.9 J
Iron	2060
Manganese	80.9
Dissolved Metals (ug/L)	
Manganese	64.8

Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
Total Metals (ug/L)		
Aluminum	1600	--
Antimony	0.6	6
Arsenic	0.045	10
Cadmium	0.69	5
Chromium	0.031	100
Cobalt	0.47	--
Iron	1100	--
Manganese	32	--
Vanadium	7.8	--
Dissolved Metals (ug/L)		
Arsenic	0.045	10
Chromium	0.031	100
Cobalt	0.47	--
Iron	1100	--
Manganese	32	--
Selenium	7.8	50

Legend

- Membrane Interface Probe (MIP) Sample Location
- Yorktown Monitoring Wells
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap

Notes:

Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both MCLs and RSLs
Where duplicate samples taken, most conservative concentration value given
J - Analyte present. Value may or may not be accurate or precise
K - Analyte present, value may be biased high, actual value may be lower
L - Analyte present, value may be biased low, actual value may be higher
ND - Not Detected
ug/L - micrograms per Liter
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

N
W E
S

0 150 300
Feet

Figure 5-7
Inorganic Exceedances in Yorktown-Eastover Aquifer
Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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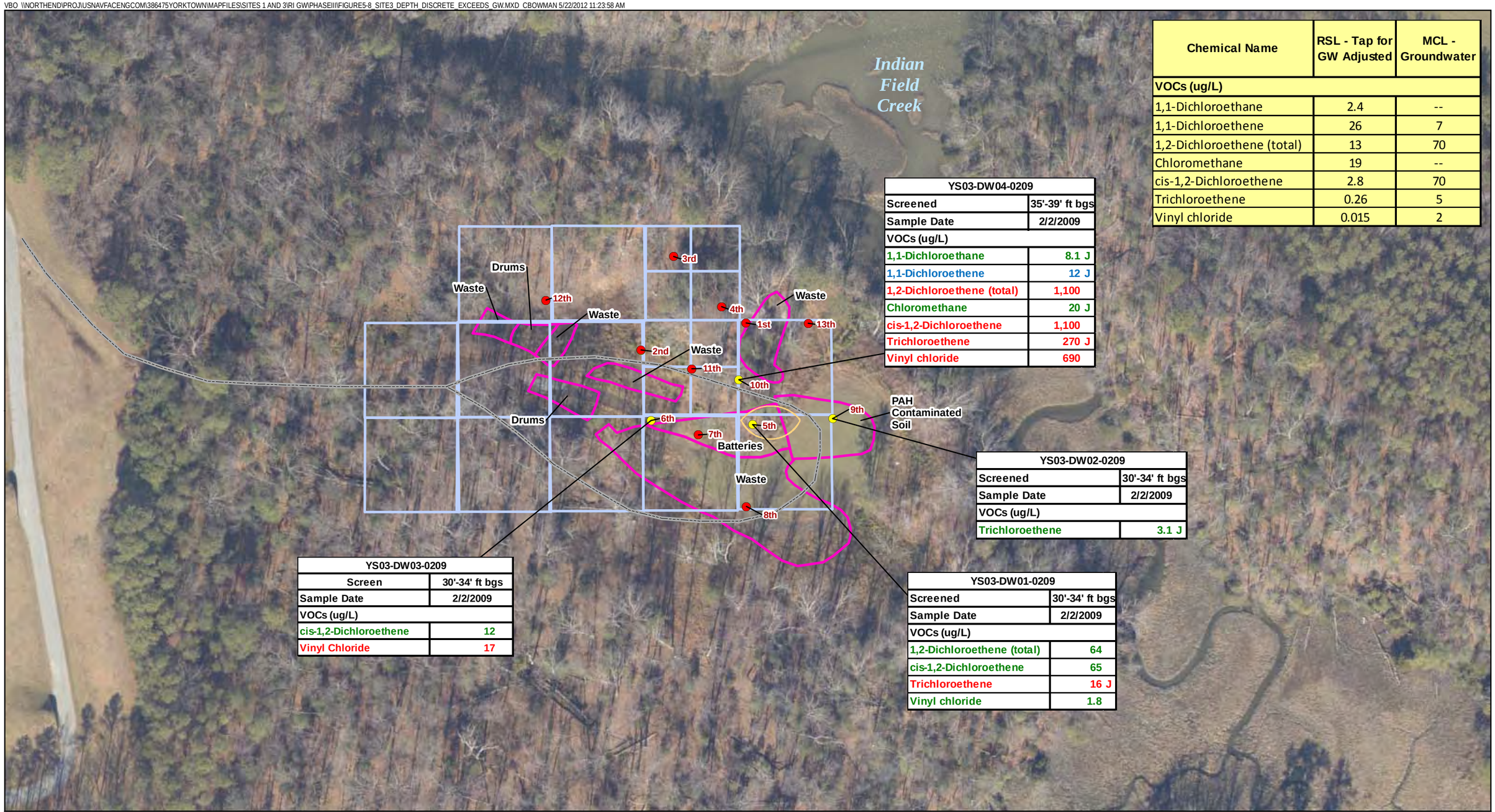
VBO \\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEII\FIGURE5-8_SITE3_DEPTH_DISCRETE_EXCEEDS_GW.MXD CBOWMAN 5/22/2012 11:23:58 AM



Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
VOCs (ug/L)		
1,1-Dichloroethane	2.4	--
1,1-Dichloroethene	26	7
1,2-Dichloroethene (total)	13	70
Chloromethane	19	--
cis-1,2-Dichloroethene	2.8	70
Trichloroethene	0.26	5
Vinyl chloride	0.015	2

YS03-DW04-0209	
Screened	35'-39' ft bgs
Sample Date	2/2/2009
VOCs (ug/L)	
1,1-Dichloroethane	8.1 J
1,1-Dichloroethene	12 J
1,2-Dichloroethene (total)	1,100
Chloromethane	20 J
cis-1,2-Dichloroethene	1,100
Trichloroethene	270 J
Vinyl chloride	690

YS03-DW02-0209	
Screened	30'-34' ft bgs
Sample Date	2/2/2009
VOCs (ug/L)	
Trichloroethene	3.1 J

YS03-DW03-0209	
Screen	30'-34' ft bgs
Sample Date	2/2/2009
VOCs (ug/L)	
cis-1,2-Dichloroethene	12
Vinyl Chloride	17

YS03-DW01-0209	
Screened	30'-34' ft bgs
Sample Date	2/2/2009
VOCs (ug/L)	
1,2-Dichloroethene (total)	64
cis-1,2-Dichloroethene	65
Trichloroethene	16 J
Vinyl chloride	1.8

Legend
- Membrane Interface Probe (MIP) Sample Location
- Membrane Interface Probe (MIP) and Depth-Discrete Sample Location
- MIP Survey Grid
- Landfill Access Road
- Approximate Waste Limits
- Area of Excavation of PAH Contaminated Soil

Notes:
Concentrations shaded blue exceed MCLs
Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both MCLs and RSLs
J - Analyte present. Value may or may not be accurate or precise
ug/L - micrograms per Liter
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

N W E S

0 100 200 Feet

Figure 5-8
Depth-Discrete Exceedances in Groundwater
Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
VOCs (ug/L)		
1,1-Dichloroethane	2.4	--
1,1-Dichloroethene	26	7
1,2-Dichloroethene (total)	13	70
1,4-Dichlorobenzene	0.42	75
cis-1,2-Dichloroethene	2.8	70
Trichloroethene	0.26	5
Vinyl chloride	0.015	2

YS03-GW25-0309	
Screen	26-36 ft bgs
Sample Date	3/20/2009
VOCs (ug/L)	
1,2-Dichloroethene (Total)	51
1,4-Dichlorobenzene	0.56 J
cis-1,2-Dichloroethene	52
Trichloroethene	9.6
Vinyl Chloride	4.9

YS03-GW20-0309	
Screen	40-50 ft bgs
Sample Date	3/20/2009
VOCs (ug/L)	
No exceedances	

YS03-GW20A-0309	
Screen	70-80 ft bgs
Sample Date	3/20/2009
VOCs (ug/L)	
No exceedances	

YS03-GW29-0309	
Screen	30-40 ft bgs
Sample Date	3/30/2009
VOCs (ug/L)	
Vinyl Chloride	0.24 J

YS03-GW19A-0409	
Screen	66-91 ft bgs
Sample Date	4/6/2009
VOCs (ug/L)	
cis-1,2-Dichloroethene	6.5
Trichloroethene	3.1
Vinyl chloride	0.26 J

YS03-GW28-0309	
Screen	6-16 ft bgs
Sample Date	3/19/2009
VOCs (ug/L)	
1,2-Dichloroethene (Total)	120 L
cis-1,2-Dichloroethene	120 L
Trichloroethene	36 L
Vinyl Chloride	5.2 L

YS03-GW27-0309	
Screen	25-35 ft bgs
Sample Date	3/20/2009
VOCs (ug/L)	
1,2-Dichloroethene (Total)	880
cis-1,2-Dichloroethene	890
Trichloroethene	130
Vinyl Chloride	1,100

YS03-GW15A-0309	
Screen	55-70 ft bgs
Sample Date	3/17/2009
VOCs (ug/L)	
No exceedances	

YS03-GW19-0309	
Screen	30-45 ft bgs
Sample Date	3/19/2009
VOCs (ug/L)	
1,2-Dichloroethene (Total)	330
cis-1,2-Dichloroethene	330
Trichloroethene	190
Vinyl Chloride	58

YS03-GW15-0309	
Screen	20-35 ft bgs
Sample Date	3/17/2009
VOCs (ug/L)	
cis-1,2-Dichloroethene	3.7
Trichloroethene	3.8
Vinyl chloride	2.3

YS03-GW21-0309	
Screen	25-35 ft bgs
Sample Date	3/18/2009
VOCs (ug/L)	
Trichloroethene	2.9

YS03-GW18-0309	
Screen	35-50 ft bgs
Sample Date	3/17/2009
VOCs (ug/L)	
Trichloroethene	0.91

YS03-GW08B-0309	
Screen	25-35 ft bgs
Sample Date	3/18/2009
VOCs (ug/L)	
Trichloroethene	5

YS03-GW26-0309	
Screen	45-55 ft bgs
Sample Date	3/17/2009
VOCs (ug/L)	
1,2-Dichloroethene (Total)	330
cis-1,2-Dichloroethene	330
Trichloroethene	130

YS03-GW08A-0309	
Screen	60-75 ft bgs
Sample Date	3/18/2009
VOCs (ug/L)	
No exceedances	

YS03-GW24-0309	
Screen	28-43 ft bgs
Sample Date	3/18/2009
VOCs (ug/L)	
1,1-Dichloroethane	8.2 J
1,1-Dichloroethene	12 J
cis-1,2-Dichloroethene	1400
1,2-dichloroethene (total)	1400
trans-1,2-dichloroethene	8.8 J
Trichloroethene	400
Vinyl chloride	1200

YS03-GW06-0309	
Screen	35-50 ft bgs
Sample Date	3/19/2009
VOCs (ug/L)	
Trichloroethene	0.49 J

YS03-GW23-0309	
Screen	40-50 ft bgs
Sample Date	3/18/2009
VOCs (ug/L)	
cis-1,2-Dichloroethene	5.9
Trichloroethene	9.9
Vinyl chloride	0.19 J

YS03-GW22-0309	
Screen	25-40 ft bgs
Sample Date	3/19/2009
VOCs (ug/L)	
1,2-Dichloroethene (Total)	100
cis-1,2-Dichloroethene	110
Trichloroethene	63
Vinyl Chloride	9.8

Indian Field Creek

Waste

Drums

Batteries

PAH Contaminated Soil

3GW07

1st 2nd 3rd 4th 5th 6th 7th 8th 9th 10th 11th 12th 13th

Legend

- Yorktown-Eastover Aquifer Monitoring Well
- Membrane Interface Probe Location
- Landfill Access Road
- Approximate Waste Limits
- Area of Excavation of PAH Contaminated Soil

Notes:

Concentrations shaded blue exceed MCLs
Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both MCLs and RSLs
Where duplicate samples taken, most conservative concentration value given
J - Analyte present. Value may or may not be accurate or precise
L - Analyte present, value may be biased low, actual value may be higher
ug/L - micrograms per Liter
VOC - Volatile Organic Compound
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

N W E S

0 100 200 Feet

Figure 5-9
VOC Exceedances in Yorktown-Eastover Aquifer
Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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SITE 3

C SW — C' NE

ELEVATION, IN FEET MEAN SEA LEVEL

Approximate Waste Removal Areas (~3-8 ft bgs)

Columbia Aquifer

Yorktown Confining Unit

Yorktown Eastover Aquifer

Indian Field Creek

3GW06 — 0.49 J

MIP7

MIP10

3GW24 — 400

3GW27 — 130

GW discharge to Indian Field Creek

3GW29 — 0.5U*

Estimated Eastover-Culvert Confining Unit Boundary

LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL
- GROUNDWATER FLOW

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 200

TCE ISOCONCENTRATION CONTOURS

- 2 ug/L - 20 ug/L
- 20 ug/L - 200 ug/L
- 200 ug/L - 2,000 ug/L

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. MIP DATA WAS NOT USED FOR LITHOLOGY DETERMINATION DUE TO EXPOSURE TO PETROLEUM. CONDUCTIVITY RESULTS WERE CONSIDERED UNRELIABLE. HOWEVER, ECD RESULTS WERE UNAFFECTED BY PETROLEUM CONTAMINATION AND WERE USED TO HELP DETERMINE EXTENT OF CONTAMINATION.
3. SOME CONTAMINATION WAS OBSERVED IN THE UNSATURATED ZONE BASED ON THE MIP RESULTS AND DPT CONFIRMATION SAMPLES CONFIRM MIP SIGNATURE AS CVOCs.

***** Low concentrations of TCE and vinyl chloride (0.24J µg/L) were detected in some rounds of sampling at 3GW29. However, the most recent round of sampling was 0.5U µg/L for both constituents. Thus, there is some uncertainty regarding contamination at this well.

VERTICAL SCALE: 10 / 0 / 50

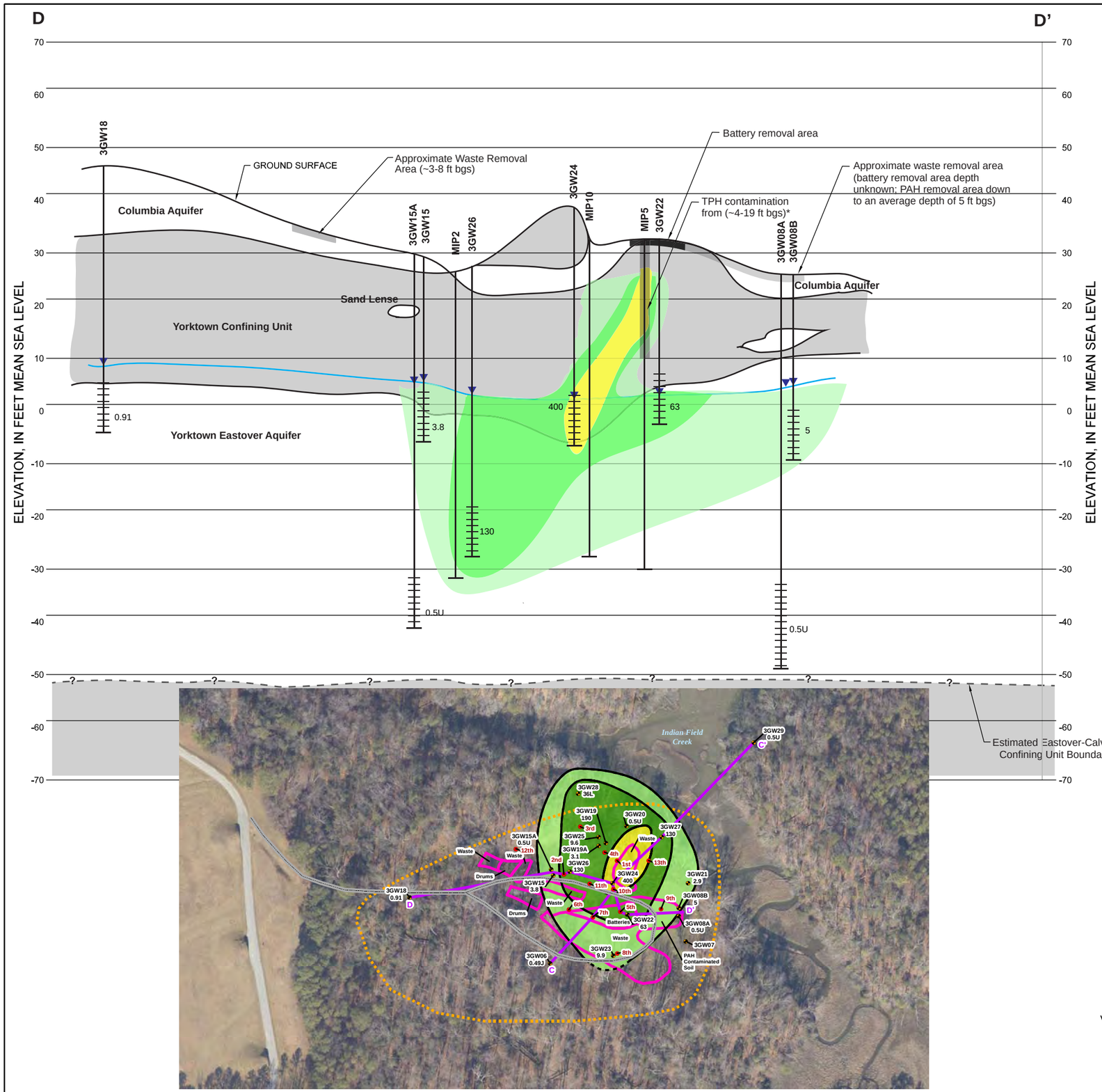
APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 5-10
SITE 3 TCE ISOCONCENTRATIONS
CROSS SECTION C-C'
PHASE II REMEDIAL INVESTIGATION REPORT, SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL

ES102111132027VBO Yorktown_XSections_CC_Contamination_v5.ai 12-23-11 IT/jls



LEGEND

- WELL SCREEN INTERVAL
- YORKTOWN - EASTOVER AQUIFER GROUNDWATER ELEVATION
- PREDOMINANTLY COARSE-GRAINED MATERIAL
- PREDOMINANTLY FINE-GRAINED MATERIAL

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009

TCE ISOCONCENTRATION CONTOURS

- 2 ug/L - 20 ug/L
- 20 ug/L - 200 ug/L
- 200 ug/L - 2,000 ug/L

NOTES:

1. WATER LEVELS TAKEN ON MARCH 6, 2009.
2. MIP DATA WAS NOT USED FOR LITHOLOGY DETERMINATION DUE TO EXPOSURE TO PETROLEUM. CONDUCTIVITY RESULTS WERE CONSIDERED UNRELIABLE. HOWEVER, ECD RESULTS WERE UNAFFECTED BY PETROLEUM CONTAMINATION AND WERE USED TO HELP DETERMINE EXTENT OF CONTAMINATION.
3. SOME CONTAMINATION WAS OBSERVED IN THE UNSATURATED ZONE BASED ON THE MIP RESULTS AND DPT CONFIRMATION SAMPLES CONFIRM MIP SIGNATURE AS CVOCs.

*TPH-diesel range = 350,000 µg/kg
gas range = 220 JB
oil range = 66,000

VERTICAL SCALE
10
0
50

APPROXIMATE HORIZONTAL SCALE (SCALE IN FEET)

VERTICAL EXAGGERATION = 5

FIGURE 5-11
SITE 3 TCE ISOCONCENTRATIONS
CROSS SECTION D-D'
PHASE II REMEDIAL INVESTIGATION REPORT, SITE 1 AND 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

CH2MHILL

VBO \\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\RI GW\PHASEIII\FIGURE5-12_SITE3_INORGANIC_YE_GW.MXD CBOWMAN 5/22/2012 11:20:54 AM

Chemical Name	RSL - Tap for GW Adjusted	MCL - Groundwater
Total Metals (ug/L)		
Aluminum	1600	--
Arsenic	0.045	10
Chromium	0.031	100
Cobalt	0.47	--
Iron	1100	--
Lead	32	--
Manganese	32	--
Nickel	30	--
Vanadium	7.8	--
Zinc	470	--
Dissolved Metals (ug/L)		
Aluminum	1600	--
Arsenic	0.045	10
Iron	1100	--
Manganese	32	--
Thallium	0.016	2

YS03-GW25-0309	
Screen	26-36 ft bgs
Sample Date	3/29/2009
Total Metals (ug/L)	
Arsenic	3.6 J
Chromium	6.1 J
Cobalt	2.7 J
Iron	2220
Manganese	155
Dissolved Metals (ug/L)	
Arsenic	7.9 J
Manganese	153

YS03-GW20-0309	
Screen	40-50 ft bgs
Sample Date	3/20/2009
Total Metals (ug/L)	
Chromium	11.7
Iron	2,700
Dissolved Metals (ug/L)	
Arsenic	2.8 J

YS03-GW19A-0409	
Screen	66-81 ft bgs
Sample Date	4/6/2009
Total Metals (ug/L)	
Aluminum	19300
Arsenic	60.7
Chromium	123
Cobalt	6.2
Iron	49600
Lead	17
Manganese	1320
Nickel	32.4 J
Vanadium	77.6
Zinc	2780
Dissolved Metals (ug/L)	
Aluminum	2040
Arsenic	5.6 J
Iron	1540
Manganese	448

YS03-GW20A-0309	
Screen	70-80 ft bgs
Sample Date	3/20/2009
Total Metals (ug/L)	
Iron	1410
Manganese	80.2
Dissolved Metals (ug/L)	
Arsenic	2.9 J
Manganese	59.2

YS03-GW15A-0309	
Screen	55-70 ft bgs
Sample Date	3/17/2009
Total Metals (ug/L)	
Chromium	1.4 J
Iron	1340
Manganese	47.6
Dissolved Metals (ug/L)	
No Exceedances	

YS03-GW28-0309	
Screen	6-16 ft bgs
Sample Date	3/19/2009
Total Metals (ug/L)	
No Exceedances	
Dissolved Metals (ug/L)	
Arsenic	3.2 J

YS03-GW27-0309	
Screen	25-35 ft bgs
Sample Date	3/20/2009
Total Metals (ug/L)	
Aluminum	5,670
Arsenic	17.2
Chromium	18.2
Cobalt	5.3
Iron	7,250
Manganese	500
Vanadium	26.1
Dissolved Metals (ug/L)	
Arsenic	5.7 J
Manganese	482

YS03-GW29-0309	
Screen	30-40 ft bgs
Sample Date	3/20/2009
Total Metals (ug/L)	
Arsenic	18.5
Iron	40.4
Chromium	1310
Manganese	42.7
Dissolved Metals (ug/L)	
Arsenic	25.8
Manganese	40.7

YS03-GW15-0309	
Screen	20-35 ft bgs
Sample Date	3/17/2009
Total Metals (ug/L)	
Chromium	1.9 J
Cobalt	2.6 J
Iron	1410
Manganese	219
Dissolved Metals (ug/L)	
Arsenic	3.1 J
Manganese	226

YS03-GW19-0309	
Screen	30-45 ft bgs
Sample Date	3/19/2009
Total Metals (ug/L)	
Manganese	1.4 J
Dissolved Metals (ug/L)	
Arsenic	1340
Manganese	47.6

YS03-GW21-0309	
Screen	25-35 ft bgs
Sample Date	3/17/2009
Total Metals (ug/L)	
Aluminum	4290
Arsenic	45
Chromium	20.8
Cobalt	2.7 J
Iron	11000
Manganese	1260
Vanadium	29
Dissolved Metals (ug/L)	
Arsenic	34.7
Iron	2010
Manganese	1260

YS03-GW26-0309	
Screen	45-55 ft bgs
Sample Date	3/17/2009
Total Metals (ug/L)	
Chromium	5.6 J
Iron	2930
Manganese	79.1
Dissolved Metals (ug/L)	
Arsenic	3.1 J
Iron	1960
Manganese	76.5

YS03-GW08B-0309	
Screen	25-35 ft bgs
Sample Date	3/18/2009
Total Metals (ug/L)	
Chromium	12.7
Manganese	39.2
Dissolved Metals (ug/L)	
Arsenic	3.7 J
Manganese	34.9
Thallium	4.1 J

YS03-GW18-0309	
Screen	35-50 ft bgs
Sample Date	3/17/2009
Total Metals (ug/L)	
No Exceedances	
Dissolved Metals (ug/L)	
No Exceedances	

YS03-GW24-0309	
Screen	28-43 ft bgs
Sample Date	3/30/2009
Total Metals (ug/L)	
Aluminum	13000
Arsenic	32.3
Chromium	524
Cobalt	10.9
Iron	36,000
Manganese	523
Nickel	250
Vanadium	62
Dissolved Metals (ug/L)	
Arsenic	6.4 J
Manganese	225

YS03-GW06-0309	
Screen	35-50 ft bgs
Sample Date	3/19/2009
Total Metals (ug/L)	
Manganese	41.7
Dissolved Metals (ug/L)	
Arsenic	4.9 J

YS03-GW23-0309	
Screen	40-50 ft bgs
Sample Date	3/18/2009
Total Metals (ug/L)	
Arsenic	2.7 J
Iron	2190
Manganese	147
Dissolved Metals (ug/L)	
Arsenic	6 J
Iron	1800
Manganese	152

YS03-GW22-0309	
Screen	25-40 ft bgs
Sample Date	3/19/2009
Total Metals (ug/L)	
Manganese	102
Dissolved Metals (ug/L)	
Arsenic	6.5 J
Manganese	121

YS03-GW08A-0309	
Screen	60-75 ft bgs
Sample Date	3/18/2009
Total Metals (ug/L)	
Iron	1160
Manganese	77.5
Dissolved Metals (ug/L)	
Arsenic	4.7 J
Manganese	77.3

Indian Field Creek

Waste
Drums
Batteries
PAH Contaminated Soil
3GW07
1st
2nd
3rd
4th
5th
6th
7th
8th
9th
10th
11th
12th
13th

Legend
- Yorktown-Eastover Aquifer Monitoring Well
- Membrane Interface Probe Location
- Landfill Access Road
- Approximate Waste Limits
- Area of Excavation of PAH Contaminated Soil

Notes:
Concentrations shaded blue exceed MCLs
Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both MCLs and RSLs
J - Analyte present. Value may or may not be accurate or precise
L - Analyte present, value may be biased low, actual value may be higher
ND - Not Detected
ug/L - micrograms per Liter
*RSLs were adjusted by dividing by 10 for noncarcinogens to account for exposure to multiple constituents

N W E S

0 100 200 Feet

Figure 5-12
Inorganic Exceedances in Yorktown-Eastover Aquifer
Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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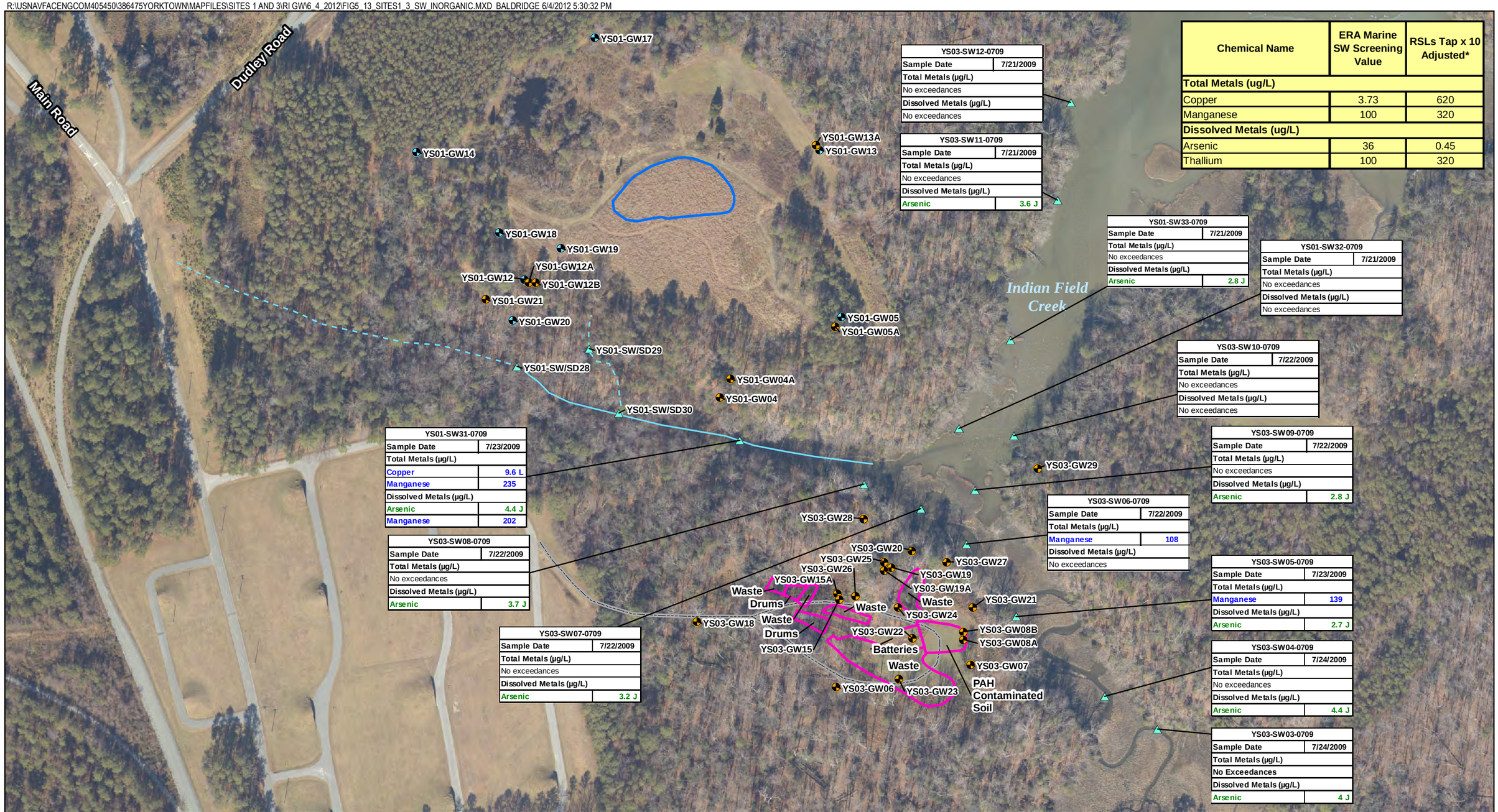

YS03-SW12-0709	
Sample Date	7/21/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

YS03-SW11-0709	
Sample Date	7/21/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
Arsenic	3.6 J

YS01-SW33-0709	
Sample Date	7/21/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
Arsenic	2.8 J

YS01-SW32-0709	
Sample Date	7/21/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

YS03-SW10-0709	
Sample Date	7/22/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
No exceedances	

YS01-SW31-0709	
Sample Date	7/23/2009
Total Metals (µg/L)	
Copper	9.6 L
Manganese	235
Dissolved Metals (µg/L)	
Arsenic	4.4 J
Manganese	202

YS03-SW09-0709	
Sample Date	7/22/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
Arsenic	2.8 J

YS03-SW06-0709	
Sample Date	7/22/2009
Total Metals (µg/L)	
Manganese	108
Dissolved Metals (µg/L)	
No exceedances	

YS03-SW08-0709	
Sample Date	7/22/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
Arsenic	3.7 J

YS03-SW05-0709	
Sample Date	7/23/2009
Total Metals (µg/L)	
Manganese	139
Dissolved Metals (µg/L)	
Arsenic	2.7 J

YS03-SW07-0709	
Sample Date	7/22/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
Arsenic	3.2 J

YS03-SW04-0709	
Sample Date	7/24/2009
Total Metals (µg/L)	
No exceedances	
Dissolved Metals (µg/L)	
Arsenic	4.4 J

YS03-SW03-0709	
Sample Date	7/24/2009
Total Metals (µg/L)	
No Exceedances	
Dissolved Metals (µg/L)	
Arsenic	4 J

Chemical Name	ERA Marine SW Screening Value	RSLs Tap x 10 Adjusted*
Total Metals (ug/L)		
Copper	3.73	620
Manganese	100	320
Dissolved Metals (ug/L)		
Arsenic	36	0.45
Thallium	100	320

Legend

- Surface Water and Sediment Sample Location
- Columbia Aquifer Monitoring Well
- Yorktown-Eastover Aquifer Monitoring Well
- Landfill Access Road
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap
- Approximate Waste Limits

Notes:

Concentrations shaded blue exceed ERA Marine SW SVs
Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both ERA Marine SW SVs and RSLs
Where duplicate samples taken, most conservative concentration value given
RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents
J - Analyte present. Value may or may not be accurate or precise
L - Analyte present, value may be biased low, actual value may be higher
mg/kg - Milligrams per kilogram
*RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents

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Figure 5-13
Inorganic Exceedances in Surface Water
Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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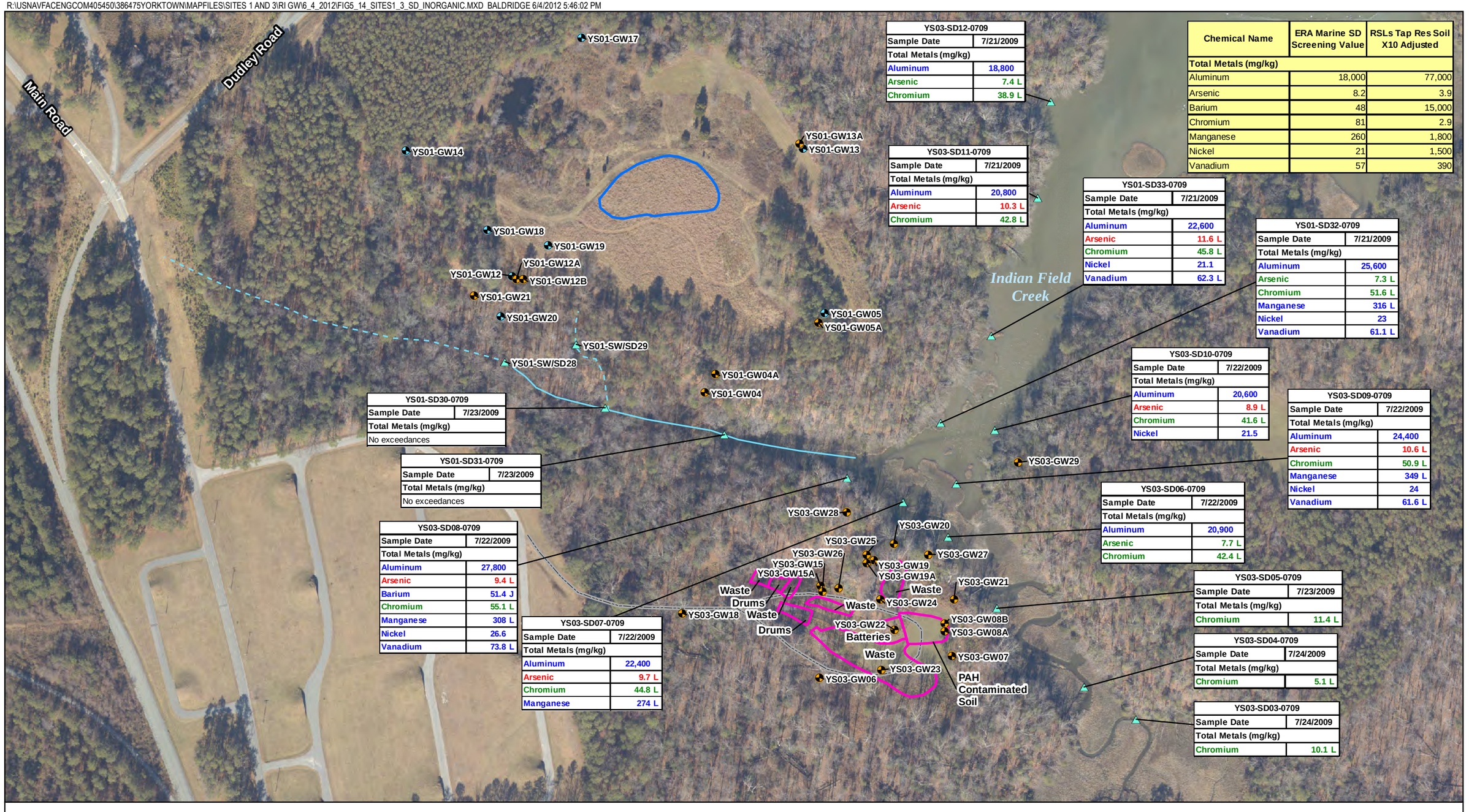

YS03-SD12-0709	
Sample Date	7/21/2009
Total Metals (mg/kg)	
Aluminum	18,800
Arsenic	7.4 L
Chromium	38.9 L

YS03-SD11-0709	
Sample Date	7/21/2009
Total Metals (mg/kg)	
Aluminum	20,800
Arsenic	10.3 L
Chromium	42.8 L

YS01-SD33-0709	
Sample Date	7/21/2009
Total Metals (mg/kg)	
Aluminum	22,600
Arsenic	11.6 L
Chromium	45.8 L
Nickel	21.1
Vanadium	62.3 L

YS01-SD32-0709	
Sample Date	7/21/2009
Total Metals (mg/kg)	
Aluminum	25,600
Arsenic	7.3 L
Chromium	51.6 L
Manganese	316 L
Nickel	23
Vanadium	61.1 L

Chemical Name	ERA Marine SD Screening Value	RSLs Tap Res Soil X10 Adjusted
Total Metals (mg/kg)		
Aluminum	18,000	77,000
Arsenic	8.2	3.9
Barium	48	15,000
Chromium	81	2.9
Manganese	260	1,800
Nickel	21	1,500
Vanadium	57	390

YS03-SD10-0709	
Sample Date	7/22/2009
Total Metals (mg/kg)	
Aluminum	20,600
Arsenic	8.9 L
Chromium	41.6 L
Nickel	21.5

YS03-SD09-0709	
Sample Date	7/22/2009
Total Metals (mg/kg)	
Aluminum	24,400
Arsenic	10.6 L
Chromium	50.9 L
Manganese	349 L
Nickel	24
Vanadium	61.6 L

YS01-SD30-0709	
Sample Date	7/23/2009
Total Metals (mg/kg)	
No exceedances	

YS01-SD31-0709	
Sample Date	7/23/2009
Total Metals (mg/kg)	
No exceedances	

YS03-SD08-0709	
Sample Date	7/22/2009
Total Metals (mg/kg)	
Aluminum	27,800
Arsenic	9.4 L
Barium	51.4 J
Chromium	55.1 L
Manganese	308 L
Nickel	26.6
Vanadium	73.8 L

YS03-SD07-0709	
Sample Date	7/22/2009
Total Metals (mg/kg)	
Aluminum	22,400
Arsenic	9.7 L
Chromium	44.8 L
Manganese	274 L

YS03-SD06-0709	
Sample Date	7/22/2009
Total Metals (mg/kg)	
Aluminum	20,900
Arsenic	7.7 L
Chromium	42.4 L

YS03-SD05-0709	
Sample Date	7/23/2009
Total Metals (mg/kg)	
Chromium	11.4 L

YS03-SD04-0709	
Sample Date	7/24/2009
Total Metals (mg/kg)	
Chromium	5.1 L

YS03-SD03-0709	
Sample Date	7/24/2009
Total Metals (mg/kg)	
Chromium	10.1 L

Legend

- Surface Water and Sediment Sample Location
- Columbia Aquifer Monitoring Well
- Yorktown-Eastover Aquifer Monitoring Well
- Landfill Access Road
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap
- Approximate Waste Limits

Notes:

Concentrations shaded blue exceed ERA Marine SW SVs
Concentrations shaded green exceed RSLs
Concentrations shaded red exceed both ERA Marine SW SVs and RSLs
Where duplicate samples taken, most conservative concentration value given
RSLs were adjusted for noncarcinogens to account for exposure to multiple constituents
J - Analyte present. Value may or may not be accurate or precise
L - Analyte present, value may be biased low, actual value may be higher
mg/kg - Milligrams per kilogram

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Figure 5-14
Inorganic Exceedances in Sediment
Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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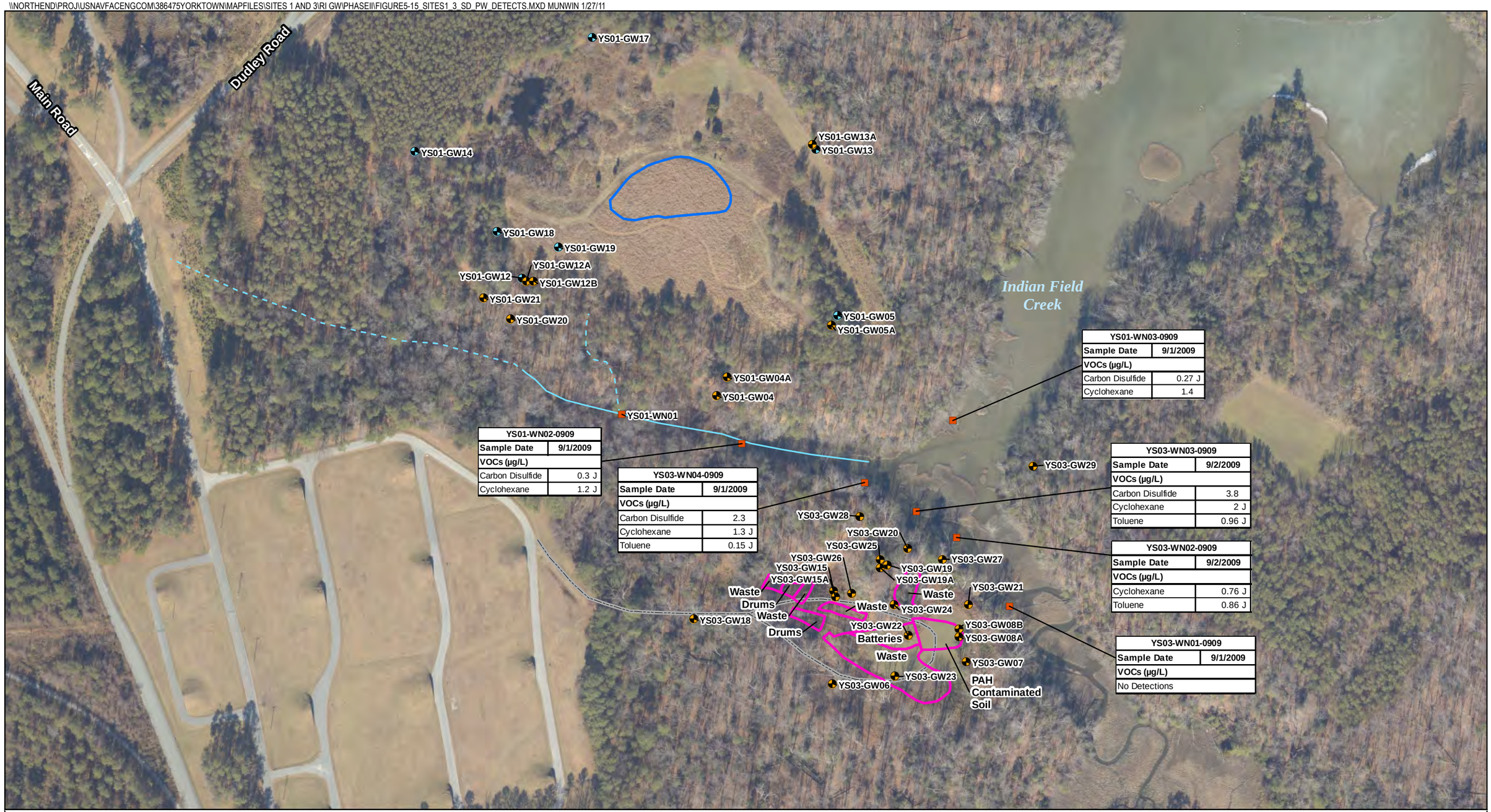

Legend

- Sediment Pore Water Sample Location
- Columbia Aquifer Monitoring Well
- Yorktown-Eastover Aquifer Monitoring Well
- Landfill Access Road
- Tributary
- Intermittent Tributary
- Landfill Area with New Cap
- Approximate Waste Limits

Notes:
Where duplicate samples taken, most conservative concentration value given
J - Analyte present. Value may or may not be accurate or precise
µg/L - micrograms per Liter
VOC - Volatile Organic Compound

N
W E
S

0 200 400
Feet

Figure 5-15
Sediment Pore Water VOC Detections
Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

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SECTION 6

Human Health Risk Assessment

Section 6.1 presents the methodology used for the HHRAs for Sites 1 and 3. Section 6.2 presents the HHRA for Site 1, Section 6.3 presents the HHRA for Site 3, and Section 6.4 presents the HHRA for the surface water and sediment associated with Sites 1 and 3. Because both sites feed into the same surface water body and contributions from each site could not be separated, risks associated with surface water and sediment were evaluated together for Sites 1 and 3.

6.1 Human Health Risk Assessment Methodology

This section presents the methodology used to assess the potential human health risks associated with exposure to site-related constituents in groundwater, surface water, and sediment at Sites 1 and 3 under current and potential future site use.

Soil removal and remediation actions have been conducted at these two sites. At Site 1, surface debris and arsenic-contaminated soil were removed from the site in 1999, and additional soil cover was placed on the landfill, following the approach presented in the Proposed Plan and ROD. At Site 3, following the completion of the Proposed Plan and ROD for soils, the landfill was excavated entirely and the area was backfilled with clean soil in 1999. Consequently this investigation was not intended to investigate or evaluate soil contamination at Sites 1 and 3. MIP results indicated potential impacts to unsaturated soil at Site 3; therefore, consistent with Section 5, soil samples were collected to evaluate if a potential source to groundwater remained at the site. As described in Section 5.1.2, there were no exceedances of RSLs for VOCs, SVOCs, or pesticides. Inorganic constituent concentrations were consistent with background values. Consequently, risks associated with soil exposure were not evaluated in this report.

The methodology for the HHRA that is common to each of the sites is presented in this section. The site-specific HHRA evaluations are presented in Sections 6.2, 6.3, and 6.4.

6.1.1 Scope of Risk Assessment

The HHRA consists of the following components:

- Identification of COPCs
- Exposure Assessment
- Toxicity Assessment
- Risk Characterization
- Uncertainty Assessment

These components are described in the following sections. Spreadsheets for each site were prepared in accordance with *Risk Assessment Guidance for Superfund* (*RAGS), Volume 1, Human Health Evaluation Manual, Part D* (USEPA, 2001) to screen for COPCs and to calculate risk estimates associated with the COPCs. These spreadsheets are presented for each site individually in **Appendices I** and **J** and in **Appendix K** for surface water and sediment for both sites.

6.1.2 Identification of COPCs

The identification of COPCs included data collection, data evaluation, and data screening. The data collection and evaluation steps involved gathering and reviewing the available site data and identifying a set of data for the risk assessment that met project-specific DQOs. This data set was then further screened against concentrations that are protective of human health to reduce the data set to those constituents and media of potential concern.

Data Evaluation and Selection

Detailed results of the sampling that was performed at Sites 1and 3 are presented in Section 5 of this report. All of the data used in the risk assessment have been fully validated and are assumed to represent current conditions.

The data collected during site investigations were evaluated to determine reliability for use in the quantitative risk assessments. A review of the data and past discussions with USEPA and the Navy identified the following criteria for data usability and usage of qualified data:

- Data qualified with a J, K, or L (estimated) were treated as unqualified detected concentrations.
- Data qualified with an R (rejected) were not used in the risk assessment.
- Data qualified with a B (blank contamination) were used in the risk assessment as if the results were non-detects, with the blank-related concentrations of each constituent used as the sample detection limit.
- For duplicate samples, the maximum concentration between the two samples was used as the sample concentration.

Selection of COPCs

All of the detected constituents were screened following the procedures described below. The selection of COPCs was based on the criteria presented in the USEPA *Region 3 Technical Guidance Manual, Selection Exposure Routes and Contaminants of Concern by Risk-Based Screening* (USEPA, 1993b) and RAGS Part D (USEPA, 2001).

The maximum detected concentration of each constituent for each media and data grouping was compared to the criteria discussed below to select the COPCs. If the maximum concentration exceeded the relevant criteria, the constituent was selected as a COPC. Constituents that were not detected in any of the samples or were detected at concentrations less than the criteria were not retained as COPCs. Detection limits for constituents that were not detected were also compared to the screening levels, as discussed in Section 6.1.6, the uncertainty assessment. The COPC screening for each site is presented in Sections 6.2 and 6.3.

- **Comparison with Health-Based Criteria for Surface Water:** Surface water data were compared to 10 times the USEPA tap water RSLs (USEPA, 2011). This was done following USEPA Region 3 guidance because exposure to surface water is expected to be significantly less than exposure to groundwater, and there are no human health screening levels specifically for surface water. RSLs based on non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents. RSLs based on carcinogenic effects were not adjusted. Therefore, RSLs based on non-carcinogenic effects were used as presented in the RSL table (10 times the tap water RSL divided by 10), and RSLs based on carcinogenic effects were multiplied by 10. Lead concentrations in surface water were compared to the federal action level for drinking water of 15 μg/L (USEPA, 2009a). Surface water data were also compared to National Recommended Water Quality Criteria (NRWQC) for ingestion of water and organisms (USEPA, 2009b). However, as the surface water is not used as a water supply, and the surface water bodies (Indian Field Creek and unnamed tributary) support fishing only on a "catch and release" program, the NRWQC may be overly conservative and were not used to identify COPCs.
- **Comparison with Health-Based Criteria for Sediment:** Sediment data were compared to 10 times the USEPA residential soil RSLs (USEPA, 2011). This was done following USEPA Region 3 guidance because exposure to sediment is expected to be significantly less than exposure to soil, and there are no human health screening levels specifically for sediment. RSLs based on non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents. RSLs based on carcinogenic effects were not adjusted. Therefore, RSLs based on non-carcinogenic effects were used as presented in the RSL table (10 times the residential soil RSL divided by 10), and RSLs based on carcinogenic effects were multiplied by 10.
- **Comparison with Health-Based Criteria for Groundwater:** Groundwater data were compared to the USEPA tap water RSLs (USEPA, 2011). RSLs that are based on non-carcinogenic effects were divided by 10 to account for exposure to multiple constituents. RSLs based on carcinogenic effects were used as presented in the RSL table. Lead concentrations in groundwater were compared to the federal action level for drinking water of 15 μg/L (USEPA, 2009a). Groundwater data were also compared to MCLs; however, this comparison was not used to identify the COPCs.
- **Comparison with Health-based Criteria for Vapor Intrusion from Groundwater to Indoor Air:** Groundwater risk-based screening levels protective of the vapor intrusion exposure pathway were calculated using the

methodology described in Appendix D of the *Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* (USEPA, 2002). The target groundwater concentration was calculated by dividing the target indoor air concentration by an attenuation factor ($\mathrm{AF} = 0.001$) that accounts for the diffusion resistance across the capillary fringe, and then converting the vapor concentration to an equivalent groundwater concentration, assuming the equilibrium partitioning obeys Henry's Law:

$$\text{Generic Groundwater RBSL } (\mu g/L) = \frac{\text{Target air concentration } (\mu g/m^3) \times 10^{-3}\ (m^3/L)}{\text{Henry's Law Constant} \times \text{AF } (0.001)}$$

$\mu g/m^3$ = micrograms per cubic meter
m^3/L = cubic meter per liter

- The target air concentrations are the USEPA residential and industrial air RSLs (USEPA, 2011), based on 10^{-6} for carcinogens and HQ of 0.1 for noncarcinogens. The Henry's Law Constant is specific to each constituent and was adjusted to be consistent with the groundwater temperature. The groundwater risk-based screening levels were calculated for noncarcinogenic and carcinogenic endpoints, and for constituents with both, the lower value was selected as the screening level. Additionally, if the constituent has an MCL, the MCL was selected as the screening level when it was greater than the calculated risk-based screening level. The calculations and resulting screening levels are included in **Appendices I** and **J**, in the Table 2 series.
- **Essential Human Nutrients:** Constituents that are considered essential nutrients, present at low concentrations (i.e., only slightly elevated above naturally occurring levels), and toxic only at very high doses, were eliminated from the quantitative risk analysis. These constituents are calcium, magnesium, potassium, and sodium. Although iron and manganese are also considered essential nutrients and are only toxic at very high doses, they were included in the HHRA because toxicity values are available.

6.1.3 Exposure Assessment

Exposure refers to the potential contact of an individual with a constituent. The exposure assessment identifies pathways and routes by which an individual may be exposed to the COPCs, and estimates the magnitude, frequency, and duration of potential exposure. Constituent intakes and associated health risks are only quantified for complete exposure pathways. The following sections discuss the components of exposure assessment:

- Development of the CSM for human health
- Calculation of exposure point concentrations
- Development of exposure assumptions for potentially complete exposure pathways
- Calculation of intake for COPCs

Conceptual Site Model for Human Health

This section provides the basis for developing the CSM for human exposures at Sites 1 and 3. **Figure 6-1** presents the CSM showing potential human health exposure scenarios identified for current and potential future site use conditions for these sites.

Physical Characteristics Sites 1 and 3 are located within WPNSTA Yorktown, on the York-James Peninsula, which is an embayed portion of the Atlantic Coastal Plain physiographic province. Sites 1 and 3 are located in the same area of WPNSTA, in the northern portion, west of Indian Field Creek. An unnamed tributary flows between the two sites (south of Site 1 and north of Site 3) into Indian Field Creek. Sites 1 and 3 were former landfills where various wastes were disposed. Sites 1 and 3 are currently open fields surrounded by woods. More specific information for each site is included in Sections 4 and 5.

Characterization of Land Use The mission of WPNSTA is to provide ordnance, technical support, and related services to sustain the war-fighting capability of the armed forces in support of national military strategy. Sites 1 and 3 are within a restricted area of WPNSTA and special access badges are required to enter these areas. Furthermore, the sites are located inside an area encumbered by the Explosive Safety Quantity Distance (ESQD) and cannot be developed for real estate purposes. Currently, there are no activities at Sites 1 and 3, although

personnel may hunt on the property during deer and turkey hunting seasons. Indian Field Creek supports fishing only on a "catch and release" basis (as part of Navy policy). The constituents detected in the surface water and sediment (primarily metals) at these sites are not constituents that are typically considered to bioaccumulate in fish and crabs to levels of concern for humans who ingest these fish and crab, with the possible exception of mercury (if present as methyl mercury). Mercury was detected in eleven of the fourteen sediment samples and one of the thirteen surface water samples. Mercury was detected in sediment at a maximum concentration of 0.12 mg/kg. This concentration is not considered to be a concern for bioaccumulation in fish or crab tissue at levels that would pose a risk to human receptors that ingest the fish and crab. In addition, any site-related concentrations in fish and crab downgradient of the sites, where people are more likely to fish and crab and eat the fish and crabs they catch, are anticipated to be lower.

Groundwater Use The source of domestic water supply for WPNSTA Yorktown and surrounding communities is from the City of Newport News, Virginia, waterworks through a series of surface water reservoirs. On WPNSTA Yorktown, there are no drinking water wells, and the shallow aquifer system is not used for any domestic water supply. There were four historic water supply wells on WPNSTA Yorktown; three have been abandoned and the fourth has been destroyed.

Potentially Exposed Populations Potentially exposed populations are identified based on their locations relative to the site, their activity patterns, and the presence of potential sensitive subpopulations. The potentially exposed populations evaluated by the risk assessment are shown on the CSM (**Figure 6-1**) and identified as appropriate for each site in Sections 6.2, 6.3, and 6.4. Other details of the CSM not discussed in detail in this section are described in Section 8.

Exposure points are locations where humans could come in contact with contaminants released from the disposal areas to environmental media. Exposure points for Sites 1 and 3 include surface water, sediment, and groundwater.

Current site use could allow for exposure to surface water and sediment. Potential receptors that could be exposed to surface water and sediment are current/future adult, adolescent, and child trespassers/visitors.

Potential future site use will likely stay the same as the current site use. However, for a conservative evaluation of potential risks, residential and industrial uses were evaluated in addition to the current site use scenarios. Although groundwater would most likely not be used as a future potable water supply by industrial workers because the Station already has a potable water supply, this pathway was conservatively evaluated as potentially complete. Additionally, it was conservatively assumed that shallow groundwater may be used as a future residential potable water supply, although this is highly unlikely. Construction workers could be exposed to shallow groundwater during excavation activities. Unfiltered groundwater samples were used to evaluate the construction worker scenario, and filtered groundwater samples were used to evaluate the residential exposure scenarios, following USEPA Region III *Guidance on the Selection of Analytical Metal Results from Monitoring Well Samples for Use in Quantitative assessment of Risk* (USEPA, 1992).

Additionally, future industrial workers or residents could be exposed to COPCs in indoor air from vapor intrusion from the shallow groundwater into a future building or residence constructed on one of the sites. There are currently no buildings on either of these sites. This pathway was evaluated quantitatively in the risk assessment only for Site 3. Site 1 is a landfill with waste in place; therefore, LUCs will be implemented to restrict any construction activities at the site, including the construction of future residential or industrial buildings.

It is also assumed that in addition to the current receptors for surface water and sediment, future construction workers could be exposed to surface water and sediment in Indian Field Creek.

In summary, the exposure routes for quantitative evaluation are:

- Current/Future Trespasser/Visitor (adult and adolescent): ingestion of and dermal contact with surface water and sediment

- Future resident (adult and child): ingestion of and dermal contact with shallow groundwater, inhalation of volatile COPCs from shallow water while showering, and inhalation of indoor air (vapor intrusion from groundwater into site building) for Site 3 only
- Future industrial worker: Ingestion of groundwater, and inhalation of indoor air (vapor intrusion from groundwater into site building) for Site 3 only
- Future construction worker: dermal contact with and inhalation of volatile emissions from shallow groundwater from an open excavation, ingestion of and dermal contact with surface water and sediment

Residential exposures to surface water and sediment were not evaluated by the risk assessment. It was assumed that the trespasser/visitor scenario would also be representative of future residents using surface water and sediment for recreational purposes.

Calculation of Exposure Point Concentrations

Exposure is quantified by estimating the exposure point concentrations (EPCs) of COPCs in environmental media and constituent intake by the receptor. EPCs are estimated constituent concentrations that a receptor may contact and are specific to each exposure medium and site. EPCs may be directly monitored or estimated using environmental models. Constituent concentrations in groundwater, surface water, and sediment were measured for this assessment. Fate and transport modeling was used to estimate constituent concentrations in vapors from groundwater while showering, in vapors volatilized from groundwater in an open excavation, and in indoor air associated with vapor intrusion from groundwater. Volatilization while showering was estimated using the Foster and Chrostowski shower model (1987). Concentrations of VOCs in air resulting from volatilization of constituents in shallow groundwater in an open excavation were calculated using the Calculation of Inhalation Concentration in Excavation Trench methodology from the Virginia Voluntary Remediation Program (VRP). The Foster and Chrostowski shower model and the VRP model calculations are presented for the sites in **Appendices I** and **J** Table 7 series. Indoor air concentrations resulting from vapor intrusion from shallow groundwater were calculated for Site 3 using the methodology described in Appendix D of the *OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance)* (USEPA, 2002). The wells from the center of the contamination plumes for each site were used to calculate the EPCs. The wells used to calculate the EPCs are identified on **Tables 6-1** and **6-6**.

EPCs were calculated for the COPCs using ProUCL software Version 4.1 (USEPA, 2010). ProUCL was used to determine the distribution that the data fit and to calculate the 95 percent UCLs. ProUCL includes three possible data distribution tests: normal distribution, log-normal distribution, and gamma distribution. The UCL calculation method is then selected based on the data distribution (that is, normal, lognormal, gamma, or nonparametric if the data do not fit any of the distributions). The recommendations outlined in the ProUCL software documentation were followed to select the appropriate UCL (USEPA, 2010). The maximum detected concentration was used as the EPC in cases where the COPC was only detected in one sample, if not enough distinct values were available, or the estimated 95 percent UCL was greater than the maximum detected concentration.

Only the groundwater data from wells from the center of the plume, or the most contaminated wells, were used to calculate the groundwater EPCs.

The EPCs for the COPCs for each medium at each site and the rationale for the selected EPC are presented in **Appendices I** through **K**, Table 3 series.

Estimation of Chemical Intakes for Individual Pathways

Chemical intake is the amount of the chemical constituent entering the receptor's body. The medium-specific and exposure scenario–specific intake equations used in this assessment are provided in the RAGS Part D Table 4 (USEPA, 2001) series in **Appendices I** through **K**. The intake equation requires specific exposure parameters for each exposure pathway. Exposure parameters are often assumed values, and the magnitude influences the estimates of potential exposure (and risk). The reliability of the values chosen can also contribute to the uncertainty of the resulting risk estimates. Many of the exposure parameters have default values suggested by

the USEPA, which were used for this assessment. These assumptions, based on estimates of body weights, media intake levels, and exposure frequencies and duration are provided by USEPA guidance (USEPA, 1989; 1991; 1997a; 2004). Other assumptions (e.g., exposure frequency for the trespasser/visitor exposure scenarios) required consideration of location-specific information and were determined using professional judgment. The exposure factors used for different scenarios at the site are provided in the RAGS Part D Table 4 (USEPA, 2001) series in **Appendices I** through **K**.

Although RAGS Part E (USEPA, 2004) recommends an exposure frequency of 250 days for the industrial worker (or construction worker) exposed to site media under the reasonable maximum exposure (RME) scenario, it is unlikely that a construction worker would be exposed to groundwater in an excavation for longer than 125 days. It is also likely that any groundwater that is present in an excavation would be pumped from the excavation while performing construction activities. Therefore, an exposure frequency of 125 days per year was selected to evaluate construction worker exposure to groundwater. Additionally, it is unlikely that a construction worker would be exposed to surface water and sediment every day they work at the site. Therefore, it was assumed that a construction worker may be exposed to surface water and sediment 10 days per year while performing maintenance or construction work within Indian Field Creek and its unnamed tributary.

There are no standard default ingestion rates available for sediment. Therefore, one-half of the soil ingestion rates were used as the ingestion rates for sediment. Ingestion of sediment is expected to be much lower than ingestion of soil. As the majority of the sediment is covered with surface water, much of the sediment would wash off the skin during activities involving surface water and sediment contact, and not as much sediment (if any) would be available for transfer from the skin (primarily hands) to the mouth for ingestion. Additionally, since the sediment is wet, not much particulate emission from sediment (if any) would occur.

Sediment was treated as soil to estimate exposure via dermal contact. Two additional parameters are necessary to estimate dermal contact with soil or sediment. The first parameter, the dermal absorption fraction, estimates the amount of a constituent in soil or sediment that would be absorbed by the skin. The USEPA (2004) guidance for absorption fractions was used, which recommends 3 percent for arsenic and 1 percent for chromium, the only COPCs for sediment. These values are estimates based on available experimental data for dermal absorption from contaminated soil. The actual amount absorbed is dependent on soil characteristics. The second additional parameter necessary to estimate dermal expose to constituents in sediment is the sediment (soil) to skin adherence factor (AF). The AF estimates the amount of sediment that adheres to the skin per unit of surface area. The AFs used in this assessment were obtained from USEPA guidance (2004) and are included in the RAGS Part D (USEPA, 2001) Table 4 series in **Appendix K**. The AFs for reed gatherers were used for the adult receptor, as the reed gatherers are assumed to be exposed to wet soil or muddy conditions, which is more representative of exposure to sediment than a drier soil exposure. The AFs for children playing in wet soil were used for the adolescent receptor exposed to sediment.

The dermal exposure model presented in USEPA's dermal exposure assessment guidance (USEPA, 2004) was used to estimate dermal exposure to groundwater (there were no COPCs identified for surface water, see Section 6.4.6). The values for parameters used in this model (i.e., permeability constant) were obtained from this guidance document and are included in the RAGS Part D Table 4 (USEPA, 2001) series in **Appendices I** and **J**.

6.1.4 Toxicity Assessment

Toxicity assessment defines the relationship between the magnitude of exposure and possible severity of adverse effects, and weighs the quality of available toxicological evidence. Toxicity assessment generally consists of two steps: hazard identification and dose-response assessment. Hazard identification is the process of determining the potential adverse effects from exposure to the constituent along with the type of health effect involved. Dose-response assessment is the process of quantitatively evaluating the toxicity information and characterizing the relationship between the dose of the constituent administered or received and the incidence of adverse health effects in the exposed population. Toxicity criteria (e.g., reference doses and slope factors) are derived from the dose-response relationship.

The USEPA recommends that a tiered approach be used to obtain the toxicity values, the reference doses (RfDs), inhalation reference concentrations (RfCs), cancer slope factors (CSFs),and inhalation unit risk factors (IURs) used to calculate non-cancer and cancer risks, respectively (USEPA, 2003). The sources of toxicity values are as follows:

- The USEPA's Integrated Risk Information System database (USEPA, 2012).
- The Provisional Peer Reviewed Toxicity Value (PPRTV) database maintained by the USEPA's National Center for Environmental Assessment (NCEA) and the Superfund Health Risk Technical Support Center.
- Other USEPA and non-USEPA sources including: NCEA, Agency for Toxic Substances and Disease Registry, Health Effects Assessment Summary Tables (USEPA, 1997b), California EPA (Cal EPA), USEPA's Office of Water, and World Health Organization.

The use of provisional toxicity values, such as those from the PPRTV database, increases the uncertainty of the quantitative risk estimate.

USEPA-derived oral and inhalation chronic and subchronic RfDs, inhalation RfCs, and associated uncertainty factors (UFs) and modifying factors, for the COPCs are listed in the Table 5 series in **Appendix I** through **K**. USEPA-derived oral and inhalation CSFs and inhalation (IURs are listed in the Table 6 series in **Appendix I** through **K**.

Toxicity Information for Non-carcinogenic Effects

Non-carcinogenic health effects include a variety of toxic effects on body systems, ranging from toxicity to the kidneys to central nervous system disorders. The toxicity of a chemical is assessed through a review of toxic effects noted in short-term (acute) animal studies, long-term (chronic) animal studies, and epidemiological investigations.

USEPA (1989) defines the chronic RfD or RfC as a dose that is likely to be without appreciable risk of deleterious effects during a lifetime of exposure. Chronic RfDs and RfCs are specifically developed to be protective for long-term exposure to a compound (for example, 7 years to a lifetime), and consider uncertainty in the toxicological database and sensitive receptors. Subchronic RfDs and RfCs (applicable for exposures less than 7 years), which are all provisional values (i.e., not verified by USEPA), were used for the construction worker scenario.

In the development of RfDs, all available studies examining the toxicity of a chemical following exposure are considered on the basis of scientific merit. The lowest dose level at which an observed toxic effect occurs is identified as the Lowest Observed Adverse Effect Level (LOAEL), and the dose at which no effect is observed is identified as the No Observed Adverse Effect Level (NOAEL). Several UFs may be applied to account for uncertainties such as poor data quality, extrapolation of data from animal studies to human exposures, or the use of subchronic studies to develop chronic criteria. These UFs range from 10 to 10,000, and are based on professional judgment. Consequently, there are varying degrees of uncertainty in the toxicity criteria.

Per USEPA guidance, oral RfDs were adjusted from administered dose (oral) to absorbed dose (dermal) to evaluate dermal toxicity. When appropriate, the RfDs were adjusted using oral absorption factors (USEPA, 2004). This adjustment is shown in the RAGS Part D Table 5.1 (USEPA, 2001) tables in **Appendix I** through **K**.

Toxicity Information for Carcinogenic Effects

Potential carcinogenic effects are quantified as oral CSFs, inhalation CSFs, or inhalation IURs that convert estimated exposures directly to incremental lifetime carcinogenic risks.

CSFs and IURs may be derived from the results of chronic animal bioassays, human epidemiological studies, or both. Animal bioassays are usually conducted at dose levels that are much higher than are likely to be encountered in the environment. This design detects possible adverse effects in the relatively small test populations used in the studies. The actual risks from exposure to a potential carcinogen are not likely to exceed the estimated risks and are probably much lower or even zero. USEPA-derived oral and inhalation CSFs are presented in **Appendix I** through **K**.

As was done for oral RfDs, oral CSFs were adjusted from administered dose (oral) to absorbed dose (dermal) to evaluate dermal toxicity. When appropriate, the CSFs were adjusted using oral absorption factors (USEPA, 2004). This adjustment is shown in the RAGS Part D Table 6.1 tables in **Appendix I** through **K**.

Approach for Potential Mutagenic Effects

Consistent with the Cancer Guidelines and Supplemental Guidance (USEPA, 2005a and 2005b), cancer risks for COPCs which act via a mutagenic mode of action (MMOA) were estimated using age-dependent adjustment factors (ADAFs). The calculation of cancer risk using ADAFs is presented in Table**s** 7.3.RME Supplement A and 7.3.CTE Supplement A of **Appendix I** and **J**. As chemical-specific data are not available for trichloroethene and chromium, a default ADAF, as included in the USEPA Region 3 memorandum *Derivation of RBCs for Carcinogens That Act via a Mutagenic Mode of Action and Incorporate Default ADAFs* (USEPA, 2006), was used for the MMOA evaluation. The default ADAF used to adjust the CSFs are 10 for 0-2 year olds, 3 for 2-6 year olds and 6-12 year olds, and 1 for 16-30 year olds. The CSF was multiplied by the appropriate ADAF to derive the age-specific CSF for a receptor to calculate the total carcinogenic risk. There are age-specific CSFs and IURs available for vinyl chloride in USEPA's IRIS database (USEPA, 2012), which were used to calculate the carcinogenic risk for vinyl chloride. Additionally, the exposure factors for children 0–2 years old and 2–6 years old were assumed to be the same as the parameters for a child 0–6 years old, with the exception of the exposure duration, which was instead 2 years and 4 years, respectively. The exposure factors for the adult residential receptor were used for residents 6-16 years old and 16–30 years old, with the exception of the exposure durations, which were 10 years and 14 years, respectively.

Constituents for Which USEPA Toxicity Values Are Not Available

Most of the constituents detected at Sites 1 and 3 have toxicity factors and USEPA RSLs. Detected constituents that did not have RSLs were compared to RSLs for appropriate surrogate constituents during the COPC selection process. Surrogates were selected based on previous recommendations from USEPA Region 3. The surrogates are identified in the RAGS Table 2 series (**Appendix I** through **K**). Lead, which does not have an RSL or appropriate surrogate, is evaluated by USEPA based on blood-lead uptake using a physiologically based pharmakokinetic model called the Integrated Exposure Uptake Biokinetic (IEUBK) Model. As a screening tool, lead is screened against 400 mg/kg in sediment, and 15 μg/L in groundwater and surface water based on residential exposure.

6.1.5 Risk Characterization

Risk characterization combines the results of the previous elements of the risk assessment to evaluate the potential health risks associated with exposure to the COPCs. The risk characterization is then used as an integral component in remedial decision-making and selection of potential remedies or actions, as necessary.

Methods for Estimating Risks

Potential human health risks are discussed independently for carcinogenic and non-carcinogenic constituents because of the different toxicological endpoints, relevant exposure duration, and methods used to characterize risk. Exposure to some constituents may result in both non-carcinogenic and carcinogenic effects (i.e., arsenic), and therefore, these constituents were evaluated in both groups. The methodology used to estimate non-carcinogenic hazards and carcinogenic risks are described below.

Non-carcinogenic Hazard Estimation. Non-carcinogenic health risks are estimated by comparing the calculated exposures to RfDs (or EPCs to RfCs). The calculated intake divided by the RfD (or EPC by the RfC) is equal to the hazard quotient (HQ):

HQ = Intake / RfD (or EPC / RfC)

The intake and RfD represent the same exposure route (i.e., oral intakes are divided by oral RfDs). An HQ that exceeds 1.0 (i.e., intake exceeds the RfD) indicates that there is a potential for adverse health effects associated with exposure to that constituent.

To assess the potential for non-carcinogenic health effects posed by exposure to multiple constituents, an HI approach is used (USEPA, 1986). This approach assumes that non-carcinogenic hazards associated with exposure

to more than one constituent are additive (HI = sum of the HQs). Synergistic or antagonistic interactions between constituents are not considered. The HI may exceed 1.0 even if all of the individual HQs are less than 1. HIs may be added across exposure routes to estimate the total non-carcinogenic health effects to a receptor posed by exposure through multiple routes. An HI greater than 1 indicates that there is some potential for adverse non-carcinogenic health effects associated with exposure to the COPCs, possibly warranting RA. If the HI is greater than 1, separate HIs are calculated for each target organ/effect to determine if the HI for a specific target organ/effect is greater than 1. If the HI for each target organ does not exceed 1, it can be assumed that there is no non-carcinogenic hazard to the receptor above USEPA's acceptable level.

Carcinogenic Risk Estimation. The potential for carcinogenic effects due to exposure to site-related constituents is evaluated by estimating the excess lifetime carcinogenic risk (ELCR). ELCR is the incremental increase in the probability of developing cancer during one's lifetime in addition to the background probability of developing cancer.

Carcinogenic risk for ingestion and dermal exposure is calculated by multiplying the intake by the CSF.

$$ELCR = Intake \times CSF$$

Carcinogenic risk for inhalation exposure is calculated by multiplying the EPC by the URF:

$$ELCR = EPC \times IUR$$

These equations are only valid at low risk levels, levels below 0.01. When the calculated COPC risk is above 0.01, the one-hit equation is used.

$$ELCR = 1 - \exp(-Intake \times CSF)$$

Or for inhalation-

$$ELCR = 1 - \exp(-EPC \times URF)$$

The combined risk from exposure to multiple constituents was evaluated by adding the risks from individual constituents. Risks were also added across the exposure routes if an individual would be exposed through multiple routes.

When a cumulative carcinogenic risk to an individual receptor under the assumed RME exposure conditions at the site exceeds 100 in a million (i.e., 10^{-4} excess carcinogenic risk), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) generally requires RA to reduce risks at the site (USEPA, 1991). If the cumulative risk is less than 10^{-4}, action generally is not required, but may be warranted if a chemical-specific standard (for example, MCL) is exceeded. A risk-based remedial decision could be superseded by the presence of non-carcinogenic impact or environmental impact requiring action at the site.

The results of the risk characterization are presented for each site in Sections 6.2 through 6.4.

6.1.6 Uncertainty Associated with Human Health Assessment

The risk measures used in CERCLA site risk assessments are not fully probabilistic estimates of risk, but are conditional estimates given that a set of assumptions about exposure and toxicity are realized. Thus, it is important to specify the assumptions and uncertainties inherent in the risk assessment to place the risk estimates in proper perspective. The general uncertainties common to all of the study areas are presented below. Specific uncertainties for each of the sites are presented in Sections 6.2 through 6.4.

General Uncertainty in COPC Selection

A comparison of site concentrations to background concentrations was not used to select the COPCs in accordance with USEPA Region 3 guidance. Following the USEPA approach may result in the inclusion of risks that may be associated with background conditions and are not necessarily site-related.

The method used to screen groundwater data for vapor intrusion into indoor building air was very conservative. It most likely results in a greater number of chemicals selected as COPCs than would actually be a concern for the

vapor intrusion exposure pathway. Included in the conservatism is use of maximum detected concentrations from across the site, when it is likely a building would not be built across the full site. Additionally, the screening values used to select the COPCs are based on conservative assumptions.

The detection limits for non-detected constituents were compared with the RSLs to determine if detection limits were above the RSLs and constituents that were not detected could be present at the site at concentrations below the detection limit but above the RSL. The comparison for the two sites indicated that there were a few non-detected VOCs and metals with detection limits above RSLs. However, the majority of the samples have detection limits that were below or only slightly above (within an order of magnitude) the RSLs. There were two groundwater samples collected at Site 3 with elevated detection limits (greater than an order of magnitude above the RSLs) for VOCs (see Section 6.3.5 for more detail). This comparison indicates that there may be additional constituents present at the site at concentrations below the detection limits but slightly above the RSLs (with the exception of the two samples for Site 3, as discussed further in Section 6.3.5). This may result in an under-estimation of risks. However, based on the past site use, it is likely that many of these constituents are not present at the site, and if they are present, the concentrations would be below the detection limits and not at levels of significant concern to human health.

Uncertainty Associated with Exposure Assessment

Uncertainty in the exposure assessment was generally treated with conservative decision rules and assumptions, and therefore the uncertainty likely overestimates actual exposure to COPCs. Several exposure pathways evaluated by this HHRA, such as residential land use and potable use of shallow groundwater, are hypothetical and are not anticipated to occur in the future at Sites 1 and 3. It is not likely that groundwater from the shallow aquifer would ever be used as a potable or industrial water supply because of the availability of better water supplies with respect to both natural water quality and quantity. Most of the exposure factors used for quantification of exposure are generally conservative and reflect worst-case, or upper-bound, assumptions for the exposure.

The percent of a constituent absorbed through the skin is likely to be affected by many parameters, including soil loading, moisture content, organic content, pH, and presence of other constituents. The availability of a constituent for absorption through the skin depends on site-specific fate and transport properties of the chemical species available for eventual absorption. Constituent concentrations, specific properties of the constituent, and the kinetics of constituents being released from sediment all affect the amount of a constituent that is absorbed. These factors contribute to the uncertainty associated with dermal absorption estimates, and make it difficult to quantify the amount of certain constituents absorbed through the skin from soil, and even more for sediment.

Risks associated with ingestion of any wildlife (i.e., deer and turkey) obtained while hunting at Sites 1 and 3 were not quantified in the risk assessment. The wildlife present at these sites could potentially be exposed to contaminated surface water and sediment in Indian Field Creek and its tributaries, leading to bioaccumulation of COPCs. The hunters and their families could ingest these wildlife and be exposed to the COPCs which may have bioaccumulated in the wildlife. Therefore, the risk assessment may underestimate the risks associated with exposure to Sites 1 and 3. It is likely that wildlife would have a larger range than Sites 1 and 3 only, and would only be exposed to the surface water and sediment in Indian Field Creek and its tributaries for only a portion of the time.

Uncertainty Associated with Toxicity Assessment

Uncertainty associated with the non-carcinogenic toxicity factors is included in the toxicity tables for each site (**Appendix I** through **K**). Several UFs were applied to extrapolate dose points from animal studies to humans. These UFs range between 1 and 3,000. Additional modification factors are used on the basis of USEPA's professional judgment. Therefore, there is a high degree of uncertainty in the non-carcinogenic toxicity criteria based on the available scientific data for each constituent. The non-carcinogenic toxicity factors are most likely an overestimate of actual toxicity.

Use of provisional or withdrawn toxicity factors increases the uncertainty of the quantitative hazard and risk estimates. These provisional values were used to provide a quantitative estimate rather than a merely qualitative

risk discussion; however, these values should be interpreted cautiously because USEPA has not approved these toxicity values.

CSFs developed by USEPA represent upper-bound estimates. Carcinogenic risks generated in this assessment should be regarded as an upper-bound estimate of the potential carcinogenic risks rather than an accurate representation of carcinogenic risk. The true carcinogenic risk is likely to be less than the predicted value (USEPA, 1989).

Additional uncertainty lies in the prediction of relative sensitivities of different species of animals and the applicability of animal data to humans.

A large degree of uncertainty is associated with the oral-to-dermal adjustment factors (based on constituent-specific gastrointestinal absorption factors) used to transform the oral RfDs based on administered doses to dermal RfDs based on absorbed doses. It is not known if the adjustment factor results in an underestimate or overestimate of the actual toxicity associated with dermal exposure.

Uncertainty in Risk Characterization

The uncertainties identified in each component of risk assessment ultimately contribute to uncertainty in risk characterization. The addition of risks and HIs across pathways and constituents contributes to uncertainty based on chemical interactions such as additivity, synergism, potentiation, and susceptibility of exposed receptors.

6.2 Site 1 Human Health Risk Assessment

This section presents the HHRA for Site 1 groundwater. Section 6.4 presents the HHRA for the surface water and sediment associated with Sites 1 and 3. The surface water and sediment evaluation for Sites 1 and 3 were combined because both sites feed into the same surface water body and contributions from each site could not be separated. Selection of COPCs, calculation of EPCs, risk characterization (risk estimates), discussion of the site-specific uncertainties in the HHRA, and the HHRA summary are presented below. Methodologies followed for the HHRA are presented in Section 6.1.

6.2.1 Identification of COPCs for Site 1

This subsection includes a summary of the groundwater data evaluated by the HHRA and presents the COPCs selected for further evaluation. A discussion of the site investigations and data collected at Site 1 are presented in Section 3.

Data Summary

Data were evaluated by the quantitative risk assessment to characterize potential current and future risks based on current site conditions. All of the data used in the risk assessment were fully validated and are assumed to represent current conditions. **Table 6-1** lists the groundwater samples that were evaluated for the HHRA. Monitoring wells at Site 1 are screened in the Columbia and Yorktown aquifers. These data were combined for evaluation in the HHRA, since the confining unit is not continuous across the site. Unfiltered groundwater data were used to evaluate construction worker exposure to groundwater. Filtered groundwater inorganic data were used to evaluate residential exposure to groundwater, following USEPA Region 3 guidance (USEPA, 1992) as there was a significant difference (over an order of magnitude) between the filtered and unfiltered sample results for aluminum and iron.

Summary of COPCs

Appendix I, Tables 2.1 through 2.4, present the screening to identify the COPCs for Site 1 groundwater. **Table 6-2** summarizes the constituents that were selected as COPCs for groundwater based on the comparison to tap water RSLs. Five VOCs, nine dissolved inorganics (residential scenario), and ten total inorganics (construction worker scenario) were identified as COPCs for groundwater. Concentrations of total-1,2-DCE, cis-1,2-DCE, and trans-1,2-DCE were screened to identify the COPCs. Both total-1,2-DCE and cis-1,2-DCE were identified as COPCs. Based on the concentrations of cis- and trans-1,2-DCE detected in the groundwater samples, it was assumed that the majority of the 1,2-DCE is in the cis- form, and therefore only cis-1,2-DCE was retained as a COPC (total-1,2-DCE was not carried through the risk assessment as a COPC). The detection limits for the non-detected constituents

were also compared to the screening levels (Table 11.1, **Appendix H**). This comparison was not used to identify COPCs, but the result of the comparison is discussed in the uncertainty assessment in Section 6.1.6.

The groundwater data were also screened against concentrations protective of vapor intrusion into a future residential home. Three VOCs were selected as COPCs for vapor intrusion. The screening levels for the vapor intrusion pathway were calculated as discussed in Section 6.1.2. Table 2.4 Supplement A in **Appendix I** presents the calculation of this screening level. The vapor intrusion exposure pathway was not evaluated further for Site 1 because the Site is a closed landfill, and there will be LUCs in place preventing development of Site 1.

6.2.2 Exposure Assessment for Site 1

A general discussion of exposure assessment is included in Section 6.1.3. The CSM for human health is presented in **Figure 6-1**. Site 1 is a 10-acre landfill located in the northern portion of WPNSTA Yorktown west of Indian Field Creek and north of an unnamed tributary to the creek. Site 1 is generally level and grassy with topography that gently slopes to the west with more pronounced slopes east and south toward Indian Field Creek and the unnamed tributary to Indian Field Creek. The area surrounding the soil-covered landfill is wooded and acts as a riparian buffer for the adjacent Indian Field Creek. Depth to groundwater is approximately between 3 and 10 feet bgs. Groundwater in both the Columbia and Yorktown-Eastover aquifers flows primarily toward Indian Field Creek and its tributary. Indian Field Creek discharges to the York River (approximately 1 mile) downstream of Site 1.

Site 1 was historically used for sand mining activities, resulting in the construction of two borrow pits, which were subsequently filled with waste materials. Between 1965 and 1979, Site 1 was operated as a landfill under a VDEQ Conditional Permit (No. 287) for disposal of solid waste materials in the borrow pits. Disposed waste included asbestos from insulation on steam piping; empty oil, grease, paint, and solvent containers; nitramine-contaminated carbon; household appliances; scrap metal banding; construction debris; tree limbs; lumber, packaging wastes; electrical wires; waste oil; and plastic lens grinding waste. These wastes were estimated at quantities of 17 tons per year (tons/year) for approximately 15 years. In 1979, the landfill was closed except for the disposal of plastic lens grinding residues, which continued for 2 years after the closure of the main landfill. In 1985, the landfill was closed to the receipt of all waste materials.

Appendix I, Table 1, and **Table 6-3** summarize the potentially exposed populations evaluated by this risk assessment. Under current land use conditions, there are no complete exposure pathways for groundwater. Although future site use is expected to remain the same as current site use, unrestricted land use was evaluated, along with potential industrial site use. Therefore, both industrial and residential uses were evaluated. For future land use conditions, it was conservatively assumed that groundwater from the Columbia and Yorktown-Eastover aquifers could be used as a potable water supply, although this is highly unlikely. It was also assumed future construction workers could be exposed to groundwater during excavation activities.

To summarize, future exposure routes include the following:

- **Resident (Adult and Child)—**Ingestion of and dermal contact with shallow groundwater, inhalation of volatile COPCs from shallow groundwater while showering
- **Industrial Worker:** Ingestion of shallow groundwater
- **Construction worker**: Dermal contact with shallow groundwater and inhalation of volatile emissions from shallow groundwater in an open excavation

Calculation of EPCs

Exposure is quantified by estimating the EPCs of COPCs in environmental media and constituent intake by the receptor. EPCs are estimated constituent concentrations that a receptor may contact and are specific to each exposure medium. The approach used to calculate EPCs is presented in Section 6.1.3.

Appendix I presents the EPCs (Tables 3.1 through 3.3) for the COPCs in groundwater. The wells from the center of the VOC contamination plume and area with highest metals concentrations were used to calculate the EPCs. The wells used to calculate the VOC and metals EPCs are identified on **Table 6-1**.

Estimation of Chemical Intakes for Individual Pathways

Chemical intake is the amount of the chemical constituent entering the receptor's body. The media-specific and exposure scenario–specific intake equations and exposure parameter values used in this assessment are provided in **Appendix I**, Tables 4.1.RME and 4.2.RME, and 4.1.CTE and 4.2.CTE, and were discussed in Section 6.1.3.

6.2.3 Toxicity Assessment for Site 1

A discussion of toxicity assessment is provided in Section 6.1.4. USEPA-derived oral and inhalation RfD and RfC information, and associated uncertainty factors and modifying factor values, available for the groundwater COPCs at Site 1 are listed in Tables 5.1 and 5.2 in **Appendix I**. USEPA-derived oral and inhalation carcinogenic slope factors and IURs are listed in Tables 6.1 and 6.2 in **Appendix I**, respectively.

6.2.4 Risk Characterization for Site 1

The results of the risk characterization are presented below by receptor. The risk calculations are presented in **Appendix I**, Tables 7.1.RME through 7.5.RME, and 7.1.CTE through 7.5.CTE. A summary of the RME results is presented in **Table 6-4** and a summary of the CTE results is shown in **Table 6-5**. CTE risks were calculated only when the RME hazards exceeded 1 or the RME carcinogenic risks exceeded 10^{-4}.

Future Adult Resident (Non-carcinogenic Hazard), Tables 9.1.RME and 9.1.CTE, Appendix I

The risk assessment assumed that a future adult resident could be exposed to groundwater through ingestion, and dermal contact and inhalation while showering. Carcinogenic risks were not calculated for an adult resident but were calculated for a lifetime child/adult resident, following USEPA guidance. The RME non-carcinogenic hazard (HI = 1,600) is above the acceptable HI of 1.0. The hazard is primarily associated with trichloroethene (TCE; HI = 1,600), and cis-1,2-DCE (HI = 45. The CTE non-carcinogenic hazard (HI = 620) also exceeds the acceptable HI.

Future Child Resident (Non-carcinogenic Hazard), Tables 9.2.RME and 9.2.CTE, Appendix I

The risk assessment assumed that a future child resident could be exposed to groundwater through ingestion, and dermal contact and inhalation while bathing. Carcinogenic risks were not calculated for a child resident but were calculated for a lifetime child/adult resident, following USEPA guidance.

The RME non-carcinogenic hazard (HI = 3,000) exceeds the acceptable HI of 1.0. The hazard is primarily associated with TCE (2,900) and cis-1,2-DCE (HI = 100),and dissolved cobalt (HI = 2.9). The CTE non-carcinogenic hazard (HI = 1,800) also exceeds the acceptable HI of 1.0.

Future Lifetime Resident (Carcinogenic Risk), Tables 9.3.RME and 9.3.CTE, Appendix I

The risk assessment assumes that a lifetime child/adult resident could be exposed to groundwater through ingestion, and dermal contact and inhalation while bathing. The RME carcinogenic risk (CR = 5.3×10^{-2}) and the CTE carcinogenic risk (CR = 2.5×10^{-2}) are above USEPA's target risk range of 10^{-6} to 10^{-4}. CVOCs (mainly TCE) and arsenic in groundwater are the primary contributors to the estimated carcinogenic risks for groundwater.

Future Industrial Worker, Tables 9.4.RME and 9.4.CTE, Appendix I

The risk assessment assumed that a future industrial worker could be exposed to groundwater used as a potable water supply through ingestion. The RME non-carcinogenic hazard (HI = 370) is above the acceptable HI of 1.0. The hazard is primarily associated with ingestion of cis-1,2-DCE and TCE). The RME carcinogenic risk (CR = 2.9×10^{-3}) exceeds USEPA's target risk range of 1×10^{-6} to 1×10^{-4}. The risk to the future industrial worker is primarily associated with TCE. The CTE non-carcinogenic hazard (HI = 320) exceeds the acceptable HI, and the CTE carcinogenic risk (CR = 9.3×10^{-4}) exceeds USEPA's target risk range.

Future Construction Worker, Table 9.5.RME, Appendix I

The risk assessment assumes that a future construction worker could be exposed to groundwater through dermal contact and inhalation of volatiles during excavation and construction activities. The RME non-carcinogenic hazard (HI = 130) exceeds the acceptable HI of 1.0. The hazard is primarily associated with TCE. The RME carcinogenic risk (3.9×10^{-5}) is within the acceptable risk range of 10^{-6} to 10^{-4}. The CTE non-carcinogenic hazard (HI = 59) also exceeds the acceptable HI of 1.0.

Since the future construction worker could also be exposed to surface water and sediment in Indian Field Creek, the risks calculated for these exposures (Section 6.4) were added to the risks associated with exposure to groundwater in **Table 6-4**. The combined risks associated with exposure to groundwater and sediment (there were no COPCs identified for surface water) are below USEPA's acceptable carcinogenic risk (CR = 6×10^{-8}), but exceed the acceptable non-carcinogenic hazard (HI = 100).

6.2.5 Uncertainty Associated with Site 1 HHRA

The general uncertainties associated with the HHRA are discussed in Section 6.1.6. Below is a discussion of the uncertainties specific to the evaluation of risks associated with the media at Site 4.

The future residential scenario evaluated in the risk assessment is very conservative. It is unlikely that the site will be used for future residential development, and even more unlikely that the groundwater would be used as a future potable water supply.

6.2.6 Site 1 Human Health Risk Summary

The HHRA was conducted to evaluate the potential human health risks associated with exposure to groundwater at Site 1. This baseline risk assessment was conducted to characterize potential current and future human health risks on the basis of potential and unlikely (but conservative) receptor populations and exposure scenarios if no RA is implemented.

Appendix I, Tables 9.1.RME through 9.5.RME and Tables 9.1.CTE through 9.5.CTE summarize the RME and CTE potential hazards and risks to each receptor as described in Section 6.2.4. **Appendix I**, Tables 10.1.RME through 10.5.RME and 10.1.CTE through 10.5.CTE show the receptor scenarios with a total HI greater than 1.0 or total carcinogenic risks greater than 10^{-4}. Constituents that contribute HIs greater than 0.1 or carcinogenic risks greater than 10^{-6} are included in the table (these are considered the COCs based on human health risk).

Estimated carcinogenic risks associated with exposure for future construction workers are within the acceptable risk range. All other exposure scenarios exceed the acceptable non-carcinogenic hazard index of 1.0 and carcinogenic risk range of 10^{-6} to 10^{-4}. The RME non-carcinogenic hazards are primarily associated with TCE, cis-1,2-DCE, and cobalt (the only constituents with individual HIs above 1 for any of the potential receptors). Additional constituents (1,1,2-trichloroethane, arsenic, iron, and manganese) contribute HIs above 0.1, but below 1.0. The carcinogenic risk is primarily associated with TCE, with smaller contributions from arsenic, chromium, and additional chlorinated VOCs between 10^{-6} and 10^{-4}. The CTE scenarios for these potential future receptors also exceed the acceptable non-carcinogenic hazard index of 1.0 or the carcinogenic risk range of 10^{-6} to 10^{-4}. The future residential land use scenario evaluated in this assessment, and the future potable use of groundwater by industrial workers, is very conservative, as it is assumed that land use at the site will not change in the future, and if it did, it is unlikely that the groundwater would be use as a potable water supply.

The vapor intrusion pathway was not further quantified since the site is a former landfill and LUCs will be used to prohibit future development of the site.

6.3 Site 3 Human Health Risk Assessment

This section presents the HHRA for Site 3 groundwater. Section 6.4 presents the HHRA for the surface water and sediment associated with Sites 1 and 3. The surface water and sediment evaluation for Sites 1 and 3 were combined because both sites feed into the same surface water body and contributions from each site could not be separated, therefore, risks associated with surface water and sediment were evaluated together for Sites 1 and 3. Selection of COPCs, calculation of EPCs, risk characterization (risk estimates), discussion of the site-specific uncertainties in the HHRA, and the HHRA summary are presented below. Methodologies followed for the HHRA are presented in Section 6.1.

6.3.1 Identification of COPCs for Site 3

This subsection includes a summary of the groundwater data evaluated by the HHRA and presents the COPCs selected for further evaluation. A discussion of the site investigations and data collected at Site 3 are presented in Section 3.

Data Summary

Data were evaluated by the quantitative risk assessment to characterize potential current and future risks based on current site conditions. All of the data used in the risk assessment were fully validated and are assumed to represent current conditions. **Table 6-6** lists the groundwater samples that were evaluated for the HHRA. Monitoring wells at Site 3 are screened in the Yorktown-Eastover aquifer. Unfiltered groundwater data were used to evaluate construction worker exposure to groundwater. Filtered groundwater inorganic data were used to evaluate residential exposure to groundwater, following USEPA Region 3 guidance (USEPA, 1992), as there was a significant difference (over an order of magnitude) between the filtered and unfiltered sample results for aluminum and iron.

Summary of COPCs

Appendix J, Tables 2.1 through 2.4, present the screening to identify the COPCs for Site 3 groundwater. **Table 6-7** summarizes the constituents that were selected as COPCs based on comparison to tap water RSLs and vapor intrusion from groundwater to indoor air screening values. Five VOCs, six dissolved inorganics (residential scenario), and nine total inorganics (construction worker scenario) were identified as COPCs for groundwater. Concentrations of total-1,2-DCE, cis-1,2-DCE, and trans-1,2-DCE were screened to identify the COPCs. Both total-1,2-DCE and cis-1,2-DCE were identified as COPCs. Based on the concentrations of cis- and trans-1,2-DCE detected in the groundwater samples, it was assumed that the majority of the 1,2-DCE is in the cis- form, and therefore only cis-1,2-DCE was retained as a COPC (total-1,2-DCE was not carried through the risk assessment as a COPC). The detection limits for the non-detected constituents were also compared to the screening levels (Table 11.1, **Appendix J**). This comparison was not used to identify COPCs, but the result of the comparison is discussed in the uncertainty assessment in Section 6.1.6.

The groundwater data were also screened against concentrations protective of vapor intrusion into a future residential home. Three VOCs were selected as COPCs for vapor intrusion. The screening levels for the vapor intrusion pathway were calculated as discussed in Section 6.1.2. Table 2.4 Supplement A in **Appendix J** presents the calculation of this screening level.

6.3.2 Exposure Assessment for Site 3

A general discussion of exposure assessment is included in Section 6.1.3. The CSM for human health is presented in **Figure 6-1**.

Site 3, the Group 16 Magazines Landfill is a two-acre wooded area behind the former Group 16 Magazines located in the northern portion of WPNSTA Yorktown west of Indian Field Creek (**Figure 1-3**). Site 3 is named for its proximity to the Group 16 Magazines; however, the history of this landfill is unrelated to operations at the magazines. Surface water and groundwater flow to the north/northeast toward Indian Field Creek. The area adjacent to Indian Field Creek is covered by woods that act as a riparian buffer for surface water runoff. North and south of Site 3 are two unnamed tributaries that lead into Indian Field Creek.

Although future site use is expected to remain the same as current site use, unrestricted land use was evaluated, along with potential industrial site use. Therefore, both industrial and residential uses were evaluated. For future land use conditions, it was conservatively assumed that groundwater from the Yorktown-Eastover aquifer might be used as a potable water supply, although this is highly unlikely. It was also assumed that future construction workers could be exposed to groundwater during excavation activities.

Appendix J, Table 1, and **Table 6-8** present the potentially exposed populations evaluated in the risk assessment. Under current land use, there are not complete exposure pathways for groundwater. Potential future exposure routes include the following:

- **Resident (adult and child):** ingestion of and dermal contact with shallow groundwater and inhalation of volatile COPCs from shallow water while showering; inhalation of indoor air (vapor intrusion from shallow groundwater into future site building indoor air)
- **Industrial Worker:** Ingestion of shallow groundwater; inhalation of indoor air (vapor intrusion from shallow groundwater into future site building indoor air).

- **Construction worker:** dermal contact with shallow groundwater and inhalation of volatile emissions from shallow groundwater in an open excavation

Calculation of EPCs

Exposure is quantified by estimating the EPCs of COPCs in environmental media and constituent intake by the receptor. EPCs are estimated constituent concentrations that a receptor may contact and are specific to each exposure medium. The approach used to calculate EPCs is presented in Section 6.1.3.

Appendix J presents the EPCs (Tables 3.1 through 3.4) for the COPCs in groundwater. The wells from the center of the contamination plume were used to calculate the EPCs. The wells used to calculate the EPCs are identified on **Table 6-6**.

Estimation of Chemical Intakes for Individual Pathways

Chemical intake is the amount of the chemical constituent entering the receptor's body. The media-specific and exposure scenario–specific intake equations and exposure parameter values used for Site 3 are provided in **Appendix J**, Tables 4.1.RME, 4.2.RME, 4.1.CTE and 4.2.CTE, and were discussed in Section 6.1.3.

6.3.3 Toxicity Assessment for Site 3

A discussion of toxicity assessment is provided in Section 6.1.4. USEPA-derived oral and inhalation RfD and RfC information, and associated uncertainty factors and modifying factor values, available for the groundwater COPCs at Site 3 are listed in Tables 5.1 and 5.2 in **Appendix J**. USEPA-derived oral and inhalation carcinogenic slope factors and IURs are listed in Tables 6.1 and 6.2 in **Appendix J**, respectively.

6.3.4 Risk Characterization for Site 3

The results of the risk characterization are presented below by receptor. The risk calculations are presented in **Appendix J** Tables 7.1.RME through 7.5.RME, and 7.1.CTE through 7.5.CTE. A summary of the RME results is presented in **Table 6-9** and a summary of the CTE results is shown in **Table 6-10**. CTE risks were calculated only when the RME hazards exceeded 1 or the RME carcinogenic risks exceeded 10^{-4}.

Future Adult Resident (Non-carcinogenic Hazard), Tables 9.1.RME and 9.1.CTE, Appendix I

The risk assessment assumed that a future adult resident could be exposed to groundwater through ingestion, and dermal contact and inhalation while showering, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion. Carcinogenic risks were not calculated for an adult resident but were calculated for a lifetime child/adult resident, following USEPA guidance.

The RME non-carcinogenic hazard (HI = 66) is above the acceptable HI of 1.0. The hazards associated with potable use of the water (ingestion, and dermal contact and inhalation while showering) and with inhalation of indoor air from vapor intrusion are each above the acceptable HI. The hazard associated with potable use of the water (HI = 54) is primarily associated with TCE (HI = 18), vinyl chloride (HI = 12), cis-1,2-DCE (HI = 21), and arsenic (HI = 2). The hazard from inhalation of indoor air (HI = 12) is associated with TCE HI = 9), and vinyl chloride (HI = 3). The CTE non-carcinogenic hazard from combined exposure to groundwater (HI = 49) also exceeds the acceptable HI.

Future Child Resident (Non-carcinogenic Hazard), Tables 9.2.RME and 9.2.CTE, Appendix J

The risk assessment assumed that a future child resident could be exposed to groundwater through ingestion, and dermal contact and inhalation while bathing, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion. Carcinogenic risks were not calculated for a child resident but were calculated for a lifetime child/adult resident, following USEPA guidance.

The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 180) is above the acceptable HI of 1.0. The hazards associated with potable use of the water (ingestion, and dermal contact and inhalation while showering) and with inhalation of indoor air from vapor intrusion are each above the acceptable HI. The hazard associated with potable use of the water (HI = 130) is primarily associated with TCE (HI = 42), vinyl chloride (HI = 27), cis-1,2-DCE (HI = 49), arsenic (HI = 5.4), and manganese (HI = 2.7). The hazard from inhalation of indoor

air (HI = 56) is associated with TCE (HI = 41), and vinyl chloride (HI = 16). The CTE non-carcinogenic hazard from combined exposure to groundwater (HI = 99) also exceeds the acceptable HI.

Future Lifetime Resident (Carcinogenic Risk), Tables 9.3.RME and 9.3.CTE, Appendix J

The risk assessment assumes that a lifetime child/adult resident could be exposed to groundwater through ingestion, and dermal contact and inhalation while bathing, and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion.

The RME carcinogenic risk (CR = $2.4x10^{-2}$) associated with exposure to Site 3 groundwater is above USEPA's target risk range of 10^{-6} to 10^{-4}. The risk associated with potable use of the water (ingestion, and dermal contact and inhalation while showering) and with inhalation of indoor air from vapor intrusion are each above the target risk range. The risk associated with potable use of the water (CR = $2.2x10^{-2}$) is primarily associated with vinyl chloride (CR = $2.1x10^{-2}$), TCE (CR = $6.0x10^{-4}$), and arsenic (CR = $5.7x10^{-4}$). The risk from inhalation of indoor air (CR = $2.5x10^{-3}$) is associated with vinyl chloride (CR = $2.2x10^{-3}$) and TCE (CR = $2.3x10^{-4}$). The CTE carcinogenic risk (CR = 9.4 x 10^{-3}) also exceeds the acceptable risk range.

Future Industrial Worker, Tables 9.4.RME and 9.4.CTE, Appendix J

The risk assessment assumed that a future industrial worker could be exposed to groundwater used as a potable water supply through ingestion and inhalation of vapors that have migrated from the groundwater to indoor air through vapor intrusion. The RME non-carcinogenic hazard (HI = 30) is above the acceptable HI of 1.0. The hazards associated with ingestion of potable water and with inhalation of indoor air from vapor intrusion are both above the acceptable HI. The hazard associated with potable use of the water (HI = 16) is primarily associated with vinyl chloride (HI = 3.7), TCE (HI = 4.0), and cis-1,2-DCE (HI = 6.8). The hazard from inhalation of indoor air (HI = 14) is associated with TCE (HI = 12) and vinyl chloride (HI = 2.5). The RME carcinogenic risk (CR = $3.4x10^{-3}$) exceeds USEPA's target risk range of $1x10^{-6}$ to $1x10^{-4}$. The risk associated with potable use of the water and with inhalation of indoor air from vapor intrusion are both above the target risk range. The risk associated with potable use of the water (CR = $3.0x10^{-3}$) is primarily associated with vinyl chloride (CR = $2.8x10^{-3}$), TCE (CR = $3.3x10^{-5}$), and arsenic (CR = $1.3x10^{-4}$). The risk from inhalation of indoor air (CR = $4.1x10^{-4}$) is associated with vinyl chloride (CR = $3.9x10^{-4}$) and TCE (CR = $1.7x10^{-5}$). The CTE non-carcinogenic hazard (HI = 16) exceeds the acceptable HI, and the CTE carcinogenic risk ($1.1x10^{-3}$) also exceeds USEPA's target risk range.

Future Construction Worker, Tables 9.5.RME and 9.5.CTE, Appendix J

The risk assessment assumes that a future construction worker could be exposed to groundwater through dermal contact and inhalation of volatiles during excavation and construction activities.

The RME non-carcinogenic hazard associated with exposure to groundwater (HI = 3.1) exceeds the acceptable HI of 1.0, however, there are no individual COPCs or target organ/effects with His exceeding 1.0. The CTE non-carcinogenic hazard associated with exposure to groundwater (HI = 1.6) also exceeds the acceptable HI of 1.0.

The RME carcinogenic risk (1.7×10^{-5}) is within the acceptable risk range of 10^{-6} to 10^{-4}.

Since the future construction worker could also be exposed to surface water and sediment in Indian Field Creek, the risks calculated for these exposures (Section 6.4) were added to the risks associated with exposure to groundwater in **Table 6-9**. The combined risks associated with exposure to groundwater and sediment (there were no COPCs identified for surface water) are below USEPA's acceptable levels (HI = 3.1 with no individual COPCs or target organ/effects above 1, CR = 1.6×10^{-5})

6.3.5 Uncertainty Associated with Site 3 HHRA

The general uncertainties associated with the HHRA are discussed in Section 6.1.6. Below is a discussion of the uncertainties specific to the evaluation of risks associated with Site 3 groundwater.

The detection limits for non-detected constituents were compared with the RSLs to determine if detection limits were above the RSLs and constituents that were not detected could be present at Site 3 at concentrations below the detection limit but above the RSL. The comparison indicated that the majority of the samples have detection limits that are below or only slightly above (within an order of magnitude) the RSLs. However, there were two

groundwater samples collected at Site 3 with elevated detection limits (greater than an order of magnitude above the RSLs) for VOCs. The detection limits for these two samples were elevated because the samples needed to be diluted prior to analysis due to the high concentrations of VC, cis-1,2-DCE, and total 1,2-DCE. It is possible that additional VOCs are present in these samples at concentrations exceeding the RSLs, since the highest concentrations detected at Site 3 were detected in these samples. However, the risk assessment already indicates unacceptable risks associated with VOCs in groundwater at Site 3; therefore, additional VOCs could increase the risks, but would not change the results of the HHRA.

The future residential scenario evaluated in the risk assessment is very conservative. It is unlikely that the site will be used for future residential development, and even more unlikely that the Yorktown-Eastover aquifer groundwater would be used as a future potable water supply.

6.3.6 Site 3 Human Health Risk Summary

The HHRA was conducted to evaluate the potential human health risks associated with exposure to groundwater at Site 3. This baseline risk assessment was conducted to characterize potential current and future human health risks on the basis of potential and unlikely (but conservative) receptor populations and exposure scenarios if no RA is implemented.

Appendix J, Tables 9.1.RME through 9.5.RME and Tables 9.1.CTE through 9.5.CTE summarize the RME and CTE potential hazards and risks to each receptor as described in Section 6.3.4. **Appendix J**, Tables 10.1.RME through 10.5.RME and 10.1.CTE through 10.5.CTE show the receptor scenarios with a total HI greater than 1.0 or total carcinogenic risks greater than 10^{-4}. Constituents that contribute HIs greater than 0.1 or carcinogenic risks greater than 10^{-6} are included in the table (these are considered the COCs based on human health risk).

The future construction worker RME non-carcinogenic hazard associated with exposure to groundwater exceeds the acceptable HI of 1.0; however, there are no individual COPCs or target organ/effects with HIs exceeding 1.0. The CTE non-carcinogenic hazard is also above the acceptable HI of 1.0; however, there are not target organ/ effects with HIs exceeding 1.0. The future construction worker RME carcinogenic risk (1.7×10^{-5}) is within the acceptable risk range of 10^{-6} to 10^{-4}.

All estimated non-carcinogenic hazards and carcinogenic risks associated with future residential and industrial receptors exposed to groundwater at Site 3 exceeded acceptable levels. The RME non-carcinogenic hazards are primarily associated with TCE, cis-1,2-DCE, vinyl chloride, arsenic, and manganese (the only constituents with individual HIs above 1 for any of the potential receptors). The carcinogenic risk is primarily associated with vinyl chloride, TCE, and arsenic. The CTE scenarios for these potential future receptors also exceed the acceptable non-carcinogenic hazard index of 1.0 or the carcinogenic risk range of 10^{-6} to 10^{-4}. The future residential land use scenario evaluated in this assessment is very conservative because it is assumed that land use will not change in the future, and if it did, it is unlikely that the Yorktown-Eastover aquifer groundwater would be used as a potable water supply.

6.4 Human Health Risk Assessment for Surface Water and Sediment

This section presents the HHRA for Sites 1 and 3 surface water and sediment. Selection of COPCs, calculation of EPCs, risk characterization (risk estimates), discussion of the site-specific uncertainties in the HHRA, and the HHRA summary are presented below. Methodologies followed for the HHRA are presented in Section 6.1.

6.4.1 Identification of Surface Water and Sediment COPCs

This subsection includes a summary of the surface water and sediment data evaluated by the HHRA and presents the COPCs selected for further evaluation. A discussion of the site investigations and surface water and sediment data collected at Sites 1 and 3 are presented in Section 5.

Data Summary

Data were evaluated in the quantitative risk assessment to characterize potential current and future risks based on current site conditions. All of the data used in the risk assessment were fully validated and are assumed to represent current conditions. **Table 6-11** lists the surface water and sediment samples that were evaluated for the HHRA. Unfiltered surface water data were used to evaluate exposure to the surface water for all receptors, as potential receptors would be expected to be exposed directly to the surface water in the creek and tributary.

Summary of COPCs

Appendix K, Tables 2.1 and 2.2, present the screening to identify the COPCs for the surface water and sediment. No COPCs were selected for surface water. As shown on **Table 6-12**, arsenic and chromium were identified as COPCs for sediment. The detection limits for the non-detected constituents were also compared to the screening levels (Tables 11.1and 11.2, **Appendix K**). This comparison was not used to identify COPCs, but the result of the comparison is discussed in the uncertainty assessment in Section 6.1.6.

6.4.2 Exposure Assessment for Sediment

A general discussion of exposure assessment is included in Section 6.1.3. The CSM for human health is presented in **Figure 6-1**.

Surface water runoff from Sites 1 and 3 drains towards Indian Field Creek and the unnamed tributary, which flows into Indian Field Creek. Additionally, shallow groundwater from Sites 1 and 3, flows from the sites towards Indian Field Creek. The onsite portions of Indian Field Creek and the un-named tributary are within a restricted area of WPNSTA and are secured with locked wire gates. In addition, this area is located inside an area encumbered by the ESQD and cannot be developed for real estate purposes. Currently there are no activities at Sites 1 and 3, although WPNSTA personnel may hunt on the property during deer hunting season.

Appendix I and J, Table 1 and **Appendix K** Table 6-13 summarize the potentially exposed populations evaluated for surface water and sediment. As access to the site is restricted, potential current receptors exposed to surface water and sediment (addressed together for both sites) are assumed to be current/future adult and adolescent trespassers/visitors. Potential future construction work at the site could result in construction worker exposure to the surface water and sediment. As there were not COPCs identified for the surface water, only exposure to sediment was quantified.

Calculation of EPCs

Exposure is quantified by estimating the EPCs of COPCs in environmental media and constituent intake by the receptor. EPCs are estimated constituent concentrations that a receptor may contact and are specific to each exposure medium. The approach used to calculate EPCs is presented in Section 6.1.3.

Appendix K presents the RME EPCs (Table 3.1) for the COPCs in sediment.

Estimation of Chemical Intakes for Individual Pathways

Chemical intake is the amount of the chemical constituent entering the receptor's body. The media-specific and exposure scenario–specific intake equations and exposure parameter values used in this assessment are provided in **Appendix K**, Table 4.1.RME.

6.4.3 Toxicity Assessment for Surface Water and Sediment

A discussion of toxicity assessment is provided in Section 6.1.4. USEPA-derived oral and inhalation RfD and RfC information, and associated uncertainty factors and modifying factor values, available for the sediment COPCs are listed in Tables 5.1 and 5.2 in **Appendix K**. USEPA-derived oral and inhalation carcinogenic slope factors and IURs are listed in Tables 6.1 and 6.2 in **Appendix K**, respectively.

6.4.4 Risk Characterization for Sediment

The results of the risk characterization are presented below by receptor. The risk calculations are presented in **Appendix K**, Tables 7.1.RME through 7.3.RME. A summary of the RME results is presented in **Tables 6-4 and 6-9**.

CTE risks were not calculated because the RME hazards were less than 1 and the RME carcinogenic risks were less than 10^{-4}.

Current/Future Trespasser/Visitor (Adult), Table 9.1.RME, Appendix K

The risk assessment assumes that a current/future adult trespasser/visitor could be exposed to sediment via incidental ingestion and dermal absorption. The RME non-carcinogenic hazard associated with exposure to sediment (HI = 0.04) is less than the acceptable HI of 1.0. The RME carcinogenic risk (CR = 2.1×10^{-6}) is within the acceptable risk range of 10^{-6} to 10^{-4}.

Current/Future Trespasser/Visitor (Adolescent), Table 9.2.RME, Appendix K

The risk assessment assumes that a current/future adolescent trespasser/visitor could be exposed to sediment via incidental ingestion and dermal absorption. The RME non-carcinogenic hazard associated with exposure to sediment (HI = 0.04) is less than the acceptable HI of 1.0. The RME carcinogenic risk (CR = 9.4×10^{-7}) is below the acceptable risk range of 10^{-6} to 10^{-4}.

Future Construction Worker, Table 9.3.RME, Appendix K

The risk assessment assumes that a future construction worker could be exposed to sediment through ingestion and dermal contact. The RME non-carcinogenic hazard associated with exposure to sediment (HI = 0.005) is less than the acceptable HI of 1.0. The RME carcinogenic risk (CR = 6.4×10^{-8}) is less than the acceptable risk range of 10^{-6} to 10^{-4}.

6.4.5 Uncertainty Associated with Surface Water and Sediment HHRA

The general uncertainties associated with the HHRA are discussed in Section 6.1.6.

6.4.6 Surface Water and Sediment Human Health Risk Summary

The HHRA was conducted to evaluate the potential human health risks associated with surface water and sediment at Sites 1 and 3. This baseline risk assessment was conducted to characterize potential current and future human health risks on the basis of potential receptor populations and exposure scenarios if no RA is implemented.

Appendix K, Tables 9.1.RME through 9.3.RME summarize the RME potential hazards and risks to each receptor as described in Section 6.4.4. No COPCs were identified for surface water samples from Sites 1 and 3. Estimated non-carcinogenic hazards and carcinogenic risks associated with exposure to sediment for all potential current or future receptors are less than or within the acceptable risk range.

TABLE 6-1

Summary of Data Quantitatively Used in HHRA

Site 1

NWS Yorktown

Medium	Date of Sampling	Sample Location	Sample	Parameters
Groundwater				
	3/16/2009	YS01-GW004	YS01-GW04-0309[2, 3]	VOCs, Total Metals, Dissolved Metals
	3/16/2009	YS01-GW004A	YS01-GW04A-0309[2, 3]	VOCs, Total Metals, Dissolved Metals
	3/10/2009	YS01-GW005	YS01-GW05-03093[3]	VOCs, Total Metals, Dissolved Metals
	3/10/2009	YS01-GW005A	YS01-GW05A-0309[3]	VOCs, Total Metals, Dissolved Metals
	3/13/2009	YS01-GW012	YS01-GW12-0309	VOCs, Total Metals, Dissolved Metals
	3/12/2009	YS01-GW012A	YS01-GW12A-0309	VOCs, Total Metals, Dissolved Metals
	3/12/2009	YS01-GW012A	YS01-GW12AP-0309[1]	VOCs, Total Metals, Dissolved Metals
	3/9/2009	YS01-GW013	YS01-GW13-0309	VOCs, Total Metals, Dissolved Metals
	3/9/2009	YS01-GW013A	YS01-GW13A-0309	VOCs, Total Metals, Dissolved Metals
	3/13/2009	YS01-GW014	YS01-GW14-0309	VOCs, Total Metals, Dissolved Metals
	3/12/2009	YS01-GW017	YS01-GW17-0309	VOCs, Total Metals, Dissolved Metals
	3/11/2009	YS01-GW018	YS01-GW18-0309	VOCs, Total Metals, Dissolved Metals
	3/11/2009	YS01-GW019	YS01-GW19-0309	VOCs, Total Metals, Dissolved Metals
	3/12/2009	YS01-GW021	YS01-GW21-0309[3]	VOCs, Total Metals, Dissolved Metals
	3/16/2009	YS01-GW022	YS01-GW22-0309[2, 3]	VOCs, Total Metals, Dissolved Metals
	3/16/2009	YS01-GW022	YS01-GW22P-0309[1, 2, 3]	VOCs, Total Metals, Dissolved Metals
	3/10/2009	YS01-GW023	YS01-GW23-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/10/2009	YS01-GW024	YS01-GW24-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/10/2009	YS01-GW025	YS01-GW25-0309	VOCs, Total Metals, Dissolved Metals

Notes:

VOCs - Volatile organic constituents

[1] Duplicate of sample listed above

[2] Sample included in VOC plume data set used to calculate exposure point concentrations.

[3] Sample included in metals plume data set used to calculate exposure point concentrations.

TABLE 6-2

Summary of Chemicals of Potential Concern for the Baseline Risk Assessment

Site 1

NWS Yorktown

Columbia and Yorktown-Eastover Aquifer - Tap Water	
1,1,2-Trichloroethane	Aluminum, Dissolved
Chloroform	Arsenic, Dissolved
cis-1,2-Dichloroethene**	Cadmium, Dissolved*
Trichloroethene	Chromium, Dissolved
Vinyl chloride	Cobalt, Dissolved
	Iron, Dissolved
	Manganese, Dissolved
	Selenium, Dissolved
	Zinc, Dissolved

Columbia and Yorktown-Eastover Aquifer - Water Vapors at Showerhead and Excavation Pit	
1,1,2-Trichloroethane	Trichloroethene
Chloroform	Vinyl chloride
cis-1,2-Dichloroethene	

Columbia and Yorktown-Eastover Aquifer - Water in Excavation Pit	
1,1,2-Trichloroethane	Cadmium
Chloroform	Chromium
cis-1,2-Dichloroethene**	Cobalt
Trichloroethene	Iron
Vinyl chloride	Manganese
Aluminum	Vanadium
Antimony	Zinc
Arsenic	

Columbia and Yorktown-Eastover Aquifer - Vapor Intrusion Into Indoor Air	
cis-1,2-Dichloroethene	Vinyl chloride
Trichloroethene	

*Although dissolved cadmium was identified as a COPC, it was not detected in any of the wells included in the metals data set, and therefore, risks associated with cadmium were not quantified in the risk assessment.

TABLE 6-3
Potentially Complete Human Health Exposure Pathways
Conceptual Site Model
Site 1
NWS Yorktown

Land Use	Media	Potentially Exposed Populations	Exposure Route (Human Health)	Pathway Selected for Evaluation	Rationale
Current/Future					
Trespasser/Visitor	Surface Water	Residents - Adults and Adolescents	Ingestion and dermal contact	Yes	Trespassers/visitors could contact surface water in Indian Field Creek.
	Sediment	Residents - Adults and Adolescents	Ingestion and dermal contact	Yes	Trespassers/visitors could contact sediment.
Residential or Industrial	Surface Water	Construction Worker	Ingestion and dermal contact	Yes	Construction workers could contact surface water in Indian Field Creek.
	Sediment		Ingestion and dermal contact	Yes	Construction workers could contact sedimeny in Indian Field Creek.
Future					
Residential	Columbia and Yorktown-Eastover Aquifer - Tap Water	Residents - Adults and Children	Ingestion and dermal contact	Yes	Groundwater is not currently used on-site as a water supply and the site is not expected to be developed for residential use; however, a future residential scenario is included for a conservative evaluation of unrestricted land use.
	Columbia and Yorktown-Eastover Aquifer - Water Vapors at Showerhead	Residents - Adults	Inhalation	Yes	Although unlikely, groundwater will be evaluated for use as a future potable water supply. Children assumed to bathe and not shower, therefore, inhalation exposure not as great for a child as that for adult.
	Columbia and Yorktown-Eastover Aquifer - Vapor Intrusion to Indoor Air	Residents - Adults and Children	Inhalation	No	The site is a landfill and will have land use controls in place, a residential structure will not be constructed on top of the landfill. However, this pathway was evaluated during the COPC screening step.
Residential or Industrial	Columbia and Yorktown-Eastover Aquifer - Tap Water	Industrial Worker	Ingestion	Yes	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
	Columbia and Yorktown-Eastover Aquifer - Water Vapors at Showerhead		Inhalation	No	Industrial workers not expected to take a significant number of showers/baths at workplace.
	Columbia and Yorktown-Eastover Aquifer - Vapor Intrusion to Indoor Air			No	The site is a landfill and will have land use controls in place, an industrial structure will not be constructed on top of the landfill. However, this pathway was evaluated during the COPC screening step.
	Columbia and Yorktown-Eastover Aquifer - Excavation Pit	Construction Worker	Dermal contact	Yes	Construction worker may contact groundwater in an excavation during excavation and construction activities.
	Columbia and Yorktown-Eastover Aquifer - Volatilization from Water in Excavation Pit		Inhalation	No	Construction worker may inhale volatiles from groundwater in an excavation during excavation and construction activities.

TABLE 6-4
Summary of RME Cancer Risks and Hazard Indices
Site 1
NWS Yorktown

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$ and $<10^{-4}$	Chemicals with Cancer Risks $>10^{-6}$ and $<10^{-5}$	Hazard Index	Chemicals with HI>1	Chemicals with HI>0.1 and <1
Future Resident Adult	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				1.0E+03	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved, Manganese-dissolved
		Dermal Contact	N/A				1.7E+02	cis-1,2-Dichloroethene, Trichloroethene	
		Inhalation/Shower	N/A				4.3E+02	Trichloroethene	1,1,2-Trichloroethane
		Total	N/A				1.6E+03	cis-1,2-Dichloroethene, Trichloroethene	1,1,2-Trichloroethane, Arsenic-dissolved, Cobalt-dissolved, Manganese-dissolved
Future Resident Child	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				2.4E+03	cis-1,2-Dichloroethene, Trichloroethene, Cobalt-dissolved	Arsenic-dissolved, Iron-dissolved, Manganese-dissolved
		Dermal Contact	N/A				3.8E+02	cis-1,2-Dichloroethene, Trichloroethene	
		Inhalation/Shower	N/A				2.4E+02	Trichloroethene	1,1,2-Trichloroethane
		Total	N/A				3.0E+03	cis-1,2-Dichloroethene, Trichloroethene, Cobalt-dissolved	1,1,-Trichloroethene, Arsenic-dissolved, Iron-dissolved, Manganese-dissolved
Future Resident Adult/Child	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	3.9E-02	Trichloroethene	Vinyl Chloride, Arsenic-dissolved, Chromium-dissolved		N/A		
		Dermal Contact	6.3E-03	Trichloroethene		Vinyl Chloride	N/A		
		Inhalation/Shower	7.8E-03	Trichloroethene		Vinyl Chloride	N/A		
		Total	5.3E-02	Trichloroethene	Vinyl Chloride, Arsenic-dissolved, Chromium-dissolved	1,1,2-Trichloroethane,	NA		

TABLE 6-4
Summary of RME Cancer Risks and Hazard Indices
Site 1
NWS Yorktown

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5} and <10^{-4}	Chemicals with Cancer Risks >10^{-6} and <10^{-5}	Hazard Index	Chemicals with HI>1	Chemicals with HI>0.1 and <1
Future Industrial Worker - Adult	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	2.9E-03	Trichloroethene	Arsenic, Dissolved	Vinyl chloride, Chromium-dissolved	3.7E+02	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved
		Dermal Contact	N/A				N/A		
		Inhalation	N/A				N/A		
		Total	2.9E-03	Trichloroethene	Arsenic, Dissolved	Vinyl chloride, Chromium-dissolved	3.7E+02	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved
Future Construction Worker - Adult	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				N/A		
		Dermal Contact	3.4E-05		Trichloroethene		1.0E+02	Trichloroethene	cis-1,2-Dichloroethene
		Inhalation	4.8E-06		Trichloroethene		2.8E+01	Trichloroethene	cis-1,2-Dichloroethene
		Total	3.9E-05		Trichloroethene		1.3E+02	Trichloroethene	cis-1,2-Dichloroethene
	Sediment	Ingestion	5.9E-08				3.7E-03		
		Dermal Contact	4.8E-09				1.5E-03		
		Inhalation	N/A				N/A		
		Total	6.4E-08				5.2E-03		
	All Media	Total	3.9E-05		Trichloroethene		1.3E+02	Trichloroethene	cis-1,2-Dichloroethene
Current/Future Trespasser/Visitor- Adult	Sediment	Ingestion	1.5E-06				5.6E-03		
		Dermal Contact	6.0E-07				2.9E-02		
		Inhalation/Shower	N/A				N/A		
		Total	2.1E-06				3.5E-02		
Current/Future Trespasser/Visitor-Adolescent	Sediment	Ingestion	7.9E-07				7.7E-03		
		Dermal Contact	1.5E-07				2.9E-02		
		Inhalation/Shower	N/A				N/A		
		Total	9.4E-07				3.6E-02		

N/A - Not applicable, pathway incomplete.

TABLE 6-5
Summary of CTE Cancer Risks and Hazard Indices
Site 1
NWS Yorktown

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5} and <10^{-4}	Chemicals with Cancer Risks >10^{-6} and <10^{-5}	Hazard Index	Chemicals with HI>1	Chemicals with HI>0.1 and <1
Future Resident Adult	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				4.8.E+02	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved
		Dermal Contact	N/A				7.4.E+01	cis-1,2-Dichloroethene, Trichloroethene	
		Inhalation/Shower	N/A				6.1.E+01	Trichloroethene	
		Total	N/A				6.2.E+02	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved
Future Resident Child	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				1.6.E+03	cis-1,2-Dichloroethene, Trichloroethene, Cobalt-dissolved	Arsenic-dissolved, Manganese-dissolved
		Dermal Contact	N/A				1.5.E+02	cis-1,2-Dichloroethene, Trichloroethene	
		Inhalation/Shower	N/A				1.1.E-03		
		Total	N/A				1.8.E+03	cis-1,2-Dichloroethene, Trichloroethene, Cobalt-dissolved	Arsenic-dissolved, Manganese-dissolved
Future Resident Adult/Child	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	2.0.E-02	Trichloroethene	Vinyl chloride, Arsenic-dissolved, Chromium-dissolved		N/A		
		Dermal Contact	2.2.E-03	Trichloroethene		Vinyl chloride	N/A		
		Inhalation/Shower	2.3.E-03	Trichloroethene			N/A		
		Total	2.5.E-02	Trichloroethene	Vinyl chloride, Arsenic-dissolved, Chromium-dissolved		NA		
Future Industrial Worker - Adult	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	9.3.E-04	Trichloroethene		Arsenic-dissolved, Vinyl chloride	3.2.E+02	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved
		Dermal Contact	N/A				N/A		
		Inhalation	N/A				N/A		
		Total	9.3.E-04	Trichloroethene		Arsenic-dissolved, Vinyl chloride	3.2.E+02	cis-1,2-Dichloroethene, Trichloroethene	Arsenic-dissolved, Cobalt-dissolved
Future Construction Worker - Adult	Columbia and Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				N/A		
		Dermal Contact	1.9.E-05		Trichloroethene		5.9.E+01	Trichloroethene	cis-1,2-Dichloroethene
		Inhalation	N/A				N/A		
		Total	1.9.E-05		Trichloroethene		5.9.E+01	Trichloroethene	cis-1,2-Dichloroethene

N/A - Not applicable, pathway incomplete.

TABLE 6-6

Summary of Data Quantitatively Used in HHRA

Site 3

NWS Yorktown

Medium	Date of Sampling	Sample Location	Sample	Parameters
Groundwater				
	3/19/2009	YS03-GW006	YS03-GW06-0309	VOCs, Total Metals, Dissolved Metals
	3/18/2009	YS03-GW008A	YS03-GW08A-0309	VOCs, Total Metals, Dissolved Metals
	3/18/2009	YS03-GW008B	YS03-GW08B-0309	VOCs, Total Metals, Dissolved Metals
	3/18/2009	YS03-GW008B	YS03-GW08BP-0309[1]	VOCs, Total Metals, Dissolved Metals
	3/17/2009	YS03-GW015	YS03-GW15-0309	VOCs, Total Metals, Dissolved Metals
	3/17/2009	YS03-GW015A	YS03-GW15A-0309	VOCs, Total Metals, Dissolved Metals
	3/17/2009	YS03-GW018	YS03-GW18-0309	VOCs, Total Metals, Dissolved Metals
	3/19/2009	YS03-GW019	YS03-GW19-0309[2]	VOCs, Total Metals, Dissolved Metals
	4/6/2009	YS03-GW019A	YS03-GW19A-0409[2]	VOCs, Total Metals, Dissolved Metals
	3/20/2009	YS03-GW020	YS03-GW20-0309	VOCs, Total Metals, Dissolved Metals
	3/20/2009	YS03-GW020A	YS03-GW20A-0309	VOCs, Total Metals, Dissolved Metals
	3/18/2009	YS03-GW021	YS03-GW21-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/19/2009	YS03-GW022	YS03-GW22-0309	VOCs, Total Metals, Dissolved Metals
	3/18/2009	YS03-GW023	YS03-GW23-0309	VOCs, Total Metals, Dissolved Metals
	3/30/2009	YS03-GW024	YS03-GW24-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/20/2009	YS03-GW025	YS03-GW25-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/20/2009	YS03-GW025	YS03-GW25P-0309[1, 2]	VOCs, Total Metals, Dissolved Metals
	3/17/2009	YS03-GW026	YS03-GW26-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/20/2009	YS03-GW027	YS03-GW27-0309[2]	VOCs, Total Metals, Dissolved Metals
	3/19/2009	YS03-GW028	YS03-GW28-0309[2]	VOCs, Total Metals, Dissolved Metals

Notes:

VOCs - Volatile organic constituents

[1] Duplicate of sample listed above

[2] Sample included in plume data set used to calculate exposure point concentrations.

TABLE 6-7

Summary of Chemicals of Potential Concern for the Baseline Risk Assessment

Site 3

NWS Yorktown

Yorktown-Eastover Aquifer - Tap Water	
1,1-Dichloroethane	Aluminum, Dissolved
1,4-Dichlorobenzene	Arsenic, Dissolved
cis-1,2-Dichloroethene*	Iron, Dissolved
Trichloroethene	Manganese, Dissolved
Vinyl chloride	Selenium, Dissolved
	Thallium, Dissolved

Yorktown-Eastover Aquifer - Water Vapors at Showerhead and Excavation Pit	
1,1-Dichloroethane	Trichloroethene
1,4-Dichlorobenzene	Vinyl chloride
cis-1,2-Dichloroethene*	

Yorktown-Eastover Aquifer - Water in Excavation Pit	
1,1-Dichloroethane	Chromium
1,4-Dichlorobenzene	Cobalt
cis-1,2-Dichloroethene*	Iron
Trichloroethene	Manganese
Vinyl chloride	Nickel
Aluminum	Vanadium
Arsenic	Zinc

Vapor Intrusion from Groundwater to Indoor Air
cis-1,2-Dichloroethene*
Trichloroethene
Vinyl chloride

[a] Although 1,2-DCE, cis-1,2-DCE, and trans-1,2-DCE are identified as COPCs, assumes the majority of the 1,2-DCE is in the cis-1,2-DCE form based on the concentrations of cis- and trans-1,2-DCE.

TABLE 6-8
Potentially Complete Human Health Exposure Pathways
Conceptual Site Model
Site 3
NWS Yorktown

Land Use	Media	Potentially Exposed Populations	Exposure Route (Human Health)	Pathway Selected for Evaluation	Rationale
Current/Future					
Trespasser/Visitor	Surface Water	Residents - Adults and Adolescents	Ingestion and dermal contact	Yes	Trespassers/visitors could contact surface water in Indian Field Creek.
	Sediment	Residents - Adults and Adolescents	Ingestion and dermal contact	Yes	Trespassers/visitors could contact sediment.
Residential or Industrial	Surface Water	Construction Worker	Ingestion and dermal contact	Yes	Construction workers could contact surface water in Indian Field Creek.
	Sediment		Ingestion and dermal contact	Yes	Construction workers could contact sedimeny in Indian Field Creek.
Future					
Residential	Yorktown-Eastover Aquifer - Tap Water	Residents - Adults and Children	Ingestion and dermal contact	Yes	Groundwater is not currently used on-site as a water supply and the site is not expected to be developed for residential use; however, a future residential scenario is included for a conservative evaluation of unrestricted land use.
	Yorktown-Eastover Aquifer - Water Vapors at Showerhead	Residents - Adults	Inhalation	Yes	Although unlikely, groundwater will be evaluated for use as a future potable water supply. Children assumed to bathe and not shower, therefore, inhalation exposure not as great for a child as that for adult.
	Yorktown-Eastover Aquifer - Vapor Intrusion to Indoor Air	Residents - Adults and Children	Inhalation	Yes	Future resident could inhale vapors migrating from groundwater in indoor air if future resident constructed on site.
Residential or Industrial	Yorktown-Eastover Aquifer - Tap Water	Industrial Worker	Ingestion	Yes	Although unlikely, groundwater will be evaluated for use as a future potable water supply.
	Yorktown-Eastover Aquifer - Water Vapors at Showerhead		Inhalation	No	Industrial workers not expected to take a significant number of showers/baths at workplace.
	Yorktown-Eastover Aquifer - Vapor Intrusion to Indoor Air			Yes	Future industrial workers could inhale vapors migrating from groundwater into indoor air if future industrial building constructed on site.
	Yorktown-Eastover Aquifer - Excavation Pit	Construction Worker	Dermal contact	Yes	Construction worker may contact groundwater in an excavation during excavation and construction activities.
	Yorktown-Eastover Aquifer - Volatilization from Water in Excavation Pit		Inhalation	No	Construction worker may inhale volatiles from groundwater in an excavation during excavation and construction activities.

TABLE 6-9
Summary of RME Cancer Risks and Hazard Indices
Site 3
NWS Yorktown

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks >10^{-4}	Chemicals with Cancer Risks >10^{-5} and <10^{-4}	Chemicals with Cancer Risks >10^{-6} and <10^{-5}	Hazard Index	Chemicals with HI>1	Chemicals with HI>0.1 and <1
Future Resident Adult	Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				4.4E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride, Arsenic-dissolved	Manganese, Dissolved
		Dermal Contact	N/A				4.3E+00	cis-1,2-Dichloroethene, Trichloroethene	Vinyl chloride
		Inhalation/Shower	N/A				5.6E+00	Trichloroethene	Vinyl chloride
		Inhalation/Indoor Air	N/A				1.2E+01	Trichloroethene, Vinyl chloride	
		Total	N/A				6.6E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride, Arsenic-dissolved	Manganese, Dissolved
Future Resident Child	Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				1.0E+02	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride, Arsenic-dissolved, Manganese-dissolved	Iron-dissolved
		Dermal Contact	N/A				9.9E+00	cis-1,2-Dichloroethene, Trichloroethene	Vinyl chloride, Manganese-dissolved
		Inhalation/Shower	N/A				1.4E+01	Trichloroethene	Vinyl chloride
		Inhalation/Indoor Air	N/A			`	5.6E+01	Trichloroethene, Vinyl chloride	
		Total	N/A				1.8E+02	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride, Arsenic-dissolved, Manganese-dissolved	Iron-dissolved
Future Resident Adult/Child	Yorktown-Eastover Aquifer Groundwater	Ingestion	1.8E-02	Trichloroethene, Vinyl chloride, Arsenic-dissolved			N/A		
		Dermal Contact	3.7E-03	Vinyl chloride	Trichloroethene	Arsenic-dissolved	N/A		
		Inhalation/Shower	3.9E-04	Vinyl chloride	Trichloroethene	1,1-Dichloroethane	N/A		
		Inhalation/Indoor Air	2.5E-03	Vinyl chloride, Trichlorothene			N/A		
		Total	2.4E-02	Trichloroethene, Vinyl chloride, Arsenic-dissolved		1,1-Dichloroethane	N/A		
Future Industrial Worker - Adult	Yorktown-Eastover Aquifer Groundwater	Ingestion	3.0E-03	Vinyl chloride	Trichloroethene, Arsenic-dissolved		1.6E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride	Arsenic-dissolved, Manganese-dissolved
		Dermal Contact	N/A				N/A		
		Inhalation	N/A				N/A		
		Inhalation/Indoor Air	4.1E-04	Vinyl chloride	Trichloroethene		1.4E+01	Trichloroethene, Vinyl chloride	
		Total	3.4E-03	Vinyl chloride	Trichloroethene, Arsenic-dissolved		3.0E+01	cis-1,2-Dichloroethene, Vinyl chloride	Arsenic-dissolved, Manganese-dissolved
Future Construction Worker - Adult	Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				N/A		
		Dermal Contact	1.7E-05		Vinyl chloride		2.5E+00		Trichloroethene, Vinyl chloride, Arsenic, Chromium, Iron,
		Inhalation	5.4E-07				5.4E-01		Trichloroethene
		Total	1.7E-05		Vinyl chloride		3.1E+00	Trichloroethene	Vinyl chloride, Arsenic, Chromium, Iron, Manganese
	Sediment	Ingestion	5.9E-08				3.7E-03		
		Dermal Contact	4.8E-09				1.5E-03		
		Inhalation	N/A				N/A		
		Total	6.4E-08				5.2E-03		
	All Media	Total	1.8E-05				3.1E+00		
Current/Future Trespasser/Visitor- Adult	Sediment	Ingestion	1.5E-06				5.6E-03		
		Dermal Contact	6.0E-07				2.9E-02		
		Inhalation/Shower	N/A				N/A		
		Total	2.1E-06				3.5E-02		
Current/Future Trespasser/Visitor-Adolescent	Sediment	Ingestion	7.9E-07				7.7E-03		
		Dermal Contact	1.5E-07				2.9E-02		
		Inhalation/Shower	N/A				N/A		
		Total	9.4E-07				3.6E-02		

N/A - Not applicable, pathway incomplete.

TABLE 6-10
Summary of CTE Cancer Risks and Hazard Indices
Site 3
NWS Yorktown

Receptor	Media	Exposure Route	Cancer Risk	Chemicals with Cancer Risks $>10^{-4}$	Chemicals with Cancer Risks $>10^{-5}$ and $<10^{-4}$	Chemicals with Cancer Risks $>10^{-6}$ and $<10^{-5}$	Hazard Index	Chemicals with HI>1	Chemicals with HI>0.1 and <1
Future Resident Adult	Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				2.1E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride	Arsenic-dissolved, Manganese-dissolved
		Dermal Contact	N/A				1.9E+00		cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride
		Inhalation/Shower	N/A				2.6E+00	Vinyl chloride	
		Inhalation/Indoor Air	N/A				2.4E+01	Trichloroethene, Vinyl chloride	
		Total	N/A				4.9E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride	Arsenic-dissolved, Manganese-dissolved
Future Resident Child	Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				6.9E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride, Arsenic-dissolved, Manganese-dissolved	
		Dermal Contact	N/A				5.5E+00	cis-1,2-Dichloroethene, Trichloroethene	Vinyl chloride
		Inhalation/Shower	N/A				1.4E+00		Trichloroethene, Vinyl chloride
		Inhalation/Indoor Air	N/A				2.4E+01	Trichloroethene, Vinyl chloride	
		Total	N/A				9.9E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride, Arsenic-dissolved, Manganese-dissolved	
Future Resident Adult/Child	Yorktown-Eastover Aquifer Groundwater	Ingestion	8.0E-03	Trichloroethene, Vinyl chloride, Arsenic-dissolved			N/A		
		Dermal Contact	2.8E-04	Vinyl chloride	Trichloroethene		N/A		
		Inhalation/Shower	1.6E-04	Vinyl chloride	Trichloroethene, 1,1-Dichloroethane		N/A		
		Inhalation/Indoor Air	9.9E-04	Vinyl chloride	Trichloroethene		N/A		
		Total	9.4E-03	Trichloroethene, Vinyl chloride, Arsenic-dissolved	1,1-Dichloroethane		NA		
Future Industrial Worker - Adult	Yorktown-Eastover Aquifer Groundwater	Ingestion	9.5E-04	Vinyl chloride	Arsenic-dissolved	Trichloroethene	1.4E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride	Arsenic-dissolved, Manganese-dissolved
		Dermal Contact	N/A				N/A		
		Inhalation	N/A				N/A		
		Inhalation/Indoor Air	1.3E-04	Vinyl chloride	Trichloroethene		2.2E+00	Trichloroethene, Vinyl chloride	
		Total	1.1E-03	Vinyl chloride	Trichloroethene, Arsenic-dissolved		1.6E+01	cis-1,2-Dichloroethene, Trichloroethene, Vinyl chloride	Arsenic-dissolved, Manganese-dissolved
Future Construction Worker - Adult	Yorktown-Eastover Aquifer Groundwater	Ingestion	N/A				N/A		
		Dermal Contact	8.9E-06			Vinyl chloride	1.4E+00		Trichloroethene, Vinyl chloride, Chromium, Manganese
		Inhalation	2.5E-07				2.7E-01		Trichloroethene
		Total	9.2E-06			Vinyl chloride	1.6E+00		Trichloroethene, Vinyl chloride, Chromium, Manganese

N/A - Not applicable, pathway incomplete.

TABLE 6-11
Summary of Data Quantitatively Used in HHRA
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Medium	Date of Sampling	Sample Location	Sample	Parameters
Surface Water				
	7/23/2009	YS01-SW031	YS01-SW31-0709	VOCs, Total Metals, Dissolved Metals
	7/23/2009	YS01-SW031	YS01-SW31P-0709[1]	VOCs, Total Metals, Dissolved Metals
	7/21/2009	YS01-SW032	YS01-SW32-0709	VOCs, Total Metals, Dissolved Metals
	7/21/2009	YS01-SW033	YS01-SW33-0709	VOCs, Total Metals, Dissolved Metals
	7/24/2009	YS03-SW003	YS03-SW03-0709	VOCs, Total Metals, Dissolved Metals
	7/24/2009	YS03-SW004	YS03-SW04-0709	VOCs, Total Metals, Dissolved Metals
	7/23/2009	YS03-SW005	YS03-SW05-0709	VOCs, Total Metals, Dissolved Metals
	7/23/2009	YS03-SW005	YS03-SW05P-0709[1]	VOCs, Total Metals, Dissolved Metals
	7/22/2009	YS03-SW006	YS03-SW06-0709	VOCs, Total Metals, Dissolved Metals
	7/22/2009	YS03-SW007	YS03-SW07-0709	VOCs, Total Metals, Dissolved Metals
	7/22/2009	YS03-SW008	YS03-SW08-0709	VOCs, Total Metals, Dissolved Metals
	7/22/2009	YS03-SW009	YS03-SW09-0709	VOCs, Total Metals, Dissolved Metals
	7/22/2009	YS03-SW010	YS03-SW10-0709	VOCs, Total Metals, Dissolved Metals
	7/21/2009	YS03-SW011	YS03-SW11-0709	VOCs, Total Metals, Dissolved Metals
	7/21/2009	YS03-SW012	YS03-SW12-0709	VOCs, Total Metals, Dissolved Metals
Sediment				
	7/23/2009	YS01-SD030	YS01-SD30-0709	VOCs, Metals
	7/23/2009	YS01-SD031	YS01-SD31-0709	VOCs, Metals
	7/23/2009	YS01-SD031	YS01-SD31P-0709[1]	VOCs, Metals
	7/21/2009	YS01-SD032	YS01-SD32-0709	VOCs, Metals
	7/21/2009	YS01-SD033	YS01-SD33-0709	VOCs, Metals
	7/24/2009	YS03-SD003	YS03-SD03-0709	VOCs, Metals
	7/24/2009	YS03-SD004	YS03-SD04-0709	VOCs, Metals
	7/23/2009	YS03-SD005	YS03-SD05-0709	VOCs, Metals
	7/23/2009	YS03-SD005	YS03-SD05P-0709[1]	VOCs, Metals
	7/22/2009	YS03-SD006	YS03-SD06-0709	VOCs, Metals
	7/22/2009	YS03-SD007	YS03-SD07-0709	VOCs, Metals
	7/22/2009	YS03-SD008	YS03-SD08-0709	VOCs, Metals
	7/22/2009	YS03-SD009	YS03-SD09-0709	VOCs, Metals
	7/22/2009	YS03-SD010	YS03-SD10-0709	VOCs, Metals
	7/21/2009	YS03-SD011	YS03-SD11-0709	VOCs, Metals
	7/21/2009	YS03-SD012	YS03-SD12-0709	VOCs, Metals

Notes:
VOCs - Volatile organic constituents
[1] Duplicate of sample listed above

TABLE 6-12

Summary of Chemicals of Potential Concern for the Baseline Risk Assessment

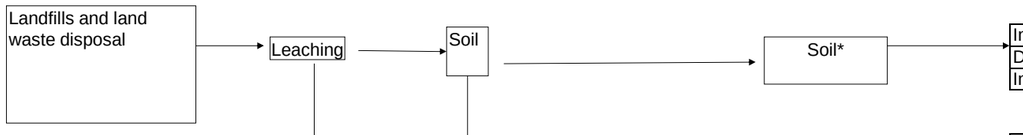
Phase II Remedial Investigation Report, Sites 1 and 3

WPNSTA Yorktown, Yorktown, Virginia

Surface Water No COPCs Identified
Sediment Arsenic Chromium

TABLE 6-13
Potentially Complete Human Health Exposure Pathways
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Land Use	Media	Potentially Exposed Populations	Exposure Route (Human Health)	Pathway Selected for Evaluation	Rationale
Current/Future					
Trespasser/Visitor	Surface Water	Residents - Adults and Adolescents	Ingestion and dermal contact	Yes	Trespassers/visitors could contact surface water in Indian Field Creek.
	Sediment	Residents - Adults and Adolescents	Ingestion and dermal contact	Yes	Trespassers/visitors could contact sediment.
Residential or Industrial	Surface Water	Construction Worker	Ingestion and dermal contact	Yes	Construction workers could contact surface water in Indian Field Creek.
	Sediment		Ingestion and dermal contact	Yes	Construction workers could contact sedimeny in Indian Field Creek.



Primary Source	Primary Release Mechanism	Secondary Source	Secondary Release Mechanism	Exposure Media	Exposure Route	Potential Human Receptors: Current/Future: Trespasser/ Visitor Adult	Current/Future: Trespasser/ Visitor Adolescent	Future: Industrial Worker	Future: Residential Adult	Future: Residential Child	Future: Construction Worker
Landfills and land waste disposal	Leaching	Soil		Soil*	Ingestion	NA	NA	NA	NA	NA	NA
					Dermal Contact	NA	NA	NA	NA	NA	NA
					Inhalation	NA	NA	NA	NA	NA	NA
			Leaching	Groundwater	Ingestion	NA	NA	X	X	X	NA
					Dermal Contact	NA	NA	NA	X	X	X
					Inhalation**	NA	NA	X	X	X	X
		Surface Runoff / Overland Flow		Surface Water***	Ingestion	X	X	NA	NA	NA	X
					Dermal Contact	X	X	NA	NA	NA	X
					Inhalation	NA	NA	NA	NA	NA	NA
				Sediment***	Ingestion	X	X	NA	NA	NA	X
					Dermal Contact	X	X	NA	NA	NA	X
					Inhalation	NA	NA	NA	NA	NA	NA

*Soil and sediment removal/remediation actions have been conducted.
** Foster and Chrostowski Shower Model used for groundwater inhalation during showering.
Concentration in Excavation Trench methodology from the Virginia Voluntary Remediation Program used to calculate concentration in air resulting from volatilization from shallow groundwater in an open excavation for construction workers.
Vapor intrusion from groundwater into indoor air evaluated for Site 3 for industrial worker and resident using Johnson and Ettinger Model. Vapor intrusion risks were not quantified for Site 1, as it is a landfill and will have land use controls in place restricting future development and construction of buildings on the site.
***Because the sites feed into the same surface water bodies, risks associated with surface water and sediment were addressed together for both sites.
NA - Not Applicable or pathway is incomplete
X - Potentially complete exposure pathways

FIGURE 6-1
HHRA CSM for Sites 1 and 3
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

SECTION 7

Ecological Risk Assessment

7.1 Introduction

This section contains a Screening-level Ecological Risk Assessment (SERA), constituting Steps 1 and 2 of the Ecological Risk Assessment (ERA) process, and the first step (Step 3A) of a Baseline Ecological Risk Assessment (BERA) for aquatic and bordering wetland habitats at Sites 1 and 3. Terrestrial habitats were not evaluated as part of this ERA based upon the RAs that have occurred at these sites (these RAs are summarized in Section 2), which have eliminated complete and significant terrestrial ecological exposure pathways.

7.1.1 The Ecological Risk Assessment Process

ERAs are conducted using a tiered, step-wise approach and are punctuated with Scientific Management Decision Points (SMDPs). SMDPs represent points in the ERA process where agreement on conclusions, actions, or methodologies is needed so that the ERA process can continue (or terminate) in a technically defensible manner. The results of the ERA at a particular SMDP are used to determine how the ERA process should proceed, for example, to the next step in the process or directly to a later step. The process continues until a final decision has been reached (i.e., RA if unacceptable risks are identified, or no further action if risks are acceptable). The process can also be iterative if data needs are identified at any step; the needed data are collected and the process starts again at the point appropriate to the type of data collected.

This ERA was conducted in accordance with the *Navy Policy for Conducting Ecological Risk Assessments* (CNO, 1999) and the Navy guidance for implementing this ERA policy (NAVFAC, 2003). The Navy ERA policy and guidance, which describe a process consisting of eight steps organized into three tiers, are conceptually similar to the 8-step ERA process outlined in USEPA ERA guidance for the Superfund program (USEPA, 1997a). For both sets of guidance, Steps 1 and 2 involve conducting a SERA using very conservative assumptions. The BERA represents Steps 3 through 7. The BERA uses more realistic assumptions and site-specific data to refine the risk estimates from the SERA for components that fail the initial screen. Step 8 addresses risk management issues. The major differences between the Navy ERA policy/guidance and the USEPA ERA guidance are:

- The Navy policy/guidance provides clearly defined criteria for exiting the ERA process at specific points
- The Navy policy/guidance divides Step 3 (the first step of the BERA) into two distinct sub-steps (Steps 3A and 3B), with a potential exit point after Step 3A
- The Navy policy/guidance incorporates risk management considerations throughout all tiers of the ERA process

The screening (preliminary) problem formulation is the first step of an ERA and establishes the goals, scope, and focus of the SERA. Step 1 of the ERA process is intended to answer two main questions:

- Do complete exposure pathways exist?; and
- Are sufficient data available to conduct the SERA?

If no complete exposure pathways exist, the ERA process terminates at Step 1 with a conclusion of negligible risk. If one or more complete exposure pathways are known to, or are likely to, exist, the ERA process continues to Step 2 but only evaluates those pathways that have been determined to be critical (ecologically significant). An evaluation of the available data is then conducted to determine if they are adequate to support the SERA. If not, additional data are collected before the ERA process continues. The second step of the ERA process involves conducting a screening exposure assessment, a screening effects assessment, and a screening risk calculation (risk characterization).

The results of the SERA are used to evaluate the potential for unacceptable ecological risks based upon very conservative assumptions. If the results of the SERA suggest that further ecological risk evaluation is warranted, the ERA process proceeds to the BERA (Steps 3 through 7), which is a more detailed phase of the ERA process, for

the pathways, chemicals, receptors, and areas identified in the SERA. As indicated above, the first step of the BERA (Step 3) is divided into two distinct sub-steps in Navy ERA guidance.

Step 3 of the USEPA ERA guidance consists of the following activities (USEPA, 1997a):

- Refinement of the COPCs from the SERA.
- Further characterizing the potential ecological effects of contaminants.
- Refining information on contaminant fate and transport, complete exposure pathways, and receptors potentially at risk.
- Selecting assessment endpoints.
- Refining the conceptual model and risk hypotheses from the SERA.

Step 3A of the Navy policy/guidance (refinement of conservative exposure assumptions) corresponds to the first activity listed above for the USEPA ERA guidance. In Step 3A, a refined evaluation of exposure estimates is conducted using more realistic assumptions and additional methodologies relative to those used in the SERA, which is intended to be a very conservative assessment. Examples of more realistic exposure assumptions include using central tendency (e.g., mean) estimates (rather than maximums) for media concentrations, bioaccumulation factors, and exposure parameters. Examples of additional methodologies include consideration of background concentrations and bioavailability (CNO, 1999; NAVFAC, 2003).

If risk estimates (and their associated uncertainty) are acceptable following Step 3A, the site will meet the conditions of the exit criterion specified in the Navy policy/guidance. If the Step 3A evaluation does not support a determination of acceptable risk within acceptable uncertainty, the site continues to Step 3B.

Step 3B of the Navy policy/guidance (problem formulation) corresponds conceptually to the last four activities listed above for Step 3 of the USEPA ERA guidance. In Step 3B, the preliminary conceptual model from the SERA is refined based upon the results of the Step 3A evaluation to develop a revised list of key receptors, critical exposure pathways, key COPCs, assessment endpoints, measurement endpoints, and risk hypotheses. Based upon the refined conceptual model, the lines of evidence to be used in characterizing risk are determined. Agreement on the refined conceptual model, COPCs, exposure pathways, endpoints, and risk hypotheses constitutes the SMDP at the end of Step 3 in both Navy and USEPA ERA guidance.

Following the completion of Step 3, a decision point is reached with two potential outcomes. If the refined risk estimates are acceptable for each selected assessment endpoint, the investigation proceeds to risk characterization (Step 7) to document this conclusion and the ERA process terminates. If the uncertainties associated with the refined risk estimates are unacceptable and/or the risk estimates indicate that unacceptable risks may exist, site-specific studies might be required and the ERA process continues (Steps 4 through 6). Step 4 is a work planning step where additional site-specific studies are scoped and designed. Step 5 consists of the verification of the field sampling design developed in Step 4 while Step 6 constitutes the site investigation and data analysis phase of the process.

Step 7 consists of the documentation and synthesis of the information and data identified in Steps 1 through 3 (no additional study) or Steps 1 through 6 (additional study). In this step, risk is evaluated and characterized using both quantitative and qualitative methods. Conclusions are made as to whether or not there is a reasonable potential for unacceptable ecological risk, and if there is a potential for ecological risk, the magnitude of that risk. The results of the completed BERA (Step 7) are used to make any necessary risk management decisions (Step 8) related to current or future risks. Possible decisions include:

- There is adequate information to conclude that no unacceptable ecological risks exist. The assessment should stop at Step 7.
- There is adequate information to conclude that ecological risks warrant RA. Whether or not RAs are taken, and the specific actions taken, will depend upon a number of risk management factors such as the results of

any HHRAs and the potential impact of the RA itself on the habitats and biota present. This analysis typically occurs as part of Step 8.

- There is not adequate information to estimate risk or the risk estimate is believed to be too conservative or uncertain to recommend remediation. The assessment should be refined.

7.2 Problem Formulation

Problem formulation establishes the goals, scope, and focus of the ERA. As part of problem formulation, the ecological setting of Sites 1 and 3 is characterized in terms of the habitats and biota known or likely to be present. The types and concentrations of chemicals that are present in ecologically relevant media (surface water, sediment, and sediment pore water) are also described based upon available analytical data. A conceptual model is developed that describes source areas, transport pathways and exposure media, exposure pathways and routes, and receptors. Assessment endpoints, measurement endpoints, and risk hypotheses are developed to evaluate those receptors for which critical exposure pathways exist. The fate, transport, and toxicological properties of the chemicals present on Sites 1 and 3, particularly the potential for bioaccumulation, are also considered during this process.

7.2.1 Environmental Setting

Site 1 is a 10-acre landfill located in the northern portion of WPNSTA Yorktown west of Indian Field Creek and north of an unnamed tributary to the creek (**Figure 1-2**). The Site 1 landfill is generally level, with the eastern portion of the landfill gently sloping to the west and more pronounced slopes on the perimeter of the landfill to the east and south toward Indian Field Creek and its unnamed tributary. The landfill is covered with grasses. The area surrounding the landfill is wooded and acts as a riparian buffer for the adjacent Indian Field Creek. Depth to groundwater is between about 3 and 10 feet bgs and groundwater flows south-southeast toward Indian Field Creek and its tributary. Indian Field Creek discharges to the York River approximately 1 mile downgradient of Site 1.

Site 1 was historically used for sand mining, resulting in the creation of two borrow pits. Between 1965 and 1979, Site 1 was operated as a conditionally permitted landfill for the disposal of solid waste materials within the two borrow pits. Disposed waste included asbestos from insulation on steam piping; empty oil, grease, paint, and solvent containers; nitramine-contaminated carbon; household appliances; scrap metal banding; construction debris; tree limbs; lumber and packaging wastes; electrical wires; waste oil; and plastic lens grinding waste. An estimated 17 tons/year of waste were disposed of at the site for a period of approximately 15 years. In 1979, the landfill was closed except for the disposal of plastic lens grinding residues, which continued for 2 years after the closure of the main landfill. In 1985, the landfill was closed to the receipt of all waste materials.

Review of aerial photos from 1986 shows vegetation being established over much of the site and a soil cover (2 to 8 feet thick) was in place by 1991. A ROD for Site 1 was signed in June 1999 to address soil and surface debris. Groundwater, surface water, and sediment were not addressed in this ROD and are the subject of this RI.

In 1999, a RA to remove metal surface debris and arsenic-contaminated soil was conducted, resulting in the excavation and offsite disposal of 413 tons of waste and soil. An additional soil cover was placed on the landfill using on-base borrow material and the site was re-graded. LUCs prohibiting residential development and disturbance of the soil cover were instituted.

Site 3 is a two-acre former landfill located in the northern portion of WPNSTA Yorktown west of Indian Field Creek and southeast of Site 1. The site consists of young mixed deciduous forest and open field habitats. The area between the site and Indian Field Creek consists of relatively mature upland forest dominated by deciduous tree species and some pines, which acts as a riparian buffer for surface water runoff. Depth to groundwater at Site 3 is between 20 and 30 feet bgs. Surface water and groundwater flow to the northeast toward Indian Field Creek. There appears to be little flow towards the unnamed tributary to Indian Field Creek that occurs just south of Site 1 and north of Site 3.

Site 3 was originally used for sand mining, which created a single borrow pit dug to a depth of about 10 feet bgs. Between 1940 and 1970, Site 3 operated as a landfill. Approximately 90 tons of waste was disposed of in the borrow pit, which reportedly included solvents, sludge from boiler cleaning operations, grease trap wastes, Imhoff tank skimmings (containing oil and grease), and animal carcasses. Test pit investigations performed in 1997 confirmed the presence of scrap metal, 55-gallon metal drums, grease, wax, lumber, banding, concrete blocks, plastic sheeting, and surface debris.

A ROD for Site 3 was signed in June 1999 to address soil and surface debris. Groundwater, surface water, and sediment were not addressed in this ROD and are the subject of this RI. In 1999, the landfill was excavated in its entirety, the area was backfilled with clean soil from an on-base borrow source, and the site was re-graded. This RA resulted in the removal of metal surface debris and the excavation and offsite disposal of 284 tons of PAH-contaminated soil and landfill waste. A technical memorandum demonstrating that no unacceptable human health or ecological risks from exposure to soil and waste remaining at Site 3 (Baker, 2008) was approved by USEPA and VDEQ. An ESD to the ROD was subsequently signed in December 2008 to document that no further action is required to address site soils and waste. LTM of surface water and sediment in Indian Field Creek at Sites 1 and 3 occurred between 2000 and 2005 to further assess VOCs (the primary groundwater COPCs) detected in these media. The 2007 Five-Year Review concluded that the remedy was protective of human health and the environment.

Site 3 is located just west of the downgradient portion of the headwaters of Indian Field Creek, with the main portion of Indian Field Creek beginning just northeast of Site 3 and east of Site 1 (**Figure 1-3**). An unnamed tributary to Indian Field Creek occurs just south of Site 1 and receives surface runoff and groundwater flow from Site 1 and 3. This tributary is intermittent over much of its length, with standing/flowing water regularly occurring beginning at about the midpoint of the Site 1 boundary (**Figure 4-1**).

Indian Field Creek and the eastern portion of the unnamed tributary (where water regularly occurs) are tidal and estuarine, with measured salinities of between 16 and 21 ppt in Indian Field Creek near the sites and of 13 ppt in the unnamed tributary (**Table 7-1**). The pH of the water varies between about 5.5 and 7.5. Substrates are composed mostly of coarse, medium, and fine sand (**Table 7-2**). Total organic carbon (TOC) ranges from less than 1 percent in the unnamed tributary to between 2 and 16 percent in Indian Field Creek and its bordering vegetated wetlands. The pH of the sediment varies from about 4.9 to 7.5. SEM/AVS ratios, a measure of the bioavailability of certain metals (cadmium, copper, lead, mercury, nickel, silver, and zinc), exceed one in three samples near the northeastern portion of Site 3 but sulfides are typically low (near or below detection limits) in the unnamed tributary and the portion of the creek adjacent to and upgradient of Site 3 (**Table 7-2**).

Low areas bordering Indian Field Creek are typically dominated by saltmarsh, with upland forest extending to the marsh edge. Saltmarsh cordgrass (*Spartina alterniflora*) is the dominant vegetation in the marshes adjacent to Sites 1 and 3. Invertebrate species observed and expected in the estuarine aquatic habitat offered by the creek, bordering wetlands, and portions of the unnamed tributary include mussels, marsh periwinkles, fiddler crabs, blue crabs, and various benthic infaunal species. Fish, such as mummichog, are also present in the creek and bordering wetlands, and also likely extend into portions of the unnamed tributary. Indian Field Creek and the surrounding marshes additionally have the potential to support a wide range of avian, mammalian, and reptilian upper trophic level species. Species observed near Sites 1 and 3 include raccoon, great blue heron, belted kingfisher, and osprey. There are no known occurrences of rare, threatened, or endangered species, or sensitive habitats, on or in the immediate vicinity of Sites 1 and 3 based upon previous ecological evaluations of the site.

7.2.2 Summary of Analytical Data

Only samples collected as part of this RI (in 2009) were quantitatively evaluated in this ERA. These include 12 collocated surface water and sediment samples from Indian Field Creek and one collocated surface water and sediment sample from the unnamed tributary. A second sediment sample (YS01-SD30) was collected from the unnamed tributary but there was insufficient surface water present at this location to allow a surface water sample to be collected. Samples at two planned surface water and sediment sampling locations further upstream in the unnamed tributary were not collected due to the lack of surface water and sediment (the substrate was

considered soil). This is considered a data gap and additional samples in this area are recommended prior to completing an FS for groundwater at Site 1 (see Section 7.5.4). It is anticipated that samples will be collected during the rainy season at Site 1 to ensure hydric sediment is present in the channel. Six collocated background surface water and sediment samples collected in December 2007 from the upgradient portions of the Eastern Branch of Felgates Creek as part of the evaluation of Sites 4, 21, and 22, and Sites 8 and 34 (SSA-14), were used to represent background (**Figure 7-1**).

Six sediment pore water samples were also collected at Sites 1 and 3, five from Indian Field Creek and one from the unnamed tributary. All pore water samples were collocated with surface water and sediment sampling locations. A second proposed pore water sampling location in the unnamed tributary (YS01-WN01) was not able to be utilized due to a lack of water near the surface. This is considered a data gap and additional samples are recommended in this area prior to completing the FS for groundwater at Site 1 (see Section 7.5.4). There are no available background pore water data.

The samples used in this ERA are listed in **Table 7-3** and are shown on **Figure 3-3**. Section 3 discusses the field investigation methods that were used to collect these samples. Groundwater data collected as part of this RI were not directly evaluated in this ERA but were considered qualitatively[4]. All of the data collected as part of this RI and used in this ERA were documented as part of the Phase II RI Work Plan (CH2M HILL, 2008). The data collected as part of the previous RI (in 1992 and 1995) were not considered due to their age and because they predated the RAs that have occurred at the sites. Surface water and sediment samples collected in 2000, 2004, and 2005 as part of the LTM program were not considered because they were only sampled for VOCs. Because of the past RAs that have occurred in the terrestrial portions of these sites to address contaminant sources (see Section 2), an evaluation of terrestrial habitats (soil data) is not relevant to this ERA.

7.2.3 Conceptual Model

The conceptual model relates potentially exposed receptor populations with potential source areas based upon physical site characteristics and complete exposure pathways. Important components of the conceptual model are the identification of potential source areas, transport pathways, exposure media, exposure pathways and routes, and receptors. Actual or potential exposures of ecological receptors associated with a site are determined by identifying the most likely, and most important, mechanisms and pathways of contaminant release and transport. A complete exposure pathway has three components: (1) a source of chemicals that results in a release to the environment; (2) a pathway of chemical transport through an environmental medium; and (3) an exposure or contact point for an ecological receptor. **Figure 7-2** illustrates a diagrammatic conceptual model for Sites 1 and 3. Key components of this conceptual model are discussed in the following subsections.

Source Areas

The landfills at Sites 1 and 3 represent the source areas. Removal actions have occurred at each site to address these source areas (see Section 2). The Site 3 landfill was excavated in its entirety, the area was backfilled with clean soil from an on-base borrow source, and the site was re-graded. Thus, the source area at Site 3 has been eliminated and soils are considered a closed medium. While surface debris and some soil were excavated at Site 1, landfill waste has been left in place and there are currently no plans to remove the landfill. However, a soil cover has been placed over the remaining waste at Site 1 and LUCs prohibiting residential development and disturbance of the soil cover are in place to maintain cover integrity. This eliminates direct exposure pathways to waste and soil (terrestrial habitats). It is recommended that additional studies at Site 1 be conducted to confirm that the extent of landfill waste has been sufficiently characterized and that the soil cover is adequate in terms of depth and spatial extent. While these actions have addressed the primary source areas and terrestrial habitats at

[4] Since ecological receptors do not have direct exposure to groundwater, a comparison of groundwater concentrations to surface water screening values is generally only done as a surrogate for potential ecological exposures (which occur when groundwater discharges to sediment pore water and the water column of a water body, or surfaces as a seep) when data for exposure media (pore water, sediment, and surface water) from the receiving water body are not available. Because surface water, sediment, and pore water data are available, there is much less uncertainty associated with evaluating these media directly (since they reflect direct exposures for ecological receptors) rather than evaluating a theoretical exposure scenario using groundwater data, particularly when the available data suggest that the VOC plume has reached the area of the creek.

the sites, groundwater, and past potential transport to adjacent water bodies (Indian Field Creek, including the unnamed tributary), have not yet been directly addressed. These media are the subject of this RI.

Transport Pathways and Exposure Media

A transport pathway describes the mechanisms whereby site-related chemicals, once released, may be transported from a source to ecologically relevant media (such as surface water) where exposures may occur. These transport pathways are shown on **Figure 7-2**.

The primary release mechanisms and transport pathways at the sites include:

- Infiltration, percolation, and leaching of contaminants to groundwater and subsequent discharge to the surface water and sediment of the adjacent creek and unnamed tributary.
- Historical surface runoff to the surface water and sediment of the adjacent creek and unnamed tributary.
- Uptake from the surface water and sediment of the adjacent creek and accumulation in the tissues of aquatic biota.

Concentration gradients from potential source areas through the appropriate pathway(s) are evaluated in order to determine if there are any links between site contamination and potential ecological receptors (habitats and biota).

Exposure media for ecological receptors are typically limited to surface water, surface sediment, and surface soil. Surface soil is not evaluated in this ERA based upon past RAs, which have eliminated these potential exposure pathways. Groundwater is generally considered only as a transport medium since there are no ecological exposures to groundwater until it discharges to a water body. Air is not addressed in this ERA since this medium is not likely to result in significant contributions to total exposures.

Exposure Pathways and Routes

An exposure pathway links a source of contamination with one or more receptors through exposure via one or more media and exposure routes. Exposure, and thus potential risk, can only occur if complete exposure pathways exist. **Figure 7-2** shows the potentially complete exposure pathways to ecological receptors associated with Sites 1 and 3 which include:

- Direct contact with site-related chemicals in the surface water and sediment (including pore water) of Indian Field Creek (including the unnamed tributary) by water column-dwelling aquatic life and benthic organisms.
- Potential ingestion of site-related chemicals via the food chain by avian and mammalian aquatic receptors.
- As discussed previously, there are no complete exposure pathways for terrestrial receptors.

An exposure route describes the specific mechanism(s) by which a receptor is exposed to a chemical present in an environmental medium. The most common exposure routes are dermal contact, direct uptake, ingestion, and inhalation. Unrooted, floating aquatic plants, rooted submerged vascular aquatic plants, and algae may be exposed to chemicals directly from the water or (for rooted plants) from sediment. Aquatic invertebrates may be exposed to chemicals in surface sediment and/or surface water through dermal contact and ingestion.

Animals may be exposed to chemicals through the: (1) inhalation of gaseous chemicals or of chemicals adhered to airborne particulate matter; (2) incidental ingestion of contaminated abiotic media (sediment) during feeding or preening activities; (3) ingestion of contaminated water; (4) ingestion of contaminated plant and/or animal tissues for chemicals that have entered food webs; and/or (5) dermal contact with contaminated abiotic media. These routes, where applicable, are depicted on **Figure 7-2**.

The contribution to the total dose from the inhalation route is generally insignificant for upper trophic level ecological receptors relative to ingestion pathways. Hence, the air pathway is not generally considered for ecological receptors. Exposure to chemicals present in sediment via dermal contact may occur but is unlikely to represent a major exposure pathway for most upper trophic level receptors because fur, feathers, and chitinous exoskeletons minimize transfer of chemicals across dermal tissue. Incidental ingestion of surface sediment during

feeding, preening, or grooming activities is, however, considered in the risk estimates. Direct contact is considered for lower trophic level receptors (benthic invertebrates).

Direct ingestion of drinking water is only considered when the salinity is below 15 parts per thousand (ppt), the approximate toxic threshold for wildlife receptors (Humphreys, 1988). Based upon available data (**Table 7-1**), the salinity in the creek is above this threshold. While the salinity in the unnamed tributary (13 ppt) is just below this threshold, the presence of standing or flowing water is typically transitory in much of this water body. Thus, the surface water in the unnamed tributary is unlikely to be used as a regular source of drinking water for ecological receptors and exposure via direct ingestion of drinking water was not included in this ERA.

Receptors

Because of the complexity of natural systems, it is generally not practical to directly assess the potential impacts to all ecological receptors present within an area. Therefore, specific receptor species (e.g., great blue heron) or species groups (e.g., fish) are often selected as surrogates to evaluate potential risks to larger components of the ecological community (guilds; such as piscivorous birds) used to represent the assessment endpoints (e.g., survival and reproduction of piscivorous birds). Selection criteria typically include those species that:

- Are known to occur, or are likely to occur, in the area.
- Have a particular ecological, economic, or aesthetic value.
- Are representative of taxonomic groups, life history traits, and/or trophic levels in the habitats present for which complete exposure pathways are likely to exist.
- Can, because of toxicological sensitivity or potential exposure magnitude, be expected to represent potentially sensitive populations.

The following upper trophic level receptor species have been chosen for exposure modeling based upon the criteria listed above:

- Belted kingfisher (*Ceryle alcyon*) - aquatic avian piscivore/invertivore
- Great blue heron (*Ardea herodias*) - wading (shallow water) semi-aquatic avian piscivore
- Mallard (*Anas platyrhynchos*) - semi-aquatic avian omnivore
- Marsh wren (*Cistothorus palustris*) - semi-aquatic avian insectivore
- Mink (*Mustela vison*) - semi-aquatic mammalian piscivore
- Muskrat (*Ondatra zibethicus*) - semi-aquatic mammalian herbivore
- Raccoon (*Procyon lotor*) - semi-aquatic mammalian omnivore

Upper trophic level receptor species quantitatively evaluated in this ERA were limited to birds and mammals, the taxonomic groups with the most available information regarding exposure and toxicological effects. Lower trophic level receptor species were evaluated based upon those taxonomic groupings for which medium-specific screening values have been developed. As such, specific species of aquatic biota were not chosen as receptors because of the limited information available for specific species and because aquatic biota (fish and benthic invertebrates) are evaluated on a community level via a comparison of surface water and sediment concentrations with medium-specific screening values.

Amphibians are typically selected as a receptor group only when freshwater aquatic or wetland habitats are present on, or in the contaminant transport pathways (as defined in the conceptual model) of, a site. While this is not the typically the case at Sites 1 and 3 based upon the salinity of the creek and the transitory nature of the water in the unnamed tributary, amphibians are included as a receptor group for conservatism. Reptiles are an applicable receptor group. Individual species of amphibians and reptiles are not, however, selected for evaluation because of the general lack of available toxicological information for these taxonomic groups for direct effects (reptiles) and effects from exposures via food webs (reptiles and amphibians). Potential risks to amphibians and reptiles from food web exposures are evaluated using other fauna (birds and mammals) as surrogates. Similarly, potential risks to these groups from direct exposures to surface water and sediment are evaluated using screening

values developed for other taxonomic groups (described above). This is discussed further in Section 9.6 (uncertainties).

Endpoints and Risk Hypotheses

The conclusion of the problem formulation includes the selection of ecological endpoints and risk hypotheses, which are based upon the conceptual model. Two types of endpoints, assessment endpoints and measurement endpoints, are defined as part of the ERA process (USEPA, 1997a). An assessment endpoint is an explicit expression of the environmental component or value that is to be protected. A measurement endpoint is a measurable ecological characteristic that is related to the component or value chosen as the assessment endpoint. The considerations for selecting assessment and measurement endpoints are summarized in USEPA (1997a) and discussed in detail in Suter (1989, 1990, 1993). Risk hypotheses are testable hypotheses about the relationship among the assessment endpoints and their predicted responses when exposed to contaminants.

Endpoints define ecological attributes that are to be protected (assessment endpoints) and measurable characteristics of those attributes (measurement endpoints) that can be used to gauge the degree of impact that has or may occur. Assessment endpoints most often relate to attributes of biological populations or communities, and are intended to focus the risk assessment on particular components of the ecosystem that could be adversely affected by chemicals attributable to a site (USEPA, 1997a). Assessment endpoints contain an entity (e.g., heron population) and an attribute of that entity (e.g., survival rate). Individual assessment endpoints usually encompass a group of species or populations (the receptor) with some common characteristic, such as specific exposure route or contaminant sensitivity, with the receptor then used to represent the assessment endpoint in the risk evaluation.

Assessment and measurement endpoints may involve ecological components from any level of biological organization, from individual organisms to the ecosystem itself. Effects on individual organisms are important for some receptors, such as rare and endangered species; population- and community-level effects are typically more relevant to ecosystems. Population- and community-level effects are usually difficult to evaluate directly without long-term and extensive study. However, measurement endpoint evaluations at the individual level, such as an evaluation of the effects of chemical exposure on reproduction, can be used to predict effects on an assessment endpoint at the population or community level. In addition, use of criteria values designed to protect the majority of the components of a community (e.g., AWQC for the Protection of Aquatic Life) can be useful in evaluating potential community- and/or population-level effects.

Table 7-4 shows the assessment endpoints, risk hypotheses, and measurement endpoints used in the ERA. **Table 7-4** also shows the receptors associated with each endpoint.

7.3 Exposure Assessment

The principal activity associated with the exposure assessment is the estimation of chemical concentrations in applicable media, termed exposure point concentrations (EPCs), to which the receptors may be exposed. This is accomplished through the selection of appropriate sets of the available analytical data using a set of criteria (e.g., validation status, sampling date). Once the analytical data sets are selected, EPCs are calculated as a particular point on the distribution of concentrations. At the screening level, the EPC is the maximum detected concentration. At the baseline level, EPCs are typically central tendency estimates (e.g., arithmetic mean). EPCs are then used in bioaccumulation and food web models to estimate exposures to upper trophic level receptors.

7.3.1 Selection Criteria for Analytical Data

Available analytical data (described in Section 9.2.2) were selected for use in the ERA based upon the following:

- Data must have been validated by a qualified data validator using acceptable data validation methods. Rejected (R) values were not used in the ERA. Unqualified data and data qualified as J (estimated), L (biased low), or K (biased high) were treated as detected. Data qualified as U (undetected) or B (blank contamination) were treated as non-detected.

- For samples with duplicate analyses, the higher of the two concentrations was used when both values were detects or when both values were non-detects. In cases where one result was a detection and the other a non-detect, the detected value was used in the assessment.

7.3.2 Exposure Point Concentrations

EPCs are calculated as a particular point on the distribution of concentrations. At the screening level, the EPC is the maximum detected concentration. At the baseline level, EPCs are typically central tendency estimates (e.g., median, geometric mean, or arithmetic mean), which provide a more representative estimate of potential exposures and risks to receptor populations (the focus of the selected assessment endpoints). In this ERA, the maximum (Step 2), arithmetic mean (Step 3A), 95 percent upper confidence limit (UCL) of the arithmetic mean (Step 3A), and geometric mean (Step 3A) concentrations were evaluated for direct exposures. Exposures via food webs utilized the maximum (Step 2), arithmetic mean (Step 3A), and 95 percent UCL of the arithmetic mean (Step 3A). These three medium-specific EPCs were used in bioaccumulation and food web models to estimate exposures to upper trophic level receptors. Dietary items for which tissue concentrations were modeled included aquatic plants, benthic invertebrates, and fish. Incidental ingestion of sediment, but not ingestion of drinking water (due to the salinity of the creek), was included when calculating the total exposure. The models and parameter values used for calculating these tissue concentrations are outlined in the following subsections.

Only chemicals with the potential to bioaccumulate were evaluated for exposures via food webs. This list of bioaccumulating chemicals is provided in **Table 7-5** for relevant constituents (i.e., those sampled at the sites) and is based upon the list of bioaccumulating chemicals provided in Table 4-2 of USEPA (2000).

For initial (screening; Step 2) exposure estimates, the uptake of chemicals from the abiotic media into these food items was based upon conservative (e.g., 90th percentile) BCFs or BAFs from the literature, where available. The use of 90th percentile values is generally recommended to provide for a conservative screening assessment (Sample et al. 1998a, 1998b; Bechtel Jacobs, 1998b). BCFs and BAFs used for baseline (Step 3A) exposure estimates were based upon, or modeled from, central tendency estimates (e.g., median or mean). For mean values, arithmetic means were used for normally distributed parameters; when the distribution was log-normal, the geometric mean was used. Default factors of 1.0 were used only when data were not available for a chemical in the literature.

In the BERA, using central tendency estimates (rather than high-end values or maximums) for exposure parameters such as BAFs provides a more representative estimate of potential exposures and risks to populations (the focus of the assessment endpoints) of upper trophic level receptors. Since these upper trophic level receptors are highly mobile, they would be expected to effectively average their exposure over time as they forage within the area defining their home range. Average prey concentrations are most appropriately estimated using central tendency estimates of media concentrations and accumulation factors. For example, the wildlife dietary exposure models contained in the *Wildlife Exposure Factors Handbook* (USEPA, 1993c) specify the calculation of an average daily dose. Increasing the representativeness of the exposure estimates relative to population-level effects is consistent with the intent of a BERA. In cases where adequate spatial sampling coverage exists, mean concentrations are also appropriate for evaluating potential risks to populations of lower trophic level receptors because the members of the population are expected to be found throughout an area (where suitable habitat is present), rather than concentrated in one particular location. While effects to individual organisms might be important for some receptors, such as rare and endangered species, population- and community-level effects are typically more relevant to ecosystems.

Aquatic Plants

Tissue concentrations in the above-ground vegetative portion of aquatic plants were estimated by multiplying the sediment concentration for each chemical by chemical-specific soil-to-plant BCFs (extrapolated to sediments) obtained from the literature. These BCFs are listed in **Tables 7-6** (screening) **and 7-7** (baseline).

The BCF values were based upon root uptake from sediment and upon the ratio between dry-weight sediment and dry-weight plant tissue. Literature values based upon the ratio between dry-weight sediment and wet-weight

plant tissue were converted to a dry-weight basis by dividing the wet-weight BCF by the estimated solids content for plants (15 percent [0.15]; Sample et al., 1997).

Benthic Invertebrates

Tissue concentrations in benthic invertebrates were estimated by multiplying the sediment concentration for each chemical by chemical-specific sediment-to-invertebrate BAF values obtained from the literature. These values are listed in **Tables 7-6** (screening) **and 7-7** (baseline).

The BAF values used were based upon the ratio between dry-weight sediment and dry-weight invertebrate tissue. BAFs based upon depurated analyses (sediment was purged from the gut of the organism prior to analysis) were given preference over undepurated analyses when selecting BAF values because direct ingestion of sediment was accounted for separately in the food web model.

Literature values based upon the ratio between dry-weight sediment and wet-weight invertebrate tissue were converted to a dry-weight basis by dividing the wet-weight BAF by the estimated solids content for benthic invertebrates (21 percent [0.21]; USEPA, 1993c). For chemicals without available literature-based sediment-to-invertebrate BAFs, a BAF of 1.0 was assumed, that is, it was assumed that the concentration in benthic invertebrate tissues was equal to the concentration in the sediment (a standard assumption in ERAs).

Fish

Tissue concentrations in whole-body fish were estimated by multiplying the sediment concentration for each chemical by chemical-specific sediment-to-fish BAFs obtained from the literature. These BAFs are listed in **Tables 7-6** (screening) **and 7-7** (baseline).

The BAF values used were based upon the ratio between dry-weight sediment and dry-weight tissue. Literature values based upon the ratio between dry-weight sediment and wet-weight fish tissue were converted to a dry-weight basis by dividing the wet-weight BAF by the estimated solids content for fish (25 percent [0.25]; USEPA, 1993c). For chemicals without literature-based sediment-to-fish BAFs, a BAF of 1.0 was assumed.

Dietary Intakes

Upper trophic level receptor exposures via food webs to chemicals present in surface sediment were determined using estimated chemical concentrations in each relevant dietary component for each receptor, as described in the previous section. Incidental ingestion of surface sediment was also included when calculating the total exposure.

Dietary intakes for each upper trophic level receptor were calculated using the following formula (modified from USEPA [1993c]):

$$DI_x = \frac{[[\sum_i (FIR)(FC_{xi})(PDF_i)] + [(FIR)(SC_x)(PDS)] + [(WIR)(WC_x)]]}{BW}$$

where:
- DI_x = Dietary intake for chemical x (mg chemical/kg body weight/day)
- FIR = Food ingestion rate (kg/day, dry-weight)
- FC_{xi} = Concentration of chemical x in food item i (mg/kg, dry-weight)
- PDF_i = Proportion of diet composed of food item i (dry-weight basis)
- SC_x = Concentration of chemical x in sediment (mg/kg, dry-weight)
- PDS = Proportion of diet composed of sediment (dry-weight basis)
- WIR = Water ingestion rate (L/day)
- WC_x = Concentration of chemical x in water (mg/L)
- BW = Body weight (kg, wet-weight)

Incidental ingestion of sediment was modeled as a dietary component rather than using a separate sediment ingestion rate. Parameter values for the selected receptors are listed in **Tables 7-8** (screening) **and 7-9** (baseline). When measured food ingestion rates were not available for a receptor from the literature, the rates were estimated using allometric equations from Nagy (2001).

The exposure parameter values were selected to provide for a conservative evaluation in the initial screening. Examples of these conservative assumptions include:

- All of the dietary items consumed by the receptor are obtained from the portion of the creek adjacent to the sites (i.e., an Area Use Factor [AUF] of one is assumed) at the point of maximum concentration.
- Chemicals are 100 percent bioavailable.
- Maximum food ingestion rates are used (calculated maximum ingestion rates using allometric equations were based upon the maximum adult body weight).
- Minimum adult body weights are used.

For the refined baseline estimates:

- Central tendency estimates (e.g., mean, median, or midpoint) for body weight and ingestion rates were used. Central tendency estimates for these exposure parameters are more relevant for a BERA because they better represent the characteristics of a greater proportion of the individuals in the population. Populations or communities (rather than individual organisms) were emphasized when developing the assessment endpoints for the ERA.

7.4 Effects Assessment

The effects assessment defines the methods and data used to define an adverse ecological effect. For this ERA, effects data are available from multiple lines of evidence, as follows:

- **Screening Values for Surface Water and Sediment** - Analytical data are compared to literature-based surface water and sediment screening values. Sediment pore water data are compared to surface water screening values.
- **Screening Values for Ingestion Exposures** - Food web exposure estimates are compared to literature-based ingestion-based screening values for upper trophic level receptors.
- **Bioavailability Measures** - Additional data were collected to help evaluate chemical-specific bioavailability in abiotic media.

7.4.1 Medium-Specific Screening Values

Medium-specific screening values were established for each ecologically relevant medium and chemical analyzed. Based upon the conceptual model (**Figure 7-2**), direct exposure to surface water and sediment (including pore water) are potentially complete pathways. The screening values used in the ERA considered Region 3 BTAG screening values (USEPA, 2006) as well as additional screening values available from the literature. When more than one screening value was available (e.g., fauna and flora) from a particular source for a chemical, the lowest of these values was selected. Because the salinity of Indian Field Creek and its unnamed tributary exceeded 10 ppt, marine screening values were used when available (USEPA, 1996; Buchman, 2008); freshwater values were used when marine values were lacking. The values used in the ERA are summarized, by medium, in **Table 7-10**.

For surface water, the screening values for chemicals known to bioaccumulate in aquatic food webs were based upon the final chronic value (rather than the final residue value) as per USEPA (1996, 2009a) and Suter and Tsao (1996). The use of final chronic values is intended to protect aquatic receptors from direct exposures to chemicals in surface water, rather than from exposure via food webs. Potential risks to upper trophic level receptors from food web exposures (tissue residues) were evaluated separately using the ingestion-based screening values outlined in Section 7.4.2.

7.4.2 Ingestion Screening Values

Ingestion screening values for dietary exposures were derived for each bioaccumulative chemical evaluated in the ERA. Screening values were derived for both mammalian and avian receptors, the only two taxonomic groups for which sufficient toxicological information was generally available for the range of chemicals evaluated.

Toxicological information from the literature for wildlife species most closely related to the receptor species were used, where available, but were supplemented by laboratory studies of non-wildlife species (e.g., laboratory mice) where necessary. The ingestion screening values are expressed as milligrams of the chemical per kilogram body weight of the receptor per day (mg/kg-BW/day).

Survival, growth, and reproduction were emphasized as toxicological endpoints because they are the most relevant, ecologically, to maintaining viable populations and because they are generally the most studied toxicological endpoints for ecological receptors. If several chronic toxicological studies were available from the literature, the most appropriate study was selected for each receptor species based upon study design, study methodology, study duration, study endpoint, and test species.

Ingestion screening values were derived for both chronic No Observed Adverse Effect Level (NOAEL) and chronic Lowest Observed Effect Level (LOAEL) endpoints. The applicable uncertainty factors from **Table 7-11** were applied to derive these screening values, where necessary. Because there are no threatened or endangered species known to occur in the Sites 1 and 3 area, the application of additional uncertainty factors for this class of receptors is not applicable to the ERA. Taxonomic class-type uncertainty factors were also not applied because the values in **Table 7-11** were typically derived based upon data from a broad range of taxonomic groups. Maximum Acceptable Toxicant Concentrations (MATCs), defined as the geometric mean of the NOAEL and LOAEL, were also calculated. Ingestion screening values for mammals and birds are summarized in **Tables 7-12 and 7-13**, respectively.

7.4.3 Bioavailability Measures

Data collected to evaluate the potential chemical-specific bioavailability in abiotic media included:

- **Sediment** - TOC, pH, AVS/SEM, and grain size.
- **Surface Water** - Dissolved metals and pH.

These data are discussed, where applicable, in Section 7.5.1.

7.5 Risk Characterization

The risk characterization portion of the ERA uses the information generated during the three previous parts of the ERA (problem formulation, exposure assessment, and effects assessment) to estimate potential risks to ecological receptors. In addition to the lines of evidence that were described in Section 7.4, the following additional factors were considered during the risk characterization:

- **Essential Nutrients.** Calcium, magnesium, potassium, and sodium were excluded from consideration because they are essential macronutrients needed for normal metabolism, growth, and reproduction.
- **Background Concentrations.** Facility-specific background surface water and sediment concentrations were derived from background samples collected previously from the upgradient portion of the Eastern Branch of Felgates Creek. Concentrations from samples collected adjacent to the sites were directly compared with background samples.

7.5.1 Comparison with Screening Values

Chemical concentrations in surface water, sediment, and sediment pore water are compared with the corresponding screening values to derive risk estimates using the hazard quotient (HQ) method. HQs are calculated by dividing the chemical concentration in the medium by the corresponding chemical-specific and medium-specific screening value. HQs equal to or exceeding one indicate the potential for unacceptable risk since the chemical concentration (exposure) equals or exceeds the screening value (effect). HQs less than one indicate that unacceptable risks are unlikely. As discussed in Section 9.3.2, maximum, mean (arithmetic and geometric), and 95% UCL of the arithmetic mean concentrations from the 2009 RI sampling are compared with screening values. These four EPCs were used to provide a full range of ecological risk estimates. However, chemicals were excluded from further consideration if the HQ based upon the 95% UCL was less than one.

The surface water and sediment screenings evaluate lower trophic level ecological receptor exposures, as reflected in the assessment endpoints (see **Table 7-4**). The applicable receptor groups are aquatic plants, benthic invertebrates, fish, amphibians, and reptiles. For pore water, benthic invertebrates are the applicable receptor group. Upper trophic level receptor exposures are evaluated in Section 7.5.2.

Surface Water

Maximum surface water concentrations are compared to screening values in **Table 7-14**. Based upon this comparison for unfiltered samples, four metals (aluminum, copper, iron, and manganese) had HQs exceeding one based upon detected concentrations. Only manganese exceeded screening values in filtered samples based upon maximum detected concentrations. No organic chemical exceeded screening values based upon a maximum detected concentration (**Table 7-14**).

Mean concentrations in surface water are compared with screening values in **Table 7-14**. Based upon this comparison for unfiltered samples, four metals (aluminum, copper, iron, and manganese) had 95% UCL HQs exceeding one based upon detected concentrations. None of these metals exceeded screening values in filtered samples based upon 95% UCL detected concentrations. No organic chemical exceeded screening values based upon a 95% UCL detected concentration (**Table 7-14**).

Bioavailability Considerations USEPA (1996) indicates that the dissolved metal fraction should be preferentially used to the total metal fraction in surface water evaluations because dissolved metal concentrations best represent the bioavailable fraction. High levels of suspended solids and sediment-adsorbed metals, which may be present in unfiltered samples, could result in overstating bioavailable surface water concentrations and thus potential exposures and risks. A number of the surface water samples were turbid, particularly in the unnamed tributary (**Table 7-1**). Thus, the filtered (dissolved) samples better represent potential aquatic exposures. None of the metals exceeded screening values in filtered samples based upon 95% UCL detected concentrations. Thus, no COPCs were identified in surface water.

Surface Sediment

Maximum sediment concentrations are compared to screening values in **Table 7-15**. Based upon this comparison, seven metals (aluminum, arsenic, barium, cobalt, manganese, nickel, and vanadium) had HQs exceeding one based upon detected concentrations. Beryllium was detected but a screening value was not available. Carbon disulfide was the only organic chemical that exceeded screening values based upon maximum detected concentrations. 2-Butanone was detected but a screening value was not available.

Mean concentrations in sediment are compared with screening values in **Table 7-15**. Based upon this comparison, two metals (aluminum and arsenic) had 95% UCL HQs exceeding one based upon detected concentrations. Carbon disulfide was the only organic chemical that exceeded screening values based upon a 95% UCL detected concentration (**Table 7-15**).

Bioavailability Considerations Aluminum and arsenic are not AVS metals. Thus, SEM/AVS ratios are not applicable to these two metals. The screening value for carbon disulfide is equilibrium partitioning-based and was normalized to the mean site-specific TOC. 2-Butanone is a polar organic chemical so equilibrium partitioning would provide a very conservative estimate of bioavailability and toxicity. Although a marine-based equilibrium partitioning value is not available for 2-butanone, a freshwater value of 270 µg/kg (at one percent TOC) is (Jones et al., 1997). Normalizing this value to the site-specific TOC of 3.69 percent yields a screening value of 996 µg/kg. The maximum detected concentration of 2-butanone in sediment is 6.60 µg/kg, which is considerably less than the calculated screening value. Thus, aluminum, arsenic, and carbon disulfide were identified as COPCs in sediment, as was beryllium, which was detected but lacked a screening value.

Sediment Pore Water

Maximum sediment pore water concentrations are compared to surface water screening values in **Table 7-16**. Based upon this comparison, carbon disulfide was the only chemical that exceeded screening values based upon maximum detected concentrations. Cyclohexane was detected but a screening value was not available.

Mean concentrations in sediment pore water are compared with screening values in **Table 7-16**. Based upon this comparison, carbon disulfide was the only chemical that exceeded screening values based upon a 95% UCL detected concentration (**Table 7-16**). Thus, carbon disulfide was identified as a COPC in sediment pore water, as was cyclohexane, which was detected but lacked a screening value.

7.5.2 Food Web Exposures

Exposure doses (based upon the maximum, arithmetic mean, and 95% UCL concentrations) for upper trophic level receptors from exposures via the food web are compared with the corresponding ingestion-based screening values to derive risk estimates using the HQ method. HQs are calculated by dividing the exposure dose by the corresponding chemical- and receptor-specific screening value. HQs equal to or exceeding one indicate the potential for unacceptable risk since the dose (exposure) equals or exceeds the screening value (effect). HQs less than one indicate that unacceptable risks are unlikely. Chemicals were excluded from further consideration if the HQ based upon the 95% UCL was less than one based upon the MATC.

HQs based upon maximum exposure doses for each upper trophic level receptor are listed in **Table 7-17**. Based upon a comparison to NOAELs, arsenic, cadmium, chromium, copper, lead, mercury, selenium, and zinc had HQs exceeding one for one or more receptors. The exceedances for cadmium and selenium were based upon maximum reporting limits.

HQs based upon arithmetic mean exposure doses for upper trophic level receptors are listed in **Table 7-18**. Based upon a comparison to NOAELs, only zinc (marsh wren) had a HQ exceeding one. HQs did not exceed one based upon the LOAEL or the MATC for any receptor.

HQs based upon 95% UCL exposure doses for upper trophic level receptors are listed in **Table 7-19**. Based upon a comparison to NOAELs, chromium (marsh wren) and zinc (marsh wren) had HQs exceeding one. HQs did not exceed one based upon the LOAEL or the MATC for any receptor. Thus, risks from food web exposures are considered acceptable.

7.5.3 Risk Evaluation

In this section, the various lines of evidence discussed in the previous section are integrated in order to evaluate the potential for unacceptable risks.

Surface Water

No COPCs were identified in surface water. Thus, risks from exposure to this medium are considered acceptable based upon the 2009 RI samples. However, additional samples are recommended in the unnamed tributary to address identified data gaps prior to completing an FS for groundwater at Site 1 (see Section 7.5.4) and potential ecological risks will be reassessed using these additional data following their collection.

Surface Sediment

Aluminum, arsenic, beryllium, and carbon disulfide were identified as COPCs in sediment (Section 7.5.1.2). Site sediment concentrations for these chemicals are compared with facility-specific background sediment concentrations in **Table 7-20**. Based upon this comparison, the maximum ratio of site sediment concentrations to background concentrations exceeded one for aluminum (1.33), beryllium (1.36), and carbon disulfide (2.92) but the mean ratios were all less than one. Thus, concentrations in site samples were similar to concentrations in background samples for all COPCs on a site-wide basis (as reflected by the mean ratios), indicating that all of these chemicals are present at background levels. Based upon this evaluation, no chemicals were identified as COCs in sediment and risks from exposure to this medium are considered acceptable based upon the 2009 RI samples. However, additional samples are recommended in the unnamed tributary to address identified data gaps prior to completing an FS for groundwater at Site 1 (see Section 7.5.4) and potential ecological risks will be reassessed using these additional data following their collection.

Sediment Pore Water

Carbon disulfide and cyclohexane were identified as COPCs in sediment pore water (Section 7.5.1.3). No background pore water data were available. However, carbon disulfide, which can be naturally produced in

wetland environments, was consistent with background in bulk sediment samples based upon the mean ratio between site sediment concentrations and background sediment concentrations (0.88; **Table 7-20**). Thus, it is expected that pore water concentrations would also be at background levels. The acute toxicity of cyclohexane (based upon available 4-day LC_{50} values for surface water exposures) to marine organisms varies from 2,400 µg/L (shrimp) to 1,420,000 µg/L (marine bivalves) (AQUIRE, 2010). Applying an uncertainty factor of 100 to the lowest of these numbers yields a screening value of 24 µg/L, which is well above the maximum detected concentration in pore water (2.0 µg/L). Based upon this evaluation, no chemicals were identified as COCs in sediment pore water and risks from exposure to this medium are considered acceptable.

It should be noted that the primary contaminants in groundwater at Sites 1 and 3 are TCE and its principal daughter products (cis-1,2-DCE and vinyl chloride). None of these chemicals were detected in 2009 sediment pore water, surface water, or bulk sediment samples.

Food Web Exposures

No chemical had a MATC HQ exceeding one based upon the 95% UCL exposure dose. Thus, risks from food web exposures are considered acceptable.

7.5.4 Risk Summary and Conclusions

No COCs were identified for surface water, sediment, or sediment pore-water at Sites 1 and 3. Similarly, no COCs were identified for food web exposures. Thus, risks to ecological receptors are considered acceptable based upon the 2009 RI samples. However, additional surface water, sediment, and pore water samples are recommended in the unnamed tributary to address the data gaps outlined in Section 7.2.2 to confirm this conclusion prior to completing an FS for groundwater at Site 1. This sampling will be described in detail as part of a SAP and potential ecological risks will be reassessed using these additional data following their collection. The source area at Site 3 has been removed and groundwater is not a significant continuing source to the aquatic habitats adjacent to this site since the 2009 data collected for this RI indicate that the relatively high concentrations for some VOCs in certain groundwater samples are not being reflected in the aquatic media to which ecological receptors are directly exposed (pore water, surface water, and sediment).

While waste is still in place at Site 1, the 2009 data collected for this RI indicate that chemicals are not migrating to adjacent aquatic habitats via groundwater at levels that present an unacceptable risk to ecological receptors since the relatively high concentrations for some VOCs in certain groundwater samples are not being reflected in the aquatic media to which ecological receptors are directly exposed (pore water, surface water, and sediment). However, an FS to further evaluate groundwater due to human health concerns is recommended for both sites based upon the results of this RI (see Section 9). The FS should be conducted such that protection of both human health and the environment will be considered. For ecological receptors, this would entail confirming that contaminants are not migrating to the creek at concentrations that may pose a risk to ecological receptors in the future. Also, additional surface water, sediment, and pore water samples are recommended in the unnamed tributary to address the data gaps outlined in Section 7.2.2 prior to completing the FS for groundwater at Site 1 (as a pre-FS investigation). This sampling will be described in detail as part of a SAP and potential ecological risks will be reassessed using these additional data following their collection.

7.6 Uncertainties

Uncertainties are present in all risk assessments because of the limitations of the available data and the need to make certain assumptions and extrapolations based upon incomplete information. The uncertainties in this ERA are mainly attributable to the following factors:

- Reporting Limits - Reporting limits for some undetected analytes exceeded applicable screening values in some media. **Table 7-21** summarize these constituents, by medium, and reports both the ratio of the minimum and maximum reporting limits to the screening value as well as the ratio of the mean value (calculated using one-half of the reporting limit for each sample) to the screening value. Because these constituents were not detected, they are not known to be present on the site but the potential for unacceptable risks cannot be totally discounted because the reporting limits are higher than the screening

values. The magnitude of the ratios can be used to qualitatively evaluate the magnitude of the associated uncertainty (e.g., there is more uncertainty in terms of the potential for risk for a ratio of 100 relative to a ratio of 10). In surface water, mean reporting limits for total and dissolved nickel were less than 2.5 times screening values. The mean reporting limits for total and dissolved silver were 10.9 times the screening value. Silver was not detected in sediment, suggesting that it is not present at the sites in appreciable quantities. In sediment, mean reporting limits exceeded screening values only for selenium but by a very small margin (1.16).

In summary, there were no chemicals with very high mean ratios, suggesting that the associated uncertainties are relatively low. Because standard analytical methods were used and the sample reporting limits were not elevated relative to the method reporting limits for the vast majority of samples and analytes, these uncertainties are considered acceptable and are unlikely to impact the conclusions of the ERA.

- Duplicate Analyses - When evaluating samples with field duplicates, the value used in the ERA was always the detect when one result was a detect and the duplicate was a non-detect, regardless of whether or not the non-detected value was higher. In these cases, the use of the detect has less uncertainty since it represents an actual measured value (versus an upper limit bound) and the two samples will have identical or similar reporting limits.
- Selection of COPCs - Chemicals without available screening values for a medium were not retained as COPCs unless they were detected. These uncertainties are unlikely to impact the conclusions of the ERA since these chemicals are not known to be present on the site as they were not detected in site samples.
- Adequacy of Existing Samples - Some of the surface water, sediment, and pore water samples scoped as part of the sampling for this RI could not be collected in the unnamed tributary due to the lack of water at the time samples were collected. This is considered a data gap (see Section 7.2.2). Additional surface water, sediment, and pore water samples are recommended in the unnamed tributary to address this data gap prior to completing a FS for groundwater at Site 1. This sampling will be described in detail as part of a SAP and potential ecological risks will be reassessed using these additional data following their collection. In addition, the timing of sample collection will be coordinated with the regulatory agencies in an effort to sample during periods when groundwater may be discharging to the unnamed tributary.
- Ingestion Screening Values - Data on the toxicity of many chemicals to the receptor species were sparse or lacking, requiring the extrapolation of data from other wildlife species or from laboratory studies with non-wildlife species. This is a typical limitation and extrapolation for ERAs because so few wildlife species have been tested directly for most chemicals. The uncertainties associated with toxicity extrapolation were minimized through the selection of the most appropriate test species for which suitable toxicity data were available. The factors considered in selecting a test species to represent a receptor species included taxonomic relatedness, trophic level, foraging method, and similarity of diet. It is difficult to predict if these extrapolations would result in overestimating or underestimating potential risks.
- A second uncertainty related to the derivation of ingestion screening values applies to metals. Most of the toxicological studies on which the ingestion screening values for metals were based used forms of the metal (such as salts) that have high water solubility and high bioavailability to receptors. Because the analytical samples on which site-specific exposure estimates were based measured total metal, regardless of form, and these highly bioavailable forms are expected to compose only a fraction of the total metal concentration, this is likely to result in an overestimation of potential risks for these chemicals but not to the extent that it would unduly impact the conclusions of the ERA.
- A third source of uncertainty related to the derivation of ingestion-based screening values applies to mercury and selenium. The ingestion-based screening values used for these two metals were based on organometallic (methylated) forms. Screening values for inorganic forms tend to be substantially higher. Given that inorganic forms likely contribute significantly to the total mercury and selenium, use of screening values based on organometallic forms tends to make the screening values for these metals extremely conservative and likely overestimates potential risk.

- Chemical Mixtures - Information on the toxicological effects of chemical interactions is generally lacking for ecological receptors, which required (as is standard for ERAs) that the chemicals be evaluated on a compound-by-compound basis during the comparison to screening values. This could result in an underestimation of risk (if there are additive or synergistic effects among chemicals) or an overestimation of risks (if there are antagonistic effects among chemicals).

- Receptor Species Selection - Reptiles and amphibians were selected as receptors in the ERA but were not evaluated quantitatively even when exposure pathways were likely to be complete. For food web exposures, these taxonomic groups were evaluated using other fauna (birds and mammals) as surrogates due to the general lack of taxon-specific ingestion-based toxicological data. This represents an uncertainty in the ERA. However, amphibians are not expected to be major components of the biotic community at the sites due to habitat quality/salinity factors, minimizing the potential impacts of this uncertainty on the conclusions of the ERA. In the unnamed tributary, surface water is not present in the upstream portions of the tributary (upstream of sampling location YS01-SD30). Surface water is present in the portion of the tributary downstream of sampling location YS01-SD30, at least intermittently, and becomes more permanent as the channel approaches Indian Field Creek. However, the salinity also increases as the tributary approaches Indian Field Creek, exceeding 15 ppt in all samples from the creek (**Table 7-1**). In addition, the substrate in the tributary is composed mostly of sand with relatively low (less than one percent) amounts of organic matter (**Table 7-2**). In the creek, where salinity is highest, substrates are much higher in organic matter.

  It was also assumed that reptiles and amphibians were not exposed to significantly higher concentrations of chemicals and were not more sensitive to chemicals than other receptor species evaluated in the ERA. This assumption was a source of uncertainty in the ERA. Based upon limited direct comparisons of toxicity, amphibians are generally more sensitive to metals relative to fish in water exposures, but not more sensitive to organic chemicals than fish (Birge, Westerman, and Spromberg, 2000). For sediment exposures, amphibian-based No Observed Effect Concentration (NOEC) values are higher than typical sediment screening values from the literature (such as the ones used in this ERA) that are based upon data from other aquatic receptors for selected metals (NAVFAC, 2004). There are few comparable data for reptiles.

- Food Web Exposure Modeling - Chemical concentrations in aquatic food items (plants, benthic invertebrates, and fish) were modeled from measured media concentrations and were not directly measured. The use of generic, literature-derived exposure models and bioaccumulation factors introduces some uncertainty into the resulting estimates. The values selected and methodology employed were intended to provide a conservative (SERA) or reasonable (Step 3A) estimate of potential food web exposure concentrations.

- Another source of uncertainty is the use of default assumptions for exposure parameters such as BCFs and BAFs. Although BCFs or BAFs for many bioaccumulative chemicals were readily available from the literature and were used in the ERA, the use of a default factor of 1.0 to estimate the concentration of some chemicals in receptor prey items is a source of uncertainty.

- Area use factors were assumed to equal one. This is a conservative assumption since a significant percentage of each upper trophic level receptor species' time could be spent foraging offsite in unimpacted areas or in areas where chemical concentrations are expected to be significantly lower.

- Total Versus Dissolved Metals - USEPA guidance (1996) indicates that the dissolved metal fraction should be preferentially used to the total metal fraction in surface water screening. Both total and dissolved concentrations were used in the ERA for the surface water screen. High levels of suspended solids and sediment-adsorbed metals would result in overstating bioavailable surface water concentrations and thus potential exposures and risks.

- Mean Versus Maximum Media Concentrations - As is typical in an ERA, a finite number of samples of environmental media are used to develop the exposure estimates. The maximum measured concentration provides a conservative estimate for immobile biota or those with a limited home range. The most realistic exposure estimates for mobile species with relatively large home ranges and for species populations (even those that are immobile or have limited home ranges) are those based upon the mean chemical

concentrations in each medium to which these receptors are exposed. This is reflected in the wildlife dietary exposure models contained in the *Wildlife Exposure Factors Handbook* (USEPA, 1993c), which specify the use of average media concentrations. Given the mobility of the upper trophic level receptor species used in the ERA, the use of maximum chemical concentrations (rather than mean concentrations) in the SERA to estimate the exposure via food webs is very conservative. This conservatism was reduced to more realistic levels in the values selected for use in the BERA evaluation. The 95 percent UCL of the arithmetic mean was used quantitatively in the BERA portion of this ERA to represent the average exposure scenarios.

- Comparisons to Background Concentrations - Background concentrations were used to judge the site-relatedness of individual chemicals. If site concentrations were consistent with background levels, it was assumed that the concentrations were not related to known site-related source areas. There exists the possibility that concentrations below background were indeed site-related, rendering the assumption false. However the potential impact of this possibility is minimal since chemicals at concentrations consistent with background should exhibit no different ecological effects than commonly occurring in areas not affected by releases, regardless of their source.

TABLE 7-1
Water Column Parameter Measurements
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Area	Sample ID	Date	Temperature (^{o}C)	pH	Conductivity (mS/cm)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Oxidation Reduction Potential (MV)
Unnamed Tributary	YS01-SW/SD31-0709	7/23/2009	26.5	6.54	22.4	13.0	145	5.41	111
Indian Field Creek	YS01-SW/SD32-0709	7/21/2009	26.3	7.49	33.4	21.0	56.7	8.53	51
Indian Field Creek	YS01-SW/SD33-0709	7/21/2009	25.0	7.31	32.1	20.0	0	6.36	-163
Indian Field Creek - Upgradient	YS03-SW/SD03-0709	7/24/2009	NS	NS	NS	NS	NS	NS	NS
Indian Field Creek - Upgradient	YS03-SW/SD04-0709	7/24/2009	NS	NS	NS	NS	NS	NS	NS
Indian Field Creek	YS03-SW/SD05-0709	7/23/2009	26.9	5.60	25.8	16.0	24.7	5.91	168
Indian Field Creek	YS03-SW/SD06-0709	7/22/2009	28.5	6.79	28.4	18.0	0	7.46	18
Indian Field Creek	YS03-SW/SD07-0709	7/22/2009	28.0	6.27	28.2	17.0	0	7.67	17
Indian Field Creek	YS03-SW/SD08-0709	7/22/2009	27.3	6.08	28.1	17.0	0	7.48	17
Indian Field Creek	YS03-SW/SD09-0709	7/22/2009	NS	NS	NS	NS	NS	NS	NS
Indian Field Creek	YS03-SW/SD10-0709	7/22/2009	26.7	6.14	27.7	17.0	0	7.23	17
Indian Field Creek - Downgradient	YS03-SW/SD11-0709	7/21/2009	25.4	7.16	31.9	20.0	0	4.82	-166
Indian Field Creek - Downgradient	YS03-SW/SD12-0709	7/21/2009	25.2	5.95	32.0	20.0	≥999	6.73	-72
Background - Felgates Creek	YBKG-SW01-1207	12/10/2007	17.9	7.59	9.60	5.00	166	9.67	79
Background - Felgates Creek	YBKG-SW02-1207	12/14/2007	15.9	8.01	36.5	22.0	0	9.67	165
Background - Felgates Creek	YBKG-SW03-1207	12/14/2007	15.9	7.94	33.0	21.0	0	9.69	204
Background - Felgates Creek	YBKG-SW04-1207	12/11/2007	15.4	6.39	32.0	20.0	25.6	11.30	216
Background - Felgates Creek	YBKG-SW05-1207	12/11/2007	15.6	7.87	29.4	18.0	46.6	10.30	214
Background - Felgates Creek	YBKG-SW06-1207	12/14/2007	16.0	8.00	4.56	28.0	0	9.91	209

NS - Not Sampled

TABLE 7-2
Physical Sediment Parameter Measurements
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Area	Sample ID	Date	Depth (inches)	Total Organic Carbon		pH	SEM/AVS Ratio	Grain Size (percent)				
				mg/kg	percent			Gravel	Coarse Sand	Medium Sand	Fine Sand	Silt/ Clay
Unnamed Tributary	YS01-SD30-0709	7/23/2009	0-4	3,556	0.36	6.30	-- a	1.00	3.80	62.10	31.00	2.10
Unnamed Tributary	YS01-SD31-0709	7/23/2009	0-4	8,950	0.90	7.40	-- a	0.20	2.10	58.40	37.00	2.30
Unnamed Tributary	YS01-SD31P-0709	7/23/2009	0-4	NS	NS	NS	0.03	NS	NS	NS	NS	NS
Indian Field Creek	YS01-SD32-0709	7/21/2009	0-4	22,910	2.29	7.30	0.37	1.90	31.00	41.50	20.00	5.60
Indian Field Creek	YS01-SD33-0709	7/21/2009	0-4	19,210	1.92	6.80	0.34	5.10	31.40	40.30	16.80	6.40
Indian Field Creek - Upgradient	YS03-SD03-0709	7/24/2009	0-4	159,100	15.9	6.60	-- a	12.70	25.30	36.70	19.60	5.70
Indian Field Creek - Upgradient	YS03-SD04-0709	7/24/2009	0-4	21,400	2.14	4.90	-- a	0.60	6.20	46.50	43.00	3.70
Indian Field Creek	YS03-SD05-0709	7/23/2009	0-4	22,560	2.26	6.30	-- a	1.90	7.30	47.60	39.70	3.50
Indian Field Creek	YS03-SD05P-0709	7/23/2009	0-4	NS	NS	NS	-- a	NS	NS	NS	NS	NS
Indian Field Creek	YS03-SD06-0709	7/22/2009	0-4	36,820	3.68	7.50	1.80	8.60	34.90	34.70	16.50	5.30
Indian Field Creek	YS03-SD07-0709	7/22/2009	0-4	71,570	7.16	7.40	3.20	2.20	35.30	37.80	17.60	7.10
Indian Field Creek	YS03-SD08-0709	7/22/2009	0-4	59,350	5.94	6.80	-- a	7.00	32.30	38.80	16.30	5.60
Indian Field Creek	YS03-SD09-0709	7/22/2009	0-4	27,340	2.73	7.20	0.37	6.10	34.10	38.30	16.00	5.50
Indian Field Creek	YS03-SD10-0709	7/22/2009	0-4	21,030	2.10	6.80	1.03	2.90	31.70	41.30	19.00	5.10
Indian Field Creek - Downgradient	YS03-SD11-0709	7/21/2009	0-4	22,430	2.24	7.60	0.47	1.80	29.10	43.60	21.00	4.50
Indian Field Creek - Downgradient	YS03-SD12-0709	7/21/2009	0-4	20,110	2.01	7.50	0.43	1.30	29.10	38.60	24.40	6.60
Background - Felgates Creek	YBKG-SD01-1207	12/10/2007	0-4	32,400	3.24	7.30	0.28	1.10	0.70	11.20	9.10	77.90
Background - Felgates Creek	YBKG-SD01P-1207	12/10/2007	0-4	NS	NS	NS	0.24	NS	NS	NS	NS	NS
Background - Felgates Creek	YBKG-SD02-1207	12/14/2007	0-4	64,700	6.47	6.90	-- a	0.00	0.90	14.00	5.50	79.60
Background - Felgates Creek	YBKG-SD03-1207	12/14/2007	0-4	54,200	5.42	6.70	0.05	0.00	1.50	9.90	5.10	83.50
Background - Felgates Creek	YBKG-SD04-1207	12/11/2007	0-4	64,100	6.41	7.00	0.14	0.00	1.90	17.70	1.70	78.70
Background - Felgates Creek	YBKG-SD05-1207	12/11/2007	0-4	68,400	6.84	6.70	0.43	0.00	1.30	14.80	3.20	80.70
Background - Felgates Creek	YBKG-SD06-1207	12/14/2007	0-4	43,700	4.37	7.30	0.27	0.00	0.70	4.70	3.10	91.50

a - AVS not detected; ratio not calculated

NS - Not Sampled
Shaded cells indicate field duplicates

TABLE 7-3
Samples Used in the Ecological Risk Assessment
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	Sample ID	Sample Date	Depth (inches)	Area
Surface Water				
YS01-SW031	YS01-SW31-0709	7/23/2009	--	Unnamed Tributary
YS01-SW031	YS01-SW31P-0709	7/23/2009	--	Unnamed Tributary
YS01-SW032	YS01-SW32-0709	7/21/2009	--	Indian Field Creek
YS01-SW033	YS01-SW33-0709	7/21/2009	--	Indian Field Creek
YS03-SW003	YS03-SW03-0709	7/24/2009	--	Indian Field Creek - Upgradient
YS03-SW004	YS03-SW04-0709	7/24/2009	--	Indian Field Creek - Upgradient
YS03-SW005	YS03-SW05-0709	7/23/2009	--	Indian Field Creek
YS03-SW005	YS03-SW05P-0709	7/23/2009	--	Indian Field Creek
YS03-SW006	YS03-SW06-0709	7/22/2009	--	Indian Field Creek
YS03-SW007	YS03-SW07-0709	7/22/2009	--	Indian Field Creek
YS03-SW008	YS03-SW08-0709	7/22/2009	--	Indian Field Creek
YS03-SW009	YS03-SW09-0709	7/22/2009	--	Indian Field Creek
YS03-SW010	YS03-SW10-0709	7/22/2009	--	Indian Field Creek
YS03-SW011	YS03-SW11-0709	7/21/2009	--	Indian Field Creek - Downgradient
YS03-SW012	YS03-SW12-0709	7/21/2009	--	Indian Field Creek - Downgradient
YBKG-SW01	YBKG-SW01-1207	12/10/2007	--	Background - Felgates Creek
YBKG-SW01	YBKG-SW01P-1207	12/10/2007	--	Background - Felgates Creek
YBKG-SW02	YBKG-SW02-1207	12/14/2007	--	Background - Felgates Creek
YBKG-SW03	YBKG-SW03-1207	12/14/2007	--	Background - Felgates Creek
YBKG-SW04	YBKG-SW04-1207	12/11/2007	--	Background - Felgates Creek
YBKG-SW05	YBKG-SW05-1207	12/11/2007	--	Background - Felgates Creek
YBKG-SW06	YBKG-SW06-1207	12/14/2007	--	Background - Felgates Creek
Pore Water				
YS01-WN02	YS01-WN02-0909	9/1/2009	2-12	Site 1 Unnamed Tributary (colocated with YS01-SW/SD31)
YS01-WN02	YS01-WN02P-0909	9/1/2009	2-12	Site 1 Unnamed Tributary (colocated with YS01-SW/SD31)
YS01-WN03	YS01-WN03-0909	9/1/2009	2-12	Indian Field Creek (colocated with YS01-SW/SD32)
YS03-WN01	YS03-WN01-0909	9/1/2009	2-12	Indian Field Creek (colocated with YS03-SW/SD05)
YS03-WN02	YS03-WN02-0909	9/2/2009	2-12	Indian Field Creek (colocated with YS03-SW/SD06)
YS03-WN03	YS03-WN03-0909	9/2/2009	2-12	Indian Field Creek (colocated with YS03-SW/SD07)

Shaded samples are field duplicates

TABLE 7-3
Samples Used in the Ecological Risk Assessment
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Station ID	Sample ID	Sample Date	Depth (inches)	Area
YS03-WN04	YS03-WN04-0909	9/1/2009	2-12	Indian Field Creek (colocated with YS03-SW/SD08)
Sediment				
YS01-SD030	YS01-SD30-0709	7/23/2009	0-4	Unnamed Tributary
YS01-SD031	YS01-SD31-0709	7/23/2009	0-4	Unnamed Tributary
YS01-SD031	YS01-SD31P-0709	7/23/2009	0-4	Unnamed Tributary
YS01-SD032	YS01-SD32-0709	7/21/2009	0-4	Indian Field Creek
YS01-SD033	YS01-SD33-0709	7/21/2009	0-4	Indian Field Creek
YS03-SD003	YS03-SD03-0709	7/24/2009	0-4	Indian Field Creek - Upgradient
YS03-SD004	YS03-SD04-0709	7/24/2009	0-4	Indian Field Creek - Upgradient
YS03-SD005	YS03-SD05-0709	7/23/2009	0-4	Indian Field Creek
YS03-SD005	YS03-SD05P-0709	7/23/2009	0-4	Indian Field Creek
YS03-SD006	YS03-SD06-0709	7/22/2009	0-4	Indian Field Creek
YS03-SD007	YS03-SD07-0709	7/22/2009	0-4	Indian Field Creek
YS03-SD008	YS03-SD08-0709	7/22/2009	0-4	Indian Field Creek
YS03-SD009	YS03-SD09-0709	7/22/2009	0-4	Indian Field Creek
YS03-SD010	YS03-SD10-0709	7/22/2009	0-4	Indian Field Creek
YS03-SD011	YS03-SD11-0709	7/21/2009	0-4	Indian Field Creek - Downgradient
YS03-SD012	YS03-SD12-0709	7/21/2009	0-4	Indian Field Creek - Downgradient
YBKG-SD01	YBKG-SD01-1207	12/10/2007	0-4	Background - Felgates Creek
YBKG-SD01	YBKG-SD01P-1207	12/10/2007	0-4	Background - Felgates Creek
YBKG-SD02	YBKG-SD02-1207	12/14/2007	0-4	Background - Felgates Creek
YBKG-SD03	YBKG-SD03-1207	12/14/2007	0-4	Background - Felgates Creek
YBKG-SD04	YBKG-SD04-1207	12/11/2007	0-4	Background - Felgates Creek
YBKG-SD05	YBKG-SD05-1207	12/11/2007	0-4	Background - Felgates Creek
YBKG-SD06	YBKG-SD06-1207	12/14/2007	0-4	Background - Felgates Creek

Shaded samples are field duplicates

TABLE 7-4
Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Assessment Endpoint	Risk Hypothesis	Measurement Endpoint	Receptor
Survival, growth, and reproduction of benthic invertebrate communities	Are site-related chemical concentrations in surface water and sediment sufficient to adversely effect benthic invertebrate communities?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Benthic invertebrates
Survival, growth, and reproduction of aquatic plant communities	Are site-related chemical concentrations in surface water and sediment sufficient to adversely affect aquatic plant communities?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Aquatic plants
Survival, growth, and reproduction of fish communities	Are site-related chemical concentrations in surface water and sediment sufficient to adversely effect fish communities?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Fish
Survival, growth, and reproduction of aquatic reptile populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to aquatic reptile populations?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Reptiles
		Evidence of potential risk to other upper trophic level aquatic receptors evaluated in the ERA	
Survival, growth, and reproduction of aquatic amphibian populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to aquatic amphibian populations?	Comparison of chemical concentrations in surface water and sediment with medium-specific screening values	Amphibians
		Evidence of potential risk to other upper trophic level aquatic receptors evaluated in the ERA	
Survival, growth, and reproduction of insectivorous bird populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to avian receptor populations that may consume benthic invertebrates from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Marsh wren

TABLE 7-4
Assessment Endpoints, Risk Hypotheses, and Measurement Endpoints
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Assessment Endpoint	Risk Hypothesis	Measurement Endpoint	Receptor
Survival, growth, and reproduction of piscivorous bird populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to avian receptor populations that may consume fish from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Great blue heron Belted kingfisher
Survival, growth, and reproduction of omnivorous bird populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to avian receptor populations that may consume aquatic prey from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Mallard
Survival, growth, and reproduction of herbivorous mammal populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to mammalian receptor populations that may consume aquatic plants from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Muskrat
Survival, growth, and reproduction of omnivorous mammal populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to mammalian receptor populations that may consume aquatic prey from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Raccoon
Survival, growth, and reproduction of piscivorous mammal populations	Are site-related chemical concentrations in surface water and sediment sufficient to cause adverse effects (on growth, survival, or reproduction) to mammalian receptor populations that may consume fish from the site?	Comparison of modeled dietary intakes using sediment concentrations with literature-based ingestion screening values; ratios >1 based upon the NOAEL-LOAEL range indicate an effect	Mink

TABLE 7-5

Bioaccumulative Chemicals List and Log K_{ow} Values for Relevant Chemicals

Remedial Investigation - Sites 1 and 3

Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Log K_{ow} Range	Selected log K_{ow}	Reference
Inorganics			
Arsenic	-- - --	--	--
Cadmium	-- - --	--	--
Chromium	-- - --	--	--
Copper	-- - --	--	--
Lead	-- - --	--	--
Mercury	-- - --	--	--
Nickel	-- - --	--	--
Selenium	-- - --	--	--
Silver	-- - --	--	--
Zinc	-- - --	--	--
Volatile Organics			
1,1,2,2-Tetrachloroethane	2.31 - 2.64	2.39	USEPA 1995a
1,2,4-Trichlorobenzene	3.89 - 4.23	4.01	USEPA 1995a
1,2-Dichlorobenzene	3.20 - 3.61	3.43	USEPA 1995a
1,3-Dichlorobenzene	-- - --	3.50	USEPA 1996a
1,4-Dichlorobenzene	3.26 - 3.62	3.42	USEPA 1995a

TABLE 7-6
Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Screening
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Inorganics						
Arsenic	1.103	Bechtel Jacobs 1998a	0.690	Bechtel Jacobs 1998b	0.126	Pascoe et al. 1996
Cadmium	3.250	Bechtel Jacobs 1998a	3.073	Bechtel Jacobs 1998b	0.164	Pascoe et al. 1996
Chromium	0.084	Bechtel Jacobs 1998a	0.186	Bechtel Jacobs 1998b	0.038	Krantzberg and Boyd 1992
Copper	0.625	Bechtel Jacobs 1998a	7.957	Bechtel Jacobs 1998b	0.100	Krantzberg and Boyd 1992
Lead	0.468	Bechtel Jacobs 1998a	0.326	Bechtel Jacobs 1998b	0.070	Krantzberg and Boyd 1992
Mercury	5.000	Bechtel Jacobs 1998a	2.868	Bechtel Jacobs 1998b	4.580	Cope et al. 1990
Nickel	1.411	Bechtel Jacobs 1998a	0.214	Bechtel Jacobs 1998b	1.000	--
Selenium	3.012	Bechtel Jacobs 1998a	1.000	--	1.000	--
Silver	0.037	Bechtel Jacobs 1998a	0.180	Hirsch 1998	1.000	--
Zinc	1.820	Bechtel Jacobs 1998a	4.759	Bechtel Jacobs 1998b	0.147	Pascoe et al. 1996
Volatile Organics						
1,1,2,2-Tetrachloroethane	2.9950	USEPA 2007	1.000	--	1.000	--
1,2,4-Trichlorobenzene	1.2747	USEPA 2007	0.480	Oliver and Niimi 1988	0.074	Parkerton et al. 1993
1,2-Dichlorobenzene	1.7307	USEPA 2007	1.000	--	0.085	Parkerton et al. 1993
1,3-Dichlorobenzene	1.6680	USEPA 2007	1.000	--	0.085	Parkerton et al. 1993
1,4-Dichlorobenzene	1.7399	USEPA 2007	1.000	--	0.085	Parkerton et al. 1993

TABLE 7-7

Sediment Bioaccumulation Factors For Plants, Benthic Invertebrates, and Fish - Baseline

Remedial Investigation - Sites 1 and 3

Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Sediment-Plant BCF (dry weight)		Sediment-Invertebrate BAF (dry weight)		Sediment-Fish BAF (dry weight)	
	Value	Reference	Value	Reference	Value	Reference
Inorganics						
Arsenic	0.037 a	Bechtel Jacobs 1998a	0.466 a	Bechtel Jacobs 1998b	0.126 b	Pascoe et al. 1996
Cadmium	0.514 a	Bechtel Jacobs 1998a	0.679 a	Bechtel Jacobs 1998b	0.164 b	Pascoe et al. 1996
Chromium	0.048 a	Bechtel Jacobs 1998a	0.083 c	Bechtel Jacobs 1998b	0.038 b	Krantzberg and Boyd 1992
Copper	0.123 a	Bechtel Jacobs 1998a	0.919 a	Bechtel Jacobs 1998b	0.100 b	Krantzberg and Boyd 1992
Lead	0.038 a	Bechtel Jacobs 1998a	0.080 c	Bechtel Jacobs 1998b	0.070 b	Krantzberg and Boyd 1992
Mercury	0.344 a	Bechtel Jacobs 1998a	1.077 a	Bechtel Jacobs 1998b	3.250 b	Cope et al. 1990
Nickel	0.034 a	Bechtel Jacobs 1998a	0.134 c	Bechtel Jacobs 1998b	1.000 d	--
Selenium	0.567 a	Bechtel Jacobs 1998a	1.000 d	--	1.000 d	--
Silver	0.013 a	Bechtel Jacobs 1998a	0.180 b	Hirsch 1998	1.000 d	--
Zinc	0.358 a	Bechtel Jacobs 1998a	0.954 a	Bechtel Jacobs 1998b	0.147 b	Pascoe et al. 1996
Volatile Organics						
1,1,2,2-Tetrachloroethane	2.9950 e	USEPA 2007	1.000 d	--	1.000 d	--
1,2,4-Trichlorobenzene	1.2747 e	USEPA 2007	0.260 b	Oliver and Niimi 1988	0.074 c	Parkerton et al. 1993
1,2-Dichlorobenzene	1.7307 e	USEPA 2007	1.000 d	--	0.085 c	Parkerton et al. 1993
1,3-Dichlorobenzene	1.6680 e	USEPA 2007	1.000 d	--	0.085 c	Parkerton et al. 1993
1,4-Dichlorobenzene	1.7399 e	USEPA 2007	1.000 d	--	0.085 c	Parkerton et al. 1993

a - Geometric mean; b - Arithmetic mean; c - Median; d - Assumed (default) value; e - Calculated (modeled) value

TABLE 7-8
Exposure Parameters for Upper Trophic Level Ecological Receptors - Screening
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Receptor	Body Weight (kg)		Food Ingestion Rate (kg/day - dry)		Dietary Composition (percent)				Sediment Ingestion (percent)	
	Value	Reference	Value	Reference	Fish	Aquatic Plants	Benthic Invert.	Reference	Value	Reference
Birds										
Belted kingfisher	0.125	Dunning 1993	0.0262	USEPA 1993c	84.0	0	16.0	USEPA 1993c	0	Sample and Suter 1994
Great blue heron	2.10	Butler 1992	0.1356	allometric equation (Nagy 2001)	100	0	0	USEPA 1993c; Quinney and Smith 1980	0	Sample and Suter 1994
Mallard	0.612	Bellrose 1980	0.0717	allometric equation (Nagy 2001)	0	86.7	10.0	Palmer 1976	3.3	Beyer et al. 1994
Marsh wren	0.010	Dunning 1993	0.0030	USEPA 1993c	0	0	95.0	USEPA 1993c	5.0	Assumed based on diet
Mammals										
Mink	0.726	Silva and Downing 1995	0.0349	USEPA 1993c	100.0	0.0	0.0	USEPA 1993c	0	Sample and Suter 1994
Muskrat	0.750	USEPA 1993c	0.0765	USEPA 1993c	0	90.6	0	USEPA 1993c	9.4	Beyer et al. 1994 (raccoon)
Raccoon	4.23	Silva and Downing 1995	0.1307	Conover 1989	7.0	40.0	43.6	USEPA 1993c	9.4	Beyer et al. 1994

TABLE 7-9
Exposure Parameters for Upper Trophic Level Ecological Receptors - Baseline
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Receptor	Body Weight (kg)		Food Ingestion Rate (kg/day - dry)		Dietary Composition (percent)				Sediment Ingestion (percent)	
	Value	Reference	Value	Reference	Fish	Aquatic Plants	Benthic Invert.	Reference	Value	Reference
Birds										
Belted kingfisher	0.148	Dunning 1993	0.0180	USEPA 1993c	84.0	0	16.0	USEPA 1993c	0	Sample and Suter 1994
Great blue heron	2.23	Quinney 1982	0.1254	allometric equation (Nagy 2001)	100	0	0	USEPA 1993c; Quinney and Smith 1980	0	Sample and Suter 1994
Mallard	1.18	Bellrose 1980	0.0564	allometric equation (Nagy 2001)	0	86.7	10.0	Palmer 1976	3.3	Beyer et al. 1994
Marsh wren	0.011	Dunning 1993	0.0025	USEPA 1993c	0	0	95.0	USEPA 1993c	5.0	Assumed based on diet
Mammals										
Mink	0.777	Silva and Downing 1995	0.0266	USEPA 1993c	100	0.0	0.0	USEPA 1993c	0	Sample and Suter 1994
Muskrat	1.17	Silva and Downing 1995	0.0596	USEPA 1993c	0	90.6	0	USEPA 1993c	9.4	Beyer et al. 1994 (raccoon)
Raccoon	5.94	Silva and Downing 1995	0.1031	Conover 1989	7.0	40.0	43.6	USEPA 1993c	9.4	Beyer et al. 1994

TABLE 7-10
Medium-Specific Screening Values
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Group	Screening Value	Units	Reference	Type	TOC (percent)
Surface Water/Pore Water						
Aluminum	Inorganics	87.0	ug/L	USEPA 2009a	Freshwater	
Antimony	Inorganics	500	ug/L	USEPA 2006	Marine	
Arsenic	Inorganics	36.0	ug/L	USEPA 2009a	Marine	
Barium	Inorganics	200	ug/L	Buchman 2008	Marine	
Beryllium	Inorganics	100	ug/L	Buchman 2008	Marine	
Cadmium (total)	Inorganics	8.85	ug/L	USEPA 2009a	Marine	
Cadmium (dissolved)	Inorganics	8.80	ug/L	USEPA 2009a	Marine	
Chromium (total)	Inorganics	50.4	ug/L	USEPA 2009a	Marine	
Chromium (dissolved)	Inorganics	50.0	ug/L	USEPA 2009a	Marine	
Cobalt	Inorganics	23.0	ug/L	Suter and Tsao 1996	Freshwater	
Copper (total)	Inorganics	3.73	ug/L	USEPA 2009a	Marine	
Copper (dissolved)	Inorganics	3.10	ug/L	USEPA 2009a	Marine	
Cyanide	Inorganics	1.00	ug/L	USEPA 2009a	Marine	
Iron	Inorganics	1,000	ug/L	USEPA 2009a	Freshwater	
Lead (total)	Inorganics	8.52	ug/L	USEPA 2009a	Marine	
Lead (dissolved)	Inorganics	8.10	ug/L	USEPA 2009a	Marine	
Manganese	Inorganics	100	ug/L	Buchman 2008	Marine	
Mercury (total)	Inorganics	1.11	ug/L	USEPA 2009a	Marine	
Mercury (dissolved)	Inorganics	0.94	ug/L	USEPA 2009a	Marine	
Nickel (total)	Inorganics	8.28	ug/L	USEPA 2009a	Marine	
Nickel (dissolved)	Inorganics	8.20	ug/L	USEPA 2009a	Marine	
Selenium (total)	Inorganics	71.1	ug/L	USEPA 2009a	Marine	
Selenium (dissolved)	Inorganics	71.0	ug/L	USEPA 2009a	Marine	
Silver	Inorganics	0.23	ug/L	USEPA 2001b	Marine	
Thallium	Inorganics	21.3	ug/L	USEPA 2001b	Marine	
Vanadium	Inorganics	50.0	ug/L	Buchman 2008	Marine	
Zinc (total)	Inorganics	85.6	ug/L	USEPA 2009a	Marine	
Zinc (dissolved)	Inorganics	81.0	ug/L	USEPA 2009a	Marine	
1,1,1-Trichloroethane	VOCs	312	ug/L	USEPA 2001b	Marine	
1,1,2,2-Tetrachloroethane	VOCs	90.2	ug/L	USEPA 2001b	Marine	

TABLE 7-10
Medium-Specific Screening Values
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Group	Screening Value	Units	Reference	Type	TOC (percent)
1,1,2-Trichloroethane	VOCs	550	ug/L	USEPA 2006	Marine	
1,1-Dichloroethane	VOCs	47.0	ug/L	USEPA 1996	Freshwater	
1,1-Dichloroethene	VOCs	2,240	ug/L	USEPA 2001b	Marine	
1,2,4-Trichlorobenzene	VOCs	5.40	ug/L	USEPA 2006	Marine	
1,2-Dichlorobenzene	VOCs	42.0	ug/L	USEPA 2006	Marine	
1,2-Dichloroethane	VOCs	1,130	ug/L	USEPA 2001b	Marine	
1,2-Dichloroethene (total)	VOCs	680	ug/L	USEPA 2006	Marine	
1,2-Dichloropropane	VOCs	2,400	ug/L	USEPA 2001b	Marine	
1,3-Dichlorobenzene	VOCs	28.5	ug/L	USEPA 2001b	Marine	
1,4-Dichlorobenzene	VOCs	19.9	ug/L	USEPA 2001b	Marine	
2-Butanone	VOCs	14,000	ug/L	Suter and Tsao 1996	Freshwater	
2-Hexanone	VOCs	99.0	ug/L	Suter and Tsao 1996	Freshwater	
4-Methyl-2-pentanone	VOCs	123,000	ug/L	USEPA 2006	Marine	
Acetone	VOCs	564,000	ug/L	USEPA 2006	Marine	
Benzene	VOCs	110	ug/L	USEPA 2006	Marine	
Bromoform	VOCs	640	ug/L	USEPA 2001b	Marine	
Bromomethane	VOCs	120	ug/L	USEPA 2001b	Marine	
Carbon disulfide	VOCs	0.92	ug/L	Suter and Tsao 1996	Freshwater	
Carbon tetrachloride	VOCs	1,500	ug/L	USEPA 2001b	Marine	
Chlorobenzene	VOCs	25.0	ug/L	USEPA 2006	Marine	
Chloroform	VOCs	815	ug/L	USEPA 2001b	Marine	
Chloromethane	VOCs	2,700	ug/L	USEPA 2001b	Marine	
cis-1,2-Dichloroethene	VOCs	680	ug/L	USEPA 2006	Marine	
cis-1,3-Dichloropropene	VOCs	7.90	ug/L	USEPA 2001b	Marine	
Ethylbenzene	VOCs	25.0	ug/L	USEPA 2006	Marine	
Isopropylbenzene	VOCs	2.60	ug/L	USEPA 2006	Freshwater	
m- and p-Xylene	VOCs	19.0	ug/L	Xylenes value	Marine	
Methylene chloride	VOCs	2,560	ug/L	USEPA 2001b	Marine	
Methyl-tert-butyl ether (MTBE)	VOCs	5,000	ug/L	Buchman 2008	Marine	
o-Xylene	VOCs	19.0	ug/L	Xylenes value	Marine	
Styrene	VOCs	910	ug/L	USEPA 2006	Marine	

TABLE 7-10
Medium-Specific Screening Values
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Group	Screening Value	Units	Reference	Type	TOC (percent)
Tetrachloroethene	VOCs	45.0	ug/L	USEPA 2001b	Marine	
Toluene	VOCs	215	ug/L	USEPA 2006	Marine	
trans-1,2-Dichloroethene	VOCs	680	ug/L	USEPA 2006	Marine	
trans-1,3-Dichloropropene	VOCs	7.90	ug/L	USEPA 2001b	Marine	
Trichloroethene	VOCs	1,940	ug/L	USEPA 2006	Marine	
Vinyl chloride	VOCs	930	ug/L	USEPA 2006	Freshwater	
Xylene, total	VOCs	19.0	ug/L	USEPA 2006	Marine	
Sediment						
Aluminum	Inorganics	18,000	mg/kg	Buchman 2008	Marine	
Antimony	Inorganics	2.00	mg/kg	Long and Morgan 1990	Marine	
Arsenic	Inorganics	8.20	mg/kg	Long et al. 1995	Marine	
Barium	Inorganics	48.0	mg/kg	Buchman 2008	Marine	
Cadmium	Inorganics	1.20	mg/kg	Long et al. 1995	Marine	
Chromium	Inorganics	81.0	mg/kg	Long et al. 1995	Marine	
Cobalt	Inorganics	10.0	mg/kg	Buchman 2008	Marine	
Copper	Inorganics	34.0	mg/kg	Long et al. 1995	Marine	
Iron	Inorganics	220,000	mg/kg	Buchman 2008	Marine	
Lead	Inorganics	46.7	mg/kg	Long et al. 1995	Marine	
Manganese	Inorganics	260	mg/kg	Buchman 2008	Marine	
Mercury	Inorganics	0.15	mg/kg	Long et al. 1995	Marine	
Nickel	Inorganics	20.9	mg/kg	Long et al. 1995	Marine	
Selenium	Inorganics	1.00	mg/kg	Buchman 2008	Marine	
Silver	Inorganics	1.00	mg/kg	Long et al. 1995	Marine	
Vanadium	Inorganics	57.0	mg/kg	Buchman 2008	Marine	
Zinc	Inorganics	150	mg/kg	Long et al. 1995	Marine	
1,1,1-Trichloroethane	VOCs	3,159	ug/kg	USEPA 2006	Marine	3.69
1,1,2,2-Tetrachloroethane	VOCs	745	ug/kg	USEPA 2006	Marine	3.69
1,1,2-Trichloroethane	VOCs	2,103	ug/kg	USEPA 2006	Marine	3.69
1,1-Dichloroethane	VOCs	99.6	ug/kg	Jones et al. 1997	Freshwater	3.69
1,1-Dichloroethene	VOCs	10,266	ug/kg	USEPA 2006	Marine	3.69
1,2,4-Trichlorobenzene	VOCs	1,745	ug/kg	USEPA 2006	Marine	3.69

TABLE 7-10
Medium-Specific Screening Values
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Group	Screening Value	Units	Reference	Type	TOC (percent)
1,2-Dichlorobenzene	VOCs	3,649	ug/kg	USEPA 2006	Marine	3.69
1,2-Dichloroethane	VOCs	923	ug/kg	Jones et al. 1997	Freshwater	3.69
1,2-Dichloroethene (total)	VOCs	1,476	ug/kg	Jones et al. 1997	Freshwater	3.69
1,3-Dichlorobenzene	VOCs	3,107	ug/kg	USEPA 2006	Marine	3.69
1,4-Dichlorobenzene	VOCs	110	ug/kg	Buchman 2008	Marine	
Benzene	VOCs	506	ug/kg	USEPA 2006	Marine	3.69
Bromoform	VOCs	4,827	ug/kg	USEPA 2006	Marine	3.69
Carbon disulfide	VOCs	3.14	ug/kg	Jones et al. 1997	Freshwater	3.69
Carbon tetrachloride	VOCs	26,730	ug/kg	USEPA 2006	Marine	3.69
Chlorobenzene	VOCs	598	ug/kg	USEPA 2006	Marine	3.69
Chloroform	VOCs	81.2	ug/kg	Jones et al. 1997	Freshwater	3.69
cis-1,2-Dichloroethene	VOCs	1,476	ug/kg	Jones et al. 1997	Freshwater	3.69
cis-1,3-Dichloropropene	VOCs	27.0	ug/kg	USEPA 2006	Marine	3.69
Ethylbenzene	VOCs	1,125	ug/kg	USEPA 2006	Marine	3.69
Isopropylbenzene	VOCs	317	ug/kg	USEPA 2006	Freshwater	3.69
m- and p-Xylene	VOCs	590	ug/kg	Jones et al. 1997	Freshwater	3.69
Methylene chloride	VOCs	1,365	ug/kg	Jones et al. 1997	Freshwater	3.69
o-Xylene	VOCs	590	ug/kg	Jones et al. 1997	Freshwater	3.69
Styrene	VOCs	26,085	ug/kg	USEPA 2006	Marine	3.69
Tetrachloroethene	VOCs	57.0	ug/kg	Buchman 2008	Marine	
Toluene	VOCs	4,007	ug/kg	USEPA 2006	Marine	3.69
trans-1,2-Dichloroethene	VOCs	1,476	ug/kg	Jones et al. 1997	Freshwater	3.69
trans-1,3-Dichloropropene	VOCs	27.0	ug/kg	USEPA 2006	Marine	3.69
Trichloroethene	VOCs	41.0	ug/kg	Buchman 2008	Marine	
Xylene, total	VOCs	590	ug/kg	Jones et al. 1997	Freshwater	3.69

TABLE 7-11
Uncertainty Factors Used In Food Web Models
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Convert From	Convert To	Uncertainty Factor
Chronic NOAEL	Chronic NOAEL	1
Chronic LOAEL	Chronic NOAEL	5
Subchronic NOAEL	Chronic NOAEL	10
Subchronic LOAEL	Chronic NOAEL	20
Acute NOAEL	Chronic NOAEL	30
Acute LOAEL	Chronic NOAEL	50
LD50	Chronic NOAEL	100

Uncertainty factors from Wentsel et al. (1996)

Durations are defined as follows (USEPA 1999; Sample et al. 1996):

- Acute: <14 days
- Subchronic: 14 - 90 days
- Chronic: >90 days or during critical life stage

TABLE 7-12
Ingestion Screening Values for Mammals
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Metals								
Arsenic	mouse	0.03	3 generations	oral in water	reproduction	1.26	0.25	Sample et al. 1996
Arsenic	dog	10.0	2 years	oral in diet	systemic	6.00	1.20	ATSDR 1993
Cadmium	rat	0.303	6 weeks	oral (gavage)	reproduction	10.0	1.00	Sample et al. 1996
Cadmium	dog	10.0	3 months	oral in diet	reproduction	3.75	0.75	ATSDR 1999
Chromium	rat	0.35	3 months	oral in water	mortality	131	26.3	Sample et al. 1996
Chromium	rat	0.35	1 year	oral in water	body weight/intake	16.4	3.28	Sample et al. 1996
Copper	mouse	0.03	1 month + GD 0-19	oral in diet	developmental	104	78.0	ATSDR 1990a
Copper	mink	1.00	357 days	oral in diet	reproduction	15.1	11.7	Sample et al. 1996
Lead	rat	0.35	3 generations	oral in diet	reproduction	80.0	8.00	Sample et al. 1996
Mercury	rat	0.35	3 generations	oral in diet	reproduction	0.16	0.032	Sample et al. 1996
Mercury	mink	1.00	93 days	oral in diet	survival/weight loss	0.25	0.15	Sample et al. 1996
Nickel	rat	0.35	3 generations	oral in diet	reproduction	80.0	40.0	Sample et al. 1996
Nickel	dog	10.0	2 years	oral in diet	systemic	62.5	25.0	ATSDR 1997
Selenium	rat	0.35	1 year	oral in water	reproduction	0.33	0.20	Sample et al. 1996
Silver	rat	0.35	2 weeks	oral in water	survival	45.3	9.06	ATSDR 1990b
Zinc	rat	0.35	GD 1-16	oral in diet	reproduction	320	160	Sample et al. 1996
Zinc	mink	1.00	25 weeks	oral	reproduction	104	20.8	ATSDR 1994
Volatile Organics								
1,1,2,2-Tetrachloroethane	rat	0.35	78 weeks	oral (gavage)	reproduction	380	76.0	ATSDR 1996
1,2,4-Trichlorobenzene	rat	0.35	3 generations	oral in water	reproduction	106	53	Coulston and Kolbye 1994
1,2-Dichlorobenzene	rat	0.35	chronic	oral (gavage)	liver/kidney	429	85.7	Coulston and Kolbye 1994
1,3-Dichlorobenzene	rat	0.35	chronic	oral (gavage)	liver/kidney	429	85.7	Coulston and Kolbye 1994
1,4-Dichlorobenzene	rat	0.35	GD 6-15	oral (gavage)	developmental	500	250	ATSDR 1998

TABLE 7-13
Ingestion Screening Values for Birds
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Test Organism	Body Weight (kg)	Duration	Exposure Route	Effect/Endpoint	LOAEL (mg/kg/d)	NOAEL (mg/kg/d)	Reference
Metals								
Arsenic	brown-headed cowbird	0.049	7 months	oral in diet	survival	7.38	2.46	Sample et al. 1996
Arsenic	mallard	1.00	128 days	oral in diet	survival	12.8	5.14	Sample et al. 1996
Cadmium	mallard	1.15	90 days	oral in diet	reproduction	20.0	1.45	Sample et al. 1996
Chromium	American black duck	1.25	10 months	oral in diet	reproduction	5.00	1.00	Sample et al. 1996
Copper	chicken (chicks)	0.534	10 weeks	oral in diet	growth/survival	61.7	47.0	Sample et al. 1996
Lead	Japanese quail	0.15	12 weeks	oral in diet	reproduction	11.3	1.13	Sample et al. 1996
Lead	American kestrel	0.13	7 months	oral in diet	reproduction	19.3	3.85	Sample et al. 1996
Mercury	red-tailed hawk	1.10	12 weeks	oral in diet	survival/neurological	1.20	0.49	USEPA 1995b
Mercury	Japanese quail	0.15	1 year	oral in diet	reproduction	0.90	0.45	Sample et al. 1996
Mercury	mallard	1.00	3 generations	oral in diet	reproduction	0.078	0.026	USEPA 1997c
Nickel	mallard	0.782	90 days	oral in diet	growth/survival	107	77.4	Sample et al. 1996
Selenium	black-crowned night-heron	0.88	94 days	oral in diet	reproduction	9.00	1.80	Sample et al. 1996
Selenium	mallard	1.00	100 days	oral in diet	reproduction	0.80	0.40	Sample et al. 1996
Selenium	screech owl	0.20	13.7 weeks	oral in diet	reproduction	1.50	0.44	Sample et al. 1996
Silver	mallard	1.10	14 days	oral in diet	survival	178	35.6	USEPA 1999
Silver	chicken (chicks)	0.80	not specified	oral in diet	growth	35.0	7.00	Eisler 1996
Zinc	chicken	1.94	44 weeks	oral in diet	reproduction	131	14.5	Sample et al. 1996
Volatile Organics								
1,1,2,2-Tetrachloroethane	--	--	--	--	--	NA	NA	--
1,2,4-Trichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
1,2-Dichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
1,3-Dichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002
1,4-Dichlorobenzene	northern bobwhite	0.19	14 days	oral	survival	161	32.2	TERRETOX 2002

NA - Not Available

TABLE 7-14
Screening Statistics - Sites 1 and 3 Surface Water
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Volatile Organic Compounds (UG/L)																
1,1,1-Trichloroethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	312	-- / --	0.002	0.001	0.001	0.001	NO
1,1,2,2-Tetrachloroethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	90.2	-- / --	0.006	0.003	0.003	0.003	NO
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,1,2-Trichloroethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	550	-- / --	0.001	0.0005	0.0005	0.0005	NO
1,1-Dichloroethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	47.0	-- / --	0.011	0.005	0.005	0.005	NO
1,1-Dichloroethene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	2,240	-- / --	0.0002	0.0001	0.0001	0.0001	NO
1,2,4-Trichlorobenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	5.40	-- / --	0.09	0.05	0.05	0.05	NO
1,2-Dibromo-3-chloropropane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dibromoethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dichlorobenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	42.0	-- / --	0.012	0.006	0.006	0.006	NO
1,2-Dichloroethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	1,130	-- / --	0.0004	0.0002	0.0002	0.0002	NO
1,2-Dichloroethene (total)	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	680	-- / --	0.001	0.0004	0.0004	0.0004	NO
1,2-Dichloropropane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	2,400	-- / --	0.0002	0.0001	0.0001	0.0001	NO
1,3-Dichlorobenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	28.5	-- / --	0.018	0.009	0.009	0.009	NO
1,4-Dichlorobenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	19.9	-- / --	0.025	0.013	0.013	0.013	NO
2-Butanone	-- -- --	0 / 0	--	--	--	--	--	--	--	14,000	-- / --	All data were rejected				NO
2-Hexanone	2.50 - 2.50	0 / 13	--	--	--	1.25	0.0	1.25	1.25	99.0	-- / --	0.025	0.013	0.013	0.013	NO
4-Methyl-2-pentanone	2.50 - 2.50	0 / 13	--	--	--	1.25	0.0	1.25	1.25	123,000	-- / --	0.00002	0.00001	0.00001	0.00001	NO
Acetone	3.80 - 7.30	0 / 13	--	--	--	2.72	0.56	3.00	2.67	564,000	-- / --	0.00001	0.000005	0.000005	0.000005	NO
Benzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	110	-- / --	0.005	0.002	0.002	0.002	NO
Bromodichloromethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Bromoform	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	640	-- / --	0.0008	0.0004	0.0004	0.0004	NO
Bromomethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	120	-- / --	0.004	0.002	0.002	0.002	NO
Carbon disulfide	0.50 - 0.50	6 / 13	0.11	0.14	YS03-SW05-0709	0.19	0.065	0.22	0.18	0.92	0 / 13	0.15	--	--	--	NO
Carbon tetrachloride	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	1,500	-- / --	0.0003	0.0002	0.0002	0.0002	NO
Chlorobenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	25.0	-- / --	0.02	0.01	0.01	0.01	NO
Chloroethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chloroform	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	815	-- / --	0.0006	0.0003	0.0003	0.0003	NO
Chloromethane	0.50 - 0.50	2 / 13	0.12	0.13	YS03-SW05-0709	0.23	0.047	0.25	0.22	2,700	0 / 13	0.00005	--	--	--	NO
cis-1,2-Dichloroethene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	680	-- / --	0.0007	0.0004	0.0004	0.0004	NO
cis-1,3-Dichloropropene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	7.90	-- / --	0.063	0.032	0.032	0.032	NO
Cyclohexane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dibromochloromethane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dichlorodifluoromethane (Freon-12)	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Ethylbenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	25.0	-- / --	0.02	0.01	0.01	0.01	NO
Isopropylbenzene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	2.60	-- / --	0.19	0.10	0.10	0.10	NO
m- and p-Xylene	1.00 - 1.00	0 / 13	--	--	--	0.50	0.0	0.50	0.50	19.0	-- / --	0.05	0.03	0.03	0.03	NO
Methyl acetate	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylcyclohexane	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylene chloride	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	2,560	-- / --	0.0002	0.0001	0.0001	0.0001	NO
Methyl-tert-butyl ether (MTBE)	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	5,000	-- / --	0.0001	0.00005	0.00005	0.00005	NO
o-Xylene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	19.0	-- / --	0.03	0.01	0.01	0.01	NO
Styrene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	910	-- / --	0.0005	0.0003	0.0003	0.0003	NO
Tetrachloroethene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	45.0	-- / --	0.011	0.006	0.006	0.006	NO

TABLE 7-14
Screening Statistics - Sites 1 and 3 Surface Water
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Toluene	0.50 - 0.50	3 / 13	0.10	0.13	YS03-SW04-0709	0.22	0.059	0.25	0.21	215	0 / 13	0.001	--	--	--	NO
trans-1,2-Dichloroethene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	680	-- / --	0.001	0.0004	0.0004	0.0004	NO
trans-1,3-Dichloropropene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	7.90	-- / --	0.063	0.032	0.032	0.032	NO
Trichloroethene	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	1,940	-- / --	0.0003	0.0001	0.0001	0.0001	NO
Trichlorofluoromethane(Freon-11)	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vinyl chloride	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	930	-- / --	0.0005	0.0003	0.0003	0.0003	NO
Xylene, total	0.50 - 0.50	0 / 13	--	--	--	0.25	0.0	0.25	0.25	19.0	-- / --	0.026	0.013	0.013	0.013	NO
Total Metals (UG/L)																
Aluminum	413 - 437	11 / 13	564	2,980	YS01-SW31-0709	866	697	1,210	694	87.0	11 / 13	34.3	9.95	13.9	7.98	YES
Antimony	10.0 - 10.0	0 / 13	--	--	--	5.00	0.0	5.00	5.00	500	-- / --	0.02	0.01	0.01	0.01	NO
Arsenic	10.0 - 10.0	0 / 13	--	--	--	5.00	0.0	5.00	5.00	36.0	-- / --	0.28	0.14	0.14	0.14	NO
Barium	-- - --	13 / 13	26.5	41.1	YS01-SW31-0709	29.4	3.68	31.2	29.2	200	0 / 13	0.21	0.15	0.16	0.15	NO
Beryllium	0.37 - 5.00	0 / 13	--	--	--	0.60	0.85	1.02	0.35	100	-- / --	0.05	0.01	0.01	0.003	NO
Cadmium	5.00 - 5.00	0 / 13	--	--	--	2.50	0.0	2.50	2.50	8.85	-- / --	0.56	0.28	0.28	0.28	NO
Calcium [3]	-- - --	13 / 13	216,000	233,000	YS03-SW06-0709	228,308	4,889	230,724	228,259	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chromium	0.66 - 10.0	0 / 13	--	--	--	2.70	2.28	3.83	1.52	50.4	-- / --	0.20	0.05	0.08	0.03	NO
Cobalt	5.00 - 5.00	2 / 13	0.91	1.90	YS01-SW31-0709	2.33	0.46	2.56	2.26	23.0	0 / 13	0.08	--	--	--	NO
Copper	5.00 - 5.00	1 / 13	9.60	9.60	YS01-SW31-0709	3.05	1.97	4.02	2.77	3.73	1 / 13	2.57	0.82	1.08	0.74	YES
Iron	-- - --	13 / 13	506	4,990	YS01-SW31-0709	1,133	1,175	1,713	909	1,000	2 / 13	4.99	1.13	1.71	0.91	YES
Lead	3.00 - 5.20	1 / 13	4.20	4.20	YS03-SW11-0709	1.79	0.78	2.18	1.69	8.52	0 / 13	0.49	0.21	0.26	0.20	NO
Magnesium [3]	-- - --	13 / 13	641,000	747,000	YS03-SW08-0709	707,769	28,484	721,850	707,227	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Manganese	-- - --	13 / 13	47.7	235	YS01-SW31-0709	88.4	51.2	114	79.2	100	3 / 13	2.35	0.88	1.14	0.79	YES
Mercury	0.20 - 0.20	1 / 13	0.10	0.10	YS01-SW32-0709	0.10	0.0	0.10	0.10	1.11	0 / 13	0.09	0.09	0.09	0.09	NO
Nickel	40.0 - 40.0	0 / 13	--	--	--	20.0	0.0	20.0	20.0	8.28	-- / --	4.83	2.42	2.42	2.42	NO[4]
Potassium [3]	-- - --	13 / 13	312,000	345,000	YS03-SW08-0709	334,538	9,597	339,282	334,408	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Selenium	5.00 - 5.00	0 / 13	--	--	--	2.50	0.0	2.50	2.50	71.1	-- / --	0.07	0.04	0.04	0.04	NO
Silver	5.00 - 5.00	0 / 13	--	--	--	2.50	0.0	2.50	2.50	0.23	-- / --	21.7	10.9	10.9	10.9	NO[4]
Sodium [3]	-- - --	13 / 13	4,970,000	5,470,000	YS03-SW05-0709	5,213,846	144,022	5,285,039	5,212,005	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Thallium	10.0 - 10.0	0 / 13	--	--	--	5.00	0.0	5.00	5.00	21.3	-- / --	0.47	0.23	0.23	0.23	NO
Vanadium	-- - --	13 / 13	3.20	9.40	YS01-SW31-0709	4.25	1.60	5.05	4.08	50.0	0 / 13	0.19	0.09	0.10	0.08	NO
Zinc	3.50 - 23.2	1 / 13	33.5	33.5	YS03-SW08-0709	6.11	8.57	10.3	4.08	85.6	0 / 13	0.39	0.07	0.12	0.05	NO
Dissolved Metals (UG/L)																
Aluminum	33.5 - 227	0 / 13	--	--	--	60.0	30.5	75.1	52.1	87.0	-- / --	2.61	0.69	0.86	0.60	NO
Antimony	10.0 - 10.0	0 / 13	--	--	--	5.00	0.0	5.00	5.00	500	-- / --	0.02	0.01	0.01	0.01	NO
Arsenic	10.0 - 10.0	9 / 13	2.70	4.40	YS01-SW31-0709	3.97	0.90	4.42	3.87	36.0	0 / 13	0.12	0.11	0.12	0.11	NO
Barium	-- - --	13 / 13	24.9	40.3	YS01-SW31-0709	27.5	3.95	29.5	27.3	200	0 / 13	0.20	0.14	0.15	0.14	NO
Beryllium	0.91 - 5.00	0 / 13	--	--	--	0.79	0.76	1.17	0.62	100	-- / --	0.05	0.01	0.01	0.01	NO
Cadmium	5.00 - 5.00	1 / 13	0.35	0.35	YS01-SW31-0709	2.33	0.60	2.63	2.15	8.80	0 / 13	0.04	--	--	--	NO
Calcium[3]	-- - --	13 / 13	208,000	238,000	YS03-SW10-0709	230,231	7,748	234,061	230,105	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chromium	10.0 - 10.0	0 / 13	--	--	--	5.00	0.0	5.00	5.00	50.0	-- / --	0.20	0.10	0.10	0.10	NO
Cobalt	5.00 - 5.00	6 / 13	0.60	1.10	YS01-SW33-0709	1.73	0.88	2.16	1.48	23.0	0 / 13	0.05	--	--	--	NO
Copper	5.00 - 5.00	0 / 13	--	--	--	2.50	0.0	2.50	2.50	3.10	-- / --	1.61	0.81	0.81	0.81	NO
Iron	-- - --	13 / 13	47.3	270	YS01-SW33-0709	116	78.2	154	96.6	1,000	0 / 13	0.27	0.12	0.15	0.10	NO

TABLE 7-14
Screening Statistics - Sites 1 and 3 Surface Water
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Arithmetic Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Lead	3.00 - 3.00	0 / 13	--	--	--	1.50	0.0	1.50	1.50	8.10	-- / --	0.37	0.19	0.19	0.19	NO
Magnesium[3]	-- - --	13 / 13	626,000	727,000	YS03-SW04-0709	710,462	27,073	723,844	709,953	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Manganese	-- - --	13 / 13	9.50	202	YS01-SW31-0709	58.5	50.6	83.5	43.6	100	1 / 13	2.02	0.58	0.84	0.44	NO
Mercury	0.20 - 0.20	0 / 13	--	--	--	0.10	0.0	0.10	0.10	0.94	-- / --	0.21	0.11	0.11	0.11	NO
Nickel	40.0 - 40.0	0 / 13	--	--	--	20.0	0.0	20.0	20.0	8.20	-- / --	4.88	2.44	2.44	2.44	NO[4]
Potassium[3]	-- - --	13 / 13	304,000	360,000	YS03-SW09-0709	350,077	14,511	357,250	349,777	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Selenium	5.00 - 5.00	1 / 13	3.10	3.10	YS03-SW06-0709	2.55	0.17	2.63	2.54	71.0	0 / 13	0.044	0.036	0.037	0.036	NO
Silver	5.00 - 5.00	0 / 13	--	--	--	2.50	0.0	2.50	2.50	0.23	-- / --	21.7	10.9	10.9	10.9	NO[4]
Sodium[3]	-- - --	13 / 13	4,930,000	5,690,000	YS03-SW09-0709	5,530,769	188,346	5,623,872	5,527,619	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Thallium	4.00 - 10.0	0 / 13	--	--	--	3.73	1.27	4.36	3.52	21.3	-- / --	0.47	0.18	0.20	0.17	NO
Vanadium	2.20 - 2.40	10 / 13	2.00	3.20	YS01-SW33-0709	2.32	0.75	2.69	2.19	50.0	0 / 13	0.06	0.05	0.05	0.04	NO
Zinc	20.0 - 20.0	11 / 13	4.80	28.0	YS01-SW33-0709	17.6	8.16	21.6	15.5	81.0	0 / 13	0.35	0.22	0.27	0.19	NO
Other Parameters (MG/L)																
Total dissolved solids (TDS)	-- - --	13 / 13	19,500	25,900	YS03-SW06-0709	24,454	1,667	25,278	24,395	--	-- / --	--	--	--	--	--

NOTES:
NSV - No Screening Value
1 - Count of detected samples exceeding or equaling screening value
2 - Shaded cells indicate hazard quotient based on reporting limits
3 - Macronutrient - Not considered to be a COPC
4 - See uncertainties
MG/L - Milligrams per liter
UG/L - Micrograms per liter

TABLE 7-15
Screening Statistics - Sites 1 and 3 Sediment
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Volatile Organic Compounds (UG/KG)																
1,1,1-Trichloroethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	3,159	-- / --	0.01	0.003	0.004	0.003	NO
1,1,2,2-Tetrachloroethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	745	-- / --	0.05	0.013	0.016	0.012	NO
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,1,2-Trichloroethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	2,103	-- / --	0.017	0.005	0.006	0.004	NO
1,1-Dichloroethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	99.6	-- / --	0.35	0.10	0.12	0.09	NO
1,1-Dichloroethene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	10,266	-- / --	0.003	0.001	0.001	0.001	NO
1,2,4-Trichlorobenzene	6.30 - 35.0	0 / 14	--	--	--	9.56	4.92	11.9	8.30	1,745	-- / --	0.020	0.005	0.007	0.005	NO
1,2-Dibromo-3-chloropropane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dibromoethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dichlorobenzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	3,649	-- / --	0.010	0.003	0.003	0.002	NO
1,2-Dichloroethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	923	-- / --	0.038	0.011	0.013	0.010	NO
1,2-Dichloropropane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,3-Dichlorobenzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	3,107	-- / --	0.011	0.003	0.004	0.003	NO
1,4-Dichlorobenzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	110	-- / --	0.32	0.09	0.11	0.08	NO
2-Butanone	14.0 - 89.0	1 / 14	6.60	6.60	YS01-SD30-0709	19.0	12.8	25.1	15.5	NSV	-- / --	NSV	NSV	NSV	NSV	YES
2-Hexanone	16.0 - 89.0	0 / 14	--	--	--	25.1	11.9	30.7	22.1	NSV	-- / --	NSV	NSV	NSV	NSV	NO
4-Methyl-2-pentanone	16.0 - 89.0	0 / 14	--	--	--	25.1	11.9	30.7	22.1	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Acetone	57.0 - 510	0 / 14	--	--	--	72.2	56.6	99.0	60.9	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Benzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	506	-- / --	0.07	0.02	0.02	0.02	NO
Bromodichloromethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Bromoform	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	4,827	-- / --	0.007	0.002	0.003	0.002	NO
Bromomethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Carbon disulfide	-- - --	14 / 14	3.00	38.0	YS03-SD08-0709	11.7	8.60	15.8	9.64	3.14	13 / 14	12.1	3.73	5.03	3.07	YES
Carbon tetrachloride	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	26,730	-- / --	0.0013	0.0004	0.0005	0.0003	NO
Chlorobenzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	598	-- / --	0.06	0.02	0.02	0.01	NO
Chloroethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chloroform	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	81.2	-- / --	0.43	0.12	0.15	0.11	NO
Chloromethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
cis-1,2-Dichloroethene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	1,476	-- / --	0.024	0.007	0.008	0.006	NO
cis-1,3-Dichloropropene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	27.0	-- / --	1.30	0.37	0.45	0.33	NO
Cyclohexane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dibromochloromethane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dichlorodifluoromethane (Freon-12)	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Ethylbenzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	1,125	-- / --	0.031	0.009	0.011	0.008	NO
Isopropylbenzene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	317	-- / --	0.11	0.031	0.038	0.028	NO
m- and p-Xylene	13.0 - 71.0	0 / 14	--	--	--	20.1	9.44	24.6	17.8	590	-- / --	0.12	0.034	0.042	0.030	NO
Methyl acetate	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylcyclohexane	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylene chloride	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	1,365	-- / --	0.026	0.007	0.009	0.006	NO
Methyl-tert-butyl ether (MTBE)	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
o-Xylene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	590	-- / --	0.059	0.017	0.021	0.015	NO
Styrene	6.30 - 35.0	1 / 14	4.60	4.60	YS03-SD12-0709	9.57	4.91	11.9	8.31	26,085	0 / 14	0.0002	--	--	--	NO
Tetrachloroethene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	57.0	-- / --	0.61	0.18	0.21	0.15	NO
Toluene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	4,007	-- / --	0.009	0.002	0.003	0.002	NO
trans-1,2-Dichloroethene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	1,476	-- / --	0.02	0.007	0.008	0.006	NO
trans-1,3-Dichloropropene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	27.0	-- / --	1.30	0.37	0.45	0.33	NO

TABLE 7-15
Screening Statistics - Sites 1 and 3 Sediment
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Trichloroethene	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	41.0	-- / --	0.85	0.24	0.30	0.22	NO
Trichlorofluoromethane(Freon-11)	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vinyl chloride	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Xylene, total	6.30 - 35.0	0 / 14	--	--	--	9.99	4.70	12.2	8.82	590	-- / --	0.06	0.017	0.021	0.015	NO
Metals (MG/KG)																
Aluminum	-- - --	14 / 14	395	27,800	YS03-SD08-0709	15,597	10,169	20,410	9,171	18,000	9 / 14	1.54	0.87	1.13	0.51	YES
Antimony	1.20 - 4.10	0 / 14	--	--	--	1.30	0.45	1.51	1.21	2.00	-- / --	2.05	0.65	0.75	0.61	NO
Arsenic	1.20 - 1.30	12 / 14	1.60	11.6	YS01-SD33-0709	6.42	4.09	8.35	4.42	8.20	6 / 14	1.41	0.78	1.02	0.54	YES
Barium	-- - --	14 / 14	2.10	51.4	YS03-SD08-0709	30.8	17.1	38.9	22.9	48.0	1 / 14	1.07	0.64	0.81	0.48	NO
Beryllium	0.13 - 1.60	7 / 14	1.20	1.50	YS01-SD32-0709	0.83	0.53	1.08	0.57	NSV	-- / --	NSV	NSV	NSV	NSV	YES
Cadmium	0.58 - 2.10	0 / 14	--	--	--	0.65	0.23	0.76	0.60	1.20	-- / --	1.75	0.54	0.63	0.50	NO
Calcium [3]	-- - --	14 / 14	182	8,890	YS03-SD03-0709	2,500	2,032	3,462	1,859	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chromium	-- - --	14 / 14	0.88	55.1	YS03-SD08-0709	31.6	20.6	41.4	18.9	81.0	0 / 14	0.68	0.39	0.51	0.23	NO
Cobalt	-- - --	14 / 14	0.11	10.0	YS03-SD08-0709	5.63	3.51	7.29	3.53	10.0	1 / 14	1.00	0.56	0.73	0.35	NO
Copper	-- - --	14 / 14	0.47	29.7	YS03-SD08-0709	18.4	11.0	23.7	11.9	34.0	0 / 14	0.87	0.54	0.70	0.35	NO
Iron	-- - --	14 / 14	471	42,300	YS03-SD09-0709	26,228	16,969	34,259	15,288	220,000	0 / 14	0.19	0.12	0.16	0.07	NO
Lead	-- - --	14 / 14	1.60	35.5	YS03-SD08-0709	20.4	10.9	25.6	15.1	46.7	0 / 14	0.76	0.44	0.55	0.32	NO
Magnesium [3]	-- - --	14 / 14	37.4	8,680	YS03-SD08-0709	5,267	3,135	6,751	2,877	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Manganese	-- - --	14 / 14	1.60	349	YS03-SD09-0709	185	125	244	97.8	260	4 / 14	1.34	0.71	0.94	0.38	NO
Mercury	0.037 - 0.083	11 / 14	0.030	0.12	YS03-SD03-0709	0.059	0.028	0.072	0.052	0.15	0 / 14	0.80	0.39	0.48	0.34	NO
Nickel	-- - --	14 / 14	0.23	26.6	YS03-SD08-0709	14.9	9.39	19.4	8.84	20.9	5 / 14	1.27	0.71	0.93	0.42	NO
Potassium [3]	-- - --	14 / 14	29.2	5,420	YS03-SD08-0709	3,130	2,052	4,101	1,641	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Selenium	0.50 - 3.60	0 / 12	--	--	--	1.16	0.43	1.39	1.05	1.00	-- / --	3.60	1.16	1.39	1.05	NO[4]
Silver	0.58 - 2.10	0 / 14	--	--	--	0.65	0.23	0.76	0.60	1.00	-- / --	2.10	0.65	0.76	0.60	NO
Sodium [3]	142 - 142	13 / 14	657	15,000	YS03-SD08-0709	8,136	5,028	10,516	4,869	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Thallium	1.20 - 4.10	0 / 14	--	--	--	1.30	0.45	1.51	1.21	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vanadium	-- - --	14 / 14	0.79	73.8	YS03-SD08-0709	40.3	25.0	52.1	24.4	57.0	4 / 14	1.29	0.71	0.91	0.43	NO
Zinc	-- - --	14 / 14	2.50	125	YS01-SD32-0709	77.9	46.0	99.7	51.2	150	0 / 14	0.83	0.52	0.66	0.34	NO
Other Parameters																
Alkalinity (MG/KG)	200 - 200	3 / 14	173	286	YS03-SD09-0709	125	54.7	151	117	--	-- / --	--	--	--	--	--
pH	-- - --	14 / 14	4.90	7.60	YS03-SD11-0709	6.89	0.72	7.23	6.85	--	-- / --	--	--	--	--	--
Total organic carbon (MG/KG)	-- - --	14 / 14	3,556	159,100	YS03-SD03-0709	36,881	39,537	55,594	25,284	--	-- / --	--	--	--	--	--

NOTES:
NSV - No Screening Value
1 - Count of detected samples exceeding or equaling screening value
2 - Shaded cells indicate hazard quotient based on reporting limits
3 - Macronutrient - Not considered to be a COPC
4 - See uncertainties
MG/KG - Milligrams per kilogram
UG/KG - Micrograms per kilogram

TABLE 7-16
Screening Statistics - Sites 1 and 3 Pore Water
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Volatile Organic Compounds (UG/L)																
1,1,1-Trichloroethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	312	-- / --	0.008	0.002	0.003	0.001	NO
1,1,2,2-Tetrachloroethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	90.2	-- / --	0.028	0.006	0.011	0.005	NO
1,1,2-Trichloro-1,2,2-trifluoroethane(Freon-113)	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,1,2-Trichloroethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	550	-- / --	0.005	0.001	0.002	0.001	NO
1,1-Dichloroethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	47.0	-- / --	0.053	0.012	0.021	0.009	NO
1,1-Dichloroethene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	2,240	-- / --	0.0011	0.0003	0.0005	0.0002	NO
1,2,4-Trichlorobenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	5.40	-- / --	0.46	0.11	0.19	0.08	NO
1,2-Dibromo-3-chloropropane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dibromoethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
1,2-Dichlorobenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	42.0	-- / --	0.06	0.01	0.02	0.01	NO
1,2-Dichloroethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	1,130	-- / --	0.002	0.0005	0.0009	0.0004	NO
1,2-Dichloroethene (total)	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	680	-- / --	0.004	0.0009	0.0015	0.0006	NO
1,2-Dichloropropane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	2,400	-- / --	0.001	0.0002	0.0004	0.0002	NO
1,3-Dichlorobenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	28.5	-- / --	0.09	0.02	0.04	0.01	NO
1,4-Dichlorobenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	19.9	-- / --	0.13	0.03	0.05	0.02	NO
2-Butanone	13.0 - 13.0	5 / 6	0.69	2.80	YS03-WN03-0909	2.27	2.21	4.09	1.65	14,000	0 / 6	0.0002	0.0002	0.0003	0.0001	NO
2-Hexanone	2.50 - 13.0	1 / 6	0.98	0.98	YS03-WN01-0909	2.96	2.75	5.22	2.08	99.0	0 / 6	0.01	--	--	--	NO
4-Methyl-2-pentanone	2.50 - 13.0	0 / 6	--	--	--	3.00	2.71	5.23	2.17	123,000	-- / --	0.00011	0.00002	0.00004	0.00002	NO
Acetone	2.50 - 13.0	3 / 6	1.70	7.20	YS01-WN02-0909	4.21	2.79	6.50	3.33	564,000	0 / 6	0.00001	0.00001	0.00001	0.00001	NO
Benzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	110	-- / --	0.023	0.005	0.009	0.004	NO
Bromodichloromethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Bromoform	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	640	-- / --	0.0039	0.0009	0.0016	0.0007	NO
Bromomethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	120	-- / --	0.021	0.005	0.008	0.004	NO
Carbon disulfide	0.50 - 2.50	4 / 6	0.27	3.80	YS03-WN03-0909	1.36	1.44	2.55	0.78	0.92	2 / 6	4.13	1.48	2.77	0.85	YES
Carbon tetrachloride	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	1,500	-- / --	0.0017	0.0004	0.0007	0.0003	NO
Chlorobenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	25.0	-- / --	0.10	0.02	0.04	0.02	NO
Chloroethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Chloroform	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	815	-- / --	0.0031	0.0007	0.0012	0.0005	NO
Chloromethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	2,700	-- / --	0.0009	0.0002	0.0004	0.0002	NO
cis-1,2-Dichloroethene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	680	-- / --	0.0037	0.0009	0.0015	0.0006	NO
cis-1,3-Dichloropropene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	7.90	-- / --	0.32	0.07	0.13	0.05	NO
Cyclohexane	0.50 - 0.50	5 / 6	0.76	2.00	YS03-WN03-0909	1.15	0.60	1.64	0.97	NSV	-- / --	NSV	NSV	NSV	NSV	YES
Dibromochloromethane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Dichlorodifluoromethane (Freon-12)	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Ethylbenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	25.0	-- / --	0.10	0.02	0.04	0.02	NO
Isopropylbenzene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	2.60	-- / --	0.96	0.22	0.39	0.16	NO
m- and p-Xylene	1.00 - 5.00	0 / 6	--	--	--	1.17	1.03	2.02	0.85	19.0	-- / --	0.26	0.06	0.11	0.04	NO
Methyl acetate	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylcyclohexane	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Methylene chloride	0.50 - 0.50	2 / 6	2.30	2.40	YS03-WN03-0909	0.95	1.08	1.84	0.53	2,560	0 / 6	0.0009	0.0004	0.0007	0.0002	NO
Methyl-tert-butyl ether (MTBE)	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	5,000	-- / --	0.0005	0.0001	0.0002	0.0001	NO
o-Xylene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	19.0	-- / --	0.13	0.03	0.05	0.02	NO
Styrene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	910	-- / --	0.003	0.0006	0.0011	0.0005	NO
Tetrachloroethene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	45.0	-- / --	0.06	0.01	0.02	0.01	NO

TABLE 7-16
Screening Statistics - Sites 1 and 3 Pore Water
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Range of Non-Detect Values	Frequency of Detection	Minimum Concentration Detected	Maximum Concentration Detected	Sample ID of Maximum Detected Concentration	Arithmetic Mean	Standard Deviation of Mean	95% UCL (Norm)	Geometric Mean	Screening Value	Frequency of Exceedance[1]	Maximum Hazard Quotient[2]	Mean Hazard Quotient	95% UCL Hazard Quotient	Geometric Mean Hazard Quotient	COPC?
Toluene	0.50 - 0.50	3 / 6	0.15	0.96	YS03-WN03-0909	0.45	0.36	0.75	0.35	215	0 / 6	0.004	0.002	0.003	0.002	NO
trans-1,2-Dichloroethene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	680	-- / --	0.004	0.001	0.001	0.001	NO
trans-1,3-Dichloropropene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	7.90	-- / --	0.32	0.07	0.13	0.05	NO
Trichloroethene	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	1,940	-- / --	0.0013	0.0003	0.0005	0.0002	NO
Trichlorofluoromethane(Freon-11)	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	NSV	-- / --	NSV	NSV	NSV	NSV	NO
Vinyl chloride	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	930	-- / --	0.0027	0.0006	0.0011	0.0005	NO
Xylene, total	0.50 - 2.50	0 / 6	--	--	--	0.58	0.52	1.01	0.43	19.0	-- / --	0.13	0.03	0.05	0.02	NO

NOTES:
NSV - No Screening Value
1 - Count of detected samples exceeding or equaling screening value
2 - Shaded cells indicate hazard quotient based on reporting limits
UG/L - Micrograms per liter

TABLE 7-17
Hazard Quotients for Food Web Exposures - Maximum - Aquatic Receptors
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Mink		Muskrat		Marsh wren		Belted kingfisher		Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Metals														
Arsenic	0.25	0.05	0.06	0.01	5.13	1.03	1.02	0.34	0.10	0.04	0.02	<0.01	0.28	0.11
Cadmium	0.24	0.05	0.02	<0.01	0.65	0.07	1.32	0.10	0.19	0.01	0.02	<0.01	0.54	0.04
Chromium	0.11	0.02	0.03	<0.01	0.29	0.06	3.82	0.76	0.71	0.14	0.14	0.03	0.80	0.16
Copper	0.30	0.23	0.01	<0.01	0.03	0.02	1.47	1.12	0.18	0.14	<0.01	<0.01	0.10	0.08
Lead	0.06	<0.01	0.01	<0.01	0.23	0.02	1.01	0.20	0.21	0.04	0.04	<0.01	1.73	0.17
Mercury	0.09	0.05	0.18	0.11	1.77	0.35	3.92	1.31	4.16	1.39	1.37	0.46	2.52	0.84
Nickel	0.03	0.01	0.05	0.02	0.09	0.05	0.03	0.02	0.06	0.05	0.02	0.02	0.05	0.04
Selenium	1.00	0.61	0.87	0.52	5.18	3.14	2.75	1.38	0.42	0.08	0.13	0.03	2.89	1.45
Silver	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	0.54	0.11	0.04	<0.01	0.14	0.07	12.1	1.33	1.60	0.18	0.08	<0.01	2.11	0.23
Volatile Organics														
1,1,2,2-Tetrachloroethane	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

NA - Screening Value Not Available
Shaded cells indicate HQ > 1

TABLE 7-18
Hazard Quotients for Food Web Exposures - Arithmetic Mean - Aquatic Receptors
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Muskrat		Marsh wren			Belted kingfisher		Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	MATC	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Metals													
Arsenic	0.03	<0.01	0.17	0.03	0.28	0.16	0.09	0.03	0.01	<0.01	<0.01	<0.01	<0.01
Cadmium	<0.01	<0.01	0.02	<0.01	0.07	0.02	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01
Chromium	0.03	<0.01	0.07	0.01	0.90	0.40	0.18	0.17	0.03	0.07	0.01	0.13	0.03
Copper	0.02	0.01	<0.01	<0.01	0.08	0.07	0.06	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Lead	<0.01	<0.01	0.02	<0.01	0.15	0.07	0.03	0.05	<0.01	0.02	<0.01	0.06	<0.01
Mercury	<0.01	<0.01	0.04	<0.01	0.54	0.31	0.18	0.80	0.27	0.41	0.14	0.05	0.02
Selenium	0.08	0.05	0.18	0.11	0.64	0.45	0.32	0.08	0.02	0.04	<0.01	0.09	0.04
Zinc	0.04	<0.01	0.01	<0.01	1.14	0.38	0.13	0.18	0.02	0.04	<0.01	0.11	0.01

Shaded cells indicate HQ > 1

TABLE 7-19
Hazard Quotients for Food Web Exposures - 95 Percent UCL of the Arithmetic Mean - Aquatic Receptors
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Raccoon		Muskrat		Marsh wren			Belted kingfisher		Great blue heron		Mallard	
	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	MATC	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL	NOAEL	LOAEL
Metals													
Arsenic	0.04	<0.01	0.22	0.04	0.37	0.21	0.12	0.04	0.01	0.01	<0.01	<0.01	<0.01
Cadmium	0.01	<0.01	0.02	<0.01	0.08	0.02	<0.01	0.02	<0.01	<0.01	<0.01	0.01	<0.01
Chromium	0.03	<0.01	0.09	0.02	1.18	0.53	0.24	0.23	0.05	0.09	0.02	0.16	0.03
Copper	0.02	0.01	<0.01	<0.01	0.10	0.09	0.08	0.01	0.01	<0.01	<0.01	<0.01	<0.01
Lead	<0.01	<0.01	0.02	<0.01	0.18	0.08	0.04	0.06	0.01	0.03	<0.01	0.08	<0.01
Mercury	<0.01	<0.01	0.05	<0.01	0.66	0.38	0.22	0.98	0.33	0.51	0.17	0.06	0.02
Selenium	0.10	0.06	0.21	0.13	0.77	0.54	0.38	0.09	0.02	0.04	<0.01	0.10	0.05
Zinc	0.06	0.01	0.01	<0.01	1.45	0.48	0.16	0.23	0.03	0.06	<0.01	0.14	0.02

Shaded cells indicate HQ > 1

TABLE 7-20
Comparison of Site Sediment COPC Concentrations to Background Concentrations
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

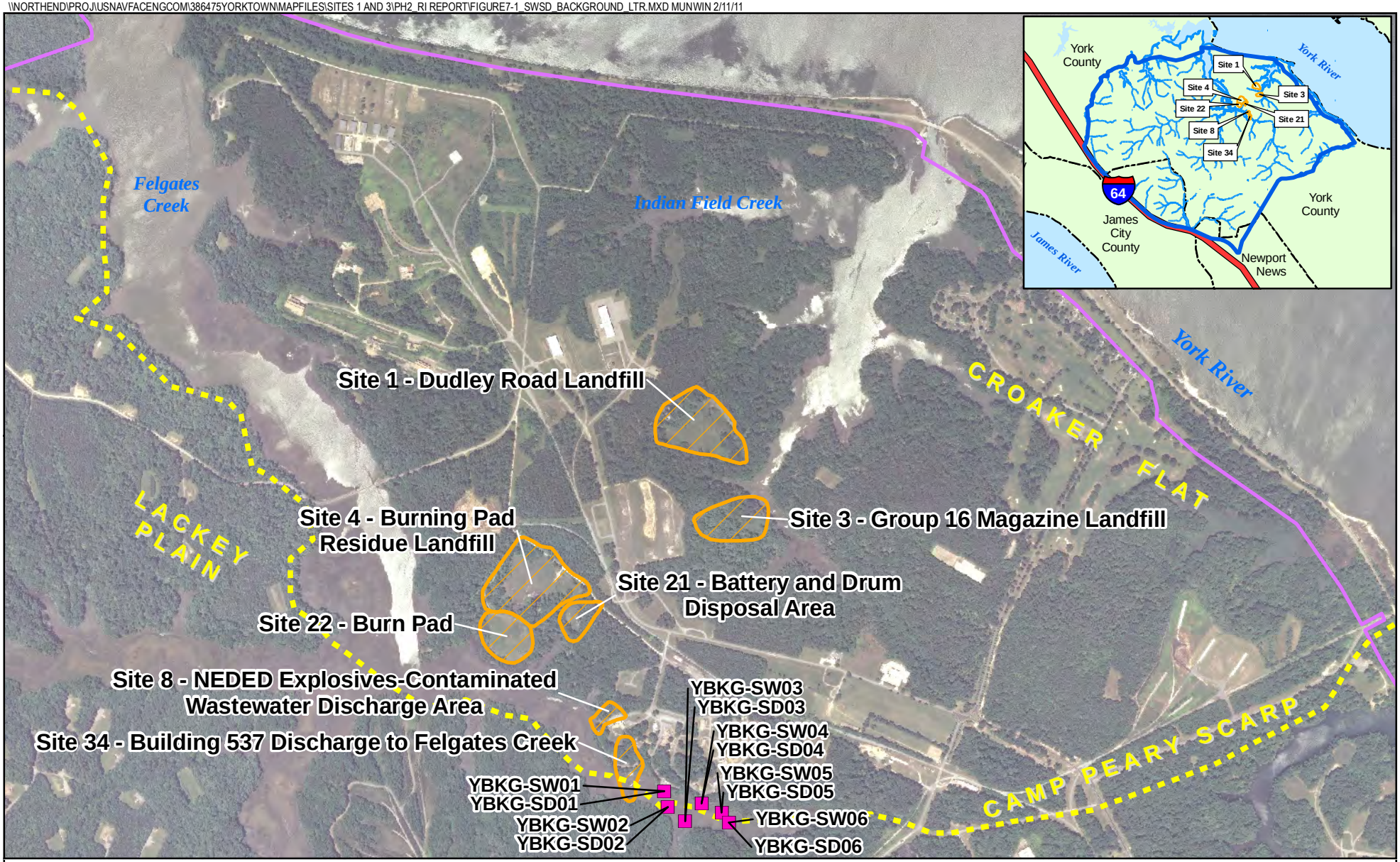
Chemical	Site Samples			Background Samples			Ratio of Maximums	Ratio of Means
	Frequency of Detection	Maximum	Arithmetic Mean	Frequency of Detection	Maximum	Arithmetic Mean		
Metals (MG/KG)								
Aluminum	14 / 14	27,800	15,597	6 / 6	20,900	17,833	1.33	0.87
Arsenic	12 / 14	11.6	6.42	6 / 6	14.8	12.9	0.78	0.50
Beryllium	7 / 14	1.50	0.83	6 / 6	1.10	0.89	1.36	0.93
Volatile Organic Compounds (UG/KG)								
Carbon disulfide	14 / 14	38.0	11.7	1 / 6	13.0	13.3	2.92	0.88

TABLE 7-21
Reporting Limit to Screening Value Comparison
Remedial Investigation - Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

Chemical	Units	Frequency of Detection	Minimum Reporting Limit	Maximum Reporting Limit	Mean Concentration	Screening Value	Minimum Ratio	Maximum Ratio	Mean Ratio
Sediment									
Selenium	MG/KG	0 / 12	0.50	3.60	1.16	1.00	0.50	3.60	1.16
Surface Water									
Nickel	UG/L	0 / 13	40.0	40.0	20.0	8.28	4.83	4.83	2.42
Nickel (dissolved)	UG/L	0 / 13	40.0	40.0	20.0	8.20	4.88	4.88	2.44
Silver	UG/L	0 / 13	5.00	5.00	2.50	0.23	21.7	21.7	10.9
Silver (dissolved)	UG/L	0 / 13	5.00	5.00	2.50	0.23	21.7	21.7	10.9

Shaded cells indicate ratio > 1

\\NORTHEND\PROJ\USNAVFACENGCOM\386475YORKTOWN\MAPFILES\SITES 1 AND 3\PH2_RI REPORT\FIGURE7-1_SWSD_BACKGROUND_LTR.MXD MUNWIN 2/11/11



Legend

- WPNSTA Boundary
- Camp Peary Scarp
- Site Boundaries
- Collocated surface water and sediment sample locations for background reference

N
W E
S

0 700 1,400 Feet

Figure 7-1
Surface Water and Sediment Background Sample Locations
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

CH2MHILL

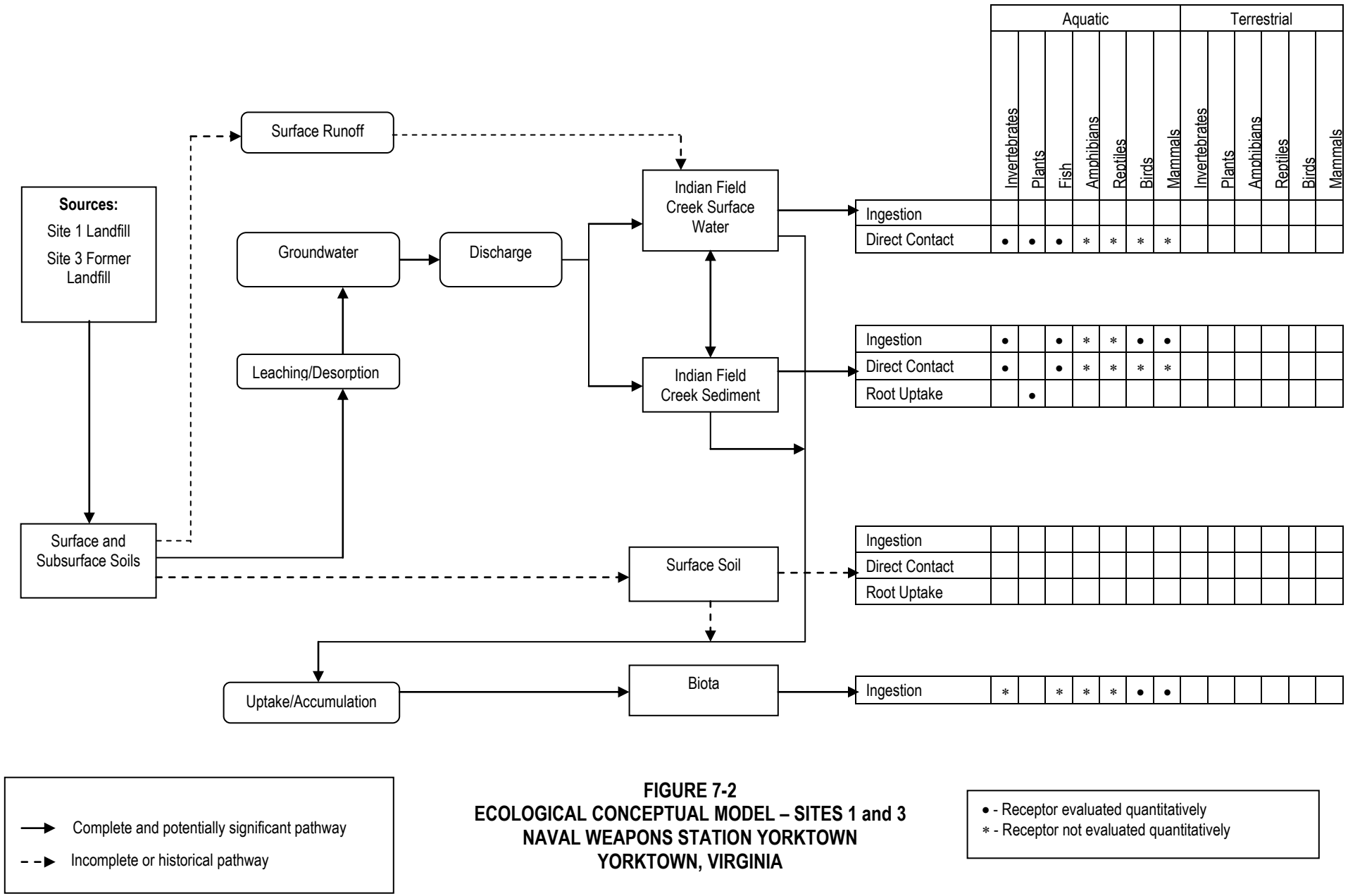


FIGURE 7-2
ECOLOGICAL CONCEPTUAL MODEL – SITES 1 and 3
NAVAL WEAPONS STATION YORKTOWN
YORKTOWN, VIRGINIA

SECTION 8

Chemical Fate and Transport and Conceptual Site Model

This section discusses the fate and transport of chemicals identified as COCs based on the HHRA and ERA for Sites 1 and 3. This section also includes the CSM of the various media at Sites 1 and 3 (**Figure 8-1**). The CSM qualitatively combines and interprets the information presented in this section and earlier sections of the report, including the hydrogeologic conceptual model, contaminant sources, potential migration of the contaminants, and the potential exposure and receptor pathways. The CSM is used to support potential risk management decisions and aids in defining the effectiveness of remedial alternatives, if necessary.

Chemical groups detected in environmental media at Sites 1 and 3 include VOCs and inorganics, as discussed in Section 5. These chemicals are also discussed as part of this section.

COCs for Site 1 comprise chlorinated VOCs (PCE, TCE, cis-1,2-DCE, vinyl chloride, and 1,1,2-trichloroethane) and metals (arsenic, chromium, cobalt, iron and manganese) as shown in **Table 8-1**. These chemicals were identified as COCs for Columbia and Yorktown Eastover aquifer groundwater, but not for surface water or sediment. COCs for Site 3 comprise chlorinated VOCs (TCE, cis-1,2-DCE and vinyl chloride) and metals (arsenic, chromium and manganese) as shown in **Table 8-2**. These chemicals were identified as COCs for Yorktown Eastover aquifer groundwater only. Fate and transport characteristics for each of these groups of chemicals are described below.

8.1 Chlorinated VOCs

Fate and transport of chlorinated VOCs is influenced by the solubility of these chemicals in water, the presence or absence of DNAPL, potential for sorption onto soil particles, potential for volatilization, degradation rates and groundwater and surface water flow characteristics. Other fate and transport mechanisms, such as bioaccumulation, are not discussed in this section because they are not significant for these sites (there are no risks to ecological receptors from any chemicals at Sites 1 and 3).

8.1.1 Solubility and Potential for DNAPL

The chlorinated VOCs identified as COCs have relatively high water solubilities for organic compounds (greater than 1,000 mg/L), except for PCE (Site 1 only) with a water solubility of 150 mg/L (**Tables 8-3 and 8-4**) indicating that they are more likely to leach from soil into groundwater than chemicals with lower solubilities.

As described in Section 5, dissolved concentrations of chlorinated VOCs in groundwater at approximately 1 to 10 percent of a compound's solubility would suggest the presence of DNAPL in the subsurface (Bedient, Rifai, and Newell, 1994). Due to the complex nature of DNAPLs, their fate and transport is difficult to understand. DNAPLs are separate-phase hydrocarbon liquids that are denser than water, and exist in the soil and aquifer matrix as free-phase DNAPL or residual DNAPL. Limited degradation of some DNAPLs in the subsurface allows them to persist for long periods of time. Dissolution causes soluble organic constituents in the DNAPL to slowly release into the groundwater, which causes DNAPLs to be a continuous source of groundwater contamination (Bedient, Rifai, and Newell, 1994).

At Site 1, one DPT groundwater sample (DW01/MIP-16th) within the Columbia aquifer and one monitoring well (1GW22) within the Yorktown-Eastover aquifer, contained TCE at a concentration above 11,000 µg/L (greater than 1 percent of the aqueous solubility in water). However, free-phase DNAPL or residual DNAPL was not identified during the installation of the monitoring wells. The presence of DNAPL is still possible, even in the absence of visual observation, but the location of the potential DNAPL was likely not identified by this investigation. There were no concentrations of VOCs at Site 3 that were indicative of possible DNAPL.

8.1.2 Density

The density of a substance relative to water determines the likelihood of that substance to accumulate at the top or bottom of an aquifer. All of the VOCs identified as COCs at Sites 1 and 3 have densities greater than water with

the exception of vinyl chloride, which has a density similar to water (**Tables 8-3 and 8-4**). Consequently, it is expected that most COCs will have a tendency to sink until a fine-grained unit is encountered that inhibits downward migration. This is evidenced by MIP data (**Appendix A**), which show high ECD responses just above and within areas of high conductivity (confining layers) and trend graphs for well set 1GW12, 1GW12A, and 1GW12B (**Figures 8-2** through **8-4**) which indicates a downward migration of TCE from the shallower Columbia aquifer (1GW12) to the deeper Yorktown-Eastover aquifer (1GW12B). Significant migration to the deepest monitored portion of the Yorktown-Eastover aquifer (1GW12A) has not yet occurred.

8.1.3 Sorption

Sorption occurs when a constituent adheres to and becomes associated with solid particles in the formation. The subsurface materials to which chemicals are likely to sorb are clays and organic matter.

The conventional measure of sorption is the distribution coefficient (K_d). The K_d for organic chemicals is the product of the soil organic carbon partition coefficient (K_{oc}) of the chemical and the fraction of organic carbon (f_{oc}) in the soil. The f_{oc} content of soil at Sites 1 and 3 soil is assumed to be 0.0025. In general, chemicals with a K_{oc} greater than 10,000 milliliters per gram (mL/g) have high degrees of adsorption and consequentially low mobility, whereas chemicals with a K_{oc} lower than 1,000 ml/g have lower degrees of adsorption and consequentially higher mobility. All VOCs of interest at Sites 1and 3 have moderate to low K_{oc} values (log K_{oc} values ranging from 0.26 to 2.51). MIP data (**Appendix A**) indicate VOCs are likely sorbing to fine grained units at both sites. MIP 16 (Site 1) shows the highest ECD responses at the depth intervals consistent with the finest soils (based on conductivity). Additionally, MIP data for Site 3 indicate contaminants are sorbed into the shallow soils at the site because they appear to be more fine-grained (based on conductivity). This appears to have resulted in limited downward migration of contaminants at the site (see MIP logs 4 and 10).

8.1.4 Volatilization

Volatilization occurs when a compound transfers from the aqueous phase to the gas phase. Measures of a chemical's tendency to volatilize from water and soil include its vapor pressure and Henry's Law Constant (K_h). Compounds with K_h values higher than 10^{-3} atmosphere-cubic meters per mole (atm-m^3/M) are expected to volatilize readily from water to air, whereas those with K_h values lower than 10^{-5} atm-m^3/M are relatively non-volatile. Compounds with K_h values in between these values are expected to be moderately volatile. At a given temperature, the higher the vapor pressure of a compound, the higher the volatility of that compound.

Volatilization tends to occur more readily from surface water, sediment, or shallow soil than from deeper soil or groundwater. In groundwater, volatilization can occur only at the air/water interface between the saturated and unsaturated zones, and movement of aqueous-phase contaminants from bulk groundwater to the interface is largely diffusion-limited. In unsaturated shallow soil, the soil gas pressure generally approximates the ambient air pressure. With depth, the soil gas pressure tends to increase and it becomes more difficult for the gas to escape and equalize with the ambient air pressure.

Values of vapor pressure and K_h for the site COCs are provided in **Tables 8-3** and **8-4**. The K_h values indicate that the VOCs of interest have properties indicative of moderate to high volatility. While the volatilization pathway is not significant in groundwater at this site and there is no potential for vapors from groundwater to enter buildings because the sites have no buildings, this pathway is believed to be significant for surface water at both sites because it may allow the chlorinated VOCs to discharge to the adjacent surface water bodies at the sites, but not persist in the water bodies at levels of concern.

8.1.5 Biodegradation

Chlorinated VOCs can undergo biodegradation through use as an electron acceptor (reductive dechlorination), use as an electron donor (oxidation), or co-metabolism. PCE and TCE typically can be biodegraded via reductive dechlorination. Reductive dechlorination occurs in a series of reactions in which the parent compound is reduced to daughter compounds; each reaction forms a daughter compound with sequentially fewer chlorine atoms. The dominant reductive degradation pathway for PCE and TCE is as follows:

$$\text{PCE} \rightarrow \text{TCE} \rightarrow \text{cis-1,2-DCE} \rightarrow \text{VC} \rightarrow \text{ethene}$$

This reaction is often limited by the amount of an available carbon source (electron donor) in the groundwater system. Additionally, the rate of reductive dechlorination appears to decrease as the degree of chlorination decreases. The reduced daughter products of TCE (especially VC) can also be biodegraded via aerobic degradation pathways. The potential for biodegradation at Sites 1 and 3 is discussed in more detail in Section 8.3.

8.1.6 Groundwater Flow

Based on available data, groundwater at Sites 1 and 3 flows to Indian Field Creek and its unnamed tributary. VOCs likely discharge to both of these water bodies based on the contaminant distribution discussed in Section 5. Additional monitoring and investigation is recommended to eliminate some of the uncertainties with groundwater flow in the vicinity of the unnamed tributary and Indian Fields Creek. These uncertainties are based on the initial low detections of VOCs in the March 2009 sample from 3GW29, the lack of detections of VOCs (excluding one common laboratory contaminant) in the July 2009 sample from 3GW29, and the lack of vertical well pairs to definitively demonstrate an upward vertical gradient.

8.2 Metals

Fate and transport of metals is influenced by the solubility, sorption potential, transformation potential and groundwater and surface water flow. Other fate and transport mechanisms, such as bioaccumulation, are not discussed in this section because they are not significant for these sites (there are no risks to ecological receptors from any chemicals at Sites 1 and 3).

8.2.1 Solubility and Sorption

The solubilities of inorganics are dependent on several factors and are therefore, not included in **Tables 8-3** and **8-4**. In general, solubility is highly dependent on the oxidation state of the inorganic constituent, which is dependent on subsurface conditions. The solubility of cations decreases as pH increases. Some cations may complex with oxygen and hydroxide, forming insoluble oxyhydroxides, or phosphate, sulfate, and carbonate, forming insoluble mineral precipitates. Metal sulfide complexes, which form in reducing environments, are extremely insoluble and tend to reduce the total metals concentrations (USEPA, 1979).

The potential for sorption (K_d) for inorganic chemicals is also a complex function of pH, organic content, oxide coatings, and other factors; therefore, K_d is not easily estimated by methods other than site-specific testing. Due to the number of factors which impact the K_d values for inorganics, these values range from 0.063 ml/g to 100,000 ml/g (**Table 8-3** and **8-4**). Generally, metal adsorption increases with pH. Inorganics most often sorb to clay minerals, organic matter, and iron and manganese oxyhydroxides. Metals may be sorbed on the surface of the soil or fixed to the interior of the soil, where they are unavailable for release to water. After available sorption sites are filled, most metals are incorporated into the structures of major mineral precipitates, as coprecipitates.

8.2.2 Transformation

Transformation occurs when the valence state of inorganics is increased (oxidation) or decreased (reduction). It can be caused by changes in E_h (oxidation potential) and/or pH and by microbial or nonmicrobial (abiotic) processes. Transformation may have a significant effect on the mobility of a metal, either increasing or decreasing it.

Iron, Manganese and Arsenic

The solid forms of iron (iron hydroxides) and manganese (manganese oxides) are usually present in the natural soil matrix. If sufficient amounts of oxygen and nitrate are not present in the subsurface, iron hydroxides and manganese oxides will be used as electron acceptors by metabolic activity and reductively dissolved into soluble forms. Sulfides present in groundwater can also reductively dissolve iron hydroxides.

Several inorganics (such as arsenic) have a tendency to sorb to these iron hydroxides and manganese oxides. If these compounds are reductively dissolved, then the inorganics which are bound to these hydroxides and oxides will also be released.

Geochemical indicators for Sites 1 and 3 are generally indicative of slightly reducing, groundwater conditions, which may result in mobility of iron, manganese and arsenic. This is of particular importance at Site 3, where TPH was identified in soil and may continue to act as an electron donor source, generating continuing reducing conditions at the site.

Chromium

In oxidizing environments, chromium exists as an oxyanion (hard anion that contain oxygen) and is relatively mobile. However, it can be absorbed by clays, iron hydroxides, aluminum hydroxides, manganese compounds, and organic material at acidic and neutral pHs.

Geochemical indicators for Site 1 and 3 are generally indicative of slightly reducing conditions, which are less likely to result in dissolved chromium in groundwater. This is consistent with the data, which indicate only one well in which chromium exceeded the RSL in a dissolved metals sample.

Cobalt

Cobalt forms insoluble metal sulfides in anaerobic environments and tends to sorb and be transported in water primarily with suspended colloidal particles (ERG, 2003). However, at Site 1, cobalt is present in both the total and dissolved metals samples, and is thus present in solution in some areas.

8.2.3 Groundwater Flow

Columbia aquifer groundwater flows to Indian Field Creek and its unnamed tributary; existing data indicate that Yorktown-Eastover groundwater discharges to Indian Field Creek. Metals would discharge to both of these water bodies based on the contaminant distribution discussed in Section 5. However, based on contaminant concentrations in these water bodies, metals are not present at concentrations posing potential risk to ecological or human receptors.

8.3 Natural Attenuation Evaluation

As discussed in Section 6.1.5, biodegradation of chlorinated solvents occurs when naturally occurring microorganisms break down the chlorinated solvents into less toxic or non-toxic substances through an electron transfer process. Under anaerobic conditions, anaerobic bacteria use additional electron acceptors in the following order of preference: nitrate (“nitrate reduction”), manganese (“manganese reduction”), ferric iron (“iron reduction”), sulfate (“sulfate reduction”), and carbon dioxide (“methanogenesis”). This order of preference for various electron acceptors is commonly referred to as the ecological reduction sequence. Reductive dechlorination is most efficient under sulfate-reducing and methanogenic conditions. Because the degree of reductive dechlorination is dependent on the place at which site conditions fall within the ecological reduction sequence, the concentrations of constituents within the ecological reduction sequence (nitrate, iron, etc.) can provide an indication of the potential for reductive dechlorination.

Field measurements collected from all monitoring wells are summarized in **Tables 5-2** and **5-6**. Natural attenuation indicator parameters and the microbe parameter *Dehalococcoides species* were analyzed from groundwater samples collected from four monitoring wells at Sites 1 and 3 and are summarized in **Tables 5-2** and **5-7**, respectively.

Specific groundwater geochemical parameters are discussed in detail below.

8.3.1 Dissolved Oxygen

DO is the most thermodynamically favored electron acceptor used by microbes for the biodegradation of organic carbon. Generally, reductive dechlorination can occur with DO concentrations less than 5 mg/L. However, concentrations below 1 mg/L are considered to be indicative of anaerobic conditions, which is favorable for reductive dechlorination. DO concentrations less than 0.5 mg/L are considered ideal for reductive dechlorination.

At Site 1, DO concentrations ranged from 0.97 to 7.84 mg/L in the Columbia aquifer, and ranged from 0 to 0.99 mg/L in the Yorktown-Eastover aquifer. The low DO concentrations observed in the Yorktown-Eastover aquifer are indicative of favorable to ideal conditions for reductive dechlorination.

At Site 3, DO concentrations ranged from 0 to 6.06 mg/L, with 10 of the 19 monitoring wells showing DO concentrations below 1 mg/L in the Yorktown-Eastover aquifer. In general, the low DO concentrations observed are indicative of favorable to ideal conditions for reductive dechlorination at Site 3.

8.3.2 Oxidation-Reduction Potential

The ORP of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solution to accept or transfer electrons. Reductive dechlorination is most efficient in the ORP range corresponding to sulfate reduction and methanogenesis (<-100 millivolts [mV]).

At Site 1, the ORP values ranged from -30 to 357 mV in the Columbia aquifer monitoring wells; the ORP values ranged from -170 to 121 mV in the Yorktown-Eastover aquifer monitoring wells, with eight of the ten monitoring wells showing negative ORP values. The ORP values ranged from -286 to 73 mV, with 14 of the 18 monitoring wells showing negative ORP values within the Yorktown-Eastover aquifer at Site 3.

ORP values are generally indicative of conditions favorable for reductive dechlorination in the Yorktown-Eastover aquifer at both Sites 1 and 3.

8.3.3 Nitrate/Nitrite

After DO has been depleted, nitrate may be used as an electron acceptor during anaerobic biodegradation of organic carbon via denitrification. In this process, nitrate is reduced and nitrite is produced.

At Site 1, nitrite and nitrate results ranged from 0.004 to 0.046 mg/L and 1 to 4 mg/L, respectively, in the Columbia aquifer; nitrite results ranged from 0.006 mg/L to 0.041 mg/L, and nitrate was detected in only 1 sample at a concentration of 1 mg/L. The results indicate that nitrate reduction does not appear to be a significant electron acceptor process at Site 1.

At Site 3, nitrite results ranged from 0.004 to 0.063 mg/L and nitrate was not detected in groundwater of the Yorktown-Eastover aquifer. Nitrate reduction does not appear to be a significant electron acceptor process at Site 3.

8.3.4 Ferric Iron/Ferrous Iron

In some cases, ferric iron (iron III) is used as an electron acceptor during anaerobic degradation. During this process (“iron reduction”), ferric iron is reduced to iron (II) or ferrous iron. As a result, measurable concentrations of ferrous iron are an indicator of iron reduction. In general, ferrous iron concentrations greater than 1 mg/L are considered to be an indicator of iron reduction.

Dissolved iron concentrations greater than 1 mg/L were detected in two Columbia aquifer monitoring wells with a maximum concentration of 8 mg/L, and one Yorktown-Eastover aquifer monitoring well at a concentration of 1.5 mg/L at Site 1. Dissolved iron concentrations greater than 1 mg/L were detected in four Yorktown-Eastover aquifer monitoring wells at Site 3, with a maximum concentration of 2.01 mg/L.

The presence of iron above 1 mg/L at both sites may suggest that iron reduction is a significant electron acceptor process.

8.3.5 Sulfate/Sulfide

After DO and nitrate have been depleted, sulfate may be used as the electron acceptor in anaerobic degradation. This process is termed “sulfate reduction” and results in the production of sulfide. Sulfide concentrations generally increase within the aquifer when sulfate reduction is occurring. However, in some instances, particularly in areas of high iron concentrations, sulfide minerals, when generated, react with iron to form iron sulfide minerals and precipitate out and are therefore, not detected in groundwater.

Sulfide was not observed and sulfate ranged from 13JD to 190 D mg/L in the Columbia aquifer at Site 1. Sulfide was observed in one groundwater sample at a concentration of 0.008 mg/L and sulfate ranged from 8.1JD to 40 D mg/L in the Yorktown-Eastover aquifer. At Site 3, sulfide was not observed and sulfate ranged from 11.0 to 95.0 mg/L in the Yorktown-Eastover aquifer.

The results indicate that sulfate reduction does not appear to be a significant electron acceptor process at both Sites 1 and 3.

8.3.6 Methane

Methane was not detected in groundwater at Site 1 or Site 3. This indicates that methanogenic conditions are not currently present at these sites. While methanogenesis is generally an indicator that reducing conditions conducive to degradation of VOCs are present, reductive dechlorination can occur under conditions that are not yet methanogenic.

8.3.7 Total Organic Carbon

Organic carbon is used as an electron donor (or may produce hydrogen, which can serve as the electron donor) in the reductive dechlorination process. The presence of TOC at concentrations greater than 20 mg/L indicates ideal conditions for reductive dechlorination.

At Site 1, the maximum TOC concentrations observed were 11 and 8 mg/L in the Columbia and Yorktown-Eastover aquifers, respectively. At Site 3, the maximum TOC concentration observed was 17 mg/L. These results do not indicate ideal conditions for reductive dechlorination at Site 1 or 3.

8.3.8 Temperature

Groundwater temperature directly affects the solubility of oxygen and other geochemical species. Reductive dechlorination can occur at groundwater temperatures between 5 °C and 20 °C, while temperatures greater than 20 °C are considered ideal for reductive dechlorination. At Site 1, groundwater temperatures generally ranged from 10 to 16 °C in both the Columbia and Yorktown-Eastover aquifers. At Site 3, groundwater temperatures ranged from 14 to 17 °C in the Yorktown-Eastover.

8.3.9 Reductive Dechlorination Daughter Products

Reductive dechlorination daughter products of TCE include cis-1,2-DCE, vinyl chloride, ethane, and ethene. The presence of these compounds indicates biodegradation is occurring. During biodegradation of chlorinated hydrocarbons, chloride is released into the groundwater.

Reductive dechlorination daughter products cis-1,2-DCE and vinyl chloride were present in the Columbia and Yorktown-Eastover aquifers at Site 1 and the Yorktown-Eastover aquifer at Site 3, as discussed in Section 5. The presence of reductive dechlorination daughter products at both sites indicates reductive dechlorination is occurring. However, it should be noted that while vinyl chloride concentrations were higher than parent compound concentrations at Site 3, very little vinyl chloride was observed at Site 1. The presence of vinyl chloride is significant because vinyl chloride is near the end of the reductive dechlorination process.

8.3.10 Microbial Results

Dehalorespiring organisms such as *Dehalococcoides* (DHC) can facilitate dechlorination of chlorinated solvents to ethene/ethane. In general, a density of less than 1 cell per milliliter is suboptimal to sustain dechlorination rates.

Concentrations of DHC observed were 8.5 and 5.3J cells/mL in the Columbia and Yorktown-Eastover aquifers at Site 1, respectively. At Site 3, concentrations of DHC ranged from 6.1 to 26.2 cells/mL in the Yorktown-Eastover aquifer.

These results are indicative of a culture that may sustain appreciable dechlorination rates at both Sites 1 and 3.

8.3.11 Summary

The groundwater geochemical data collected from the Columbia and Yorktown-Eastover aquifer generally indicate favorable conditions for reductive dechlorination at Sites 1 and 3. These conditions include low DO and ORP, the presence of ferrous iron and favorable groundwater temperatures. In addition, the presence of TCE daughter product vinyl chloride indicates advanced reductive dechlorination is occurring. The concentration of dehalorespiring organisms may also sustain appreciable dechlorination rates at the site. However, the lack of

detection of methane indicates that methanogenic conditions consistent with optimal reductive dechlorination have not been reached at either site.

8.4 Conceptual Site Model

This section describes the conceptual site models for Sites 1 and 3 in consideration of the information provided in the previous sections of this report.

8.4.1 Site 1

The primary contaminants at Site 1 are chlorinated VOCs and metals. Continuing sources of contamination in groundwater at Site 1 include the landfill waste which remains in place at the site, possible DNAPL remaining at the site, and sorbed mass present in fine-grained soils of the Yorktown confining unit. The surficial hydrogeologic units at the site consist of the Columbia aquifer, Yorktown confining unit and Yorktown Eastover aquifer. Within the waste area at the site, VOCs are migrating downward from the Columbia aquifer into and through the Yorktown confining unit, into the Yorktown-Eastover aquifer. The Yorktown confining unit is truncated in areas at the site, particularly in the vicinity of Indian Field Creek and its unnamed tributary, and in these areas, the Columbia aquifer and Yorktown-Eastover aquifer are hydraulically connected. Based on the conductivity response on the MIP, the confining unit is present at MIP point 18 and is estimated to be truncated between MIP 18 and the 1GW04 well cluster. Groundwater contaminants are transported via advection through the Columbia and Yorktown-Eastover aquifers to the surface water bodies. Chlorinated VOCs likely volatilize once discharged to the creek and are not present at detectable levels. Metals may be discharging to the site, but are not currently present in surface water or sediment at levels posing potential unacceptable risk.

Chlorinated VOCs in groundwater at Site 1 are degrading via reductive dechlorination as evidenced by TCE daughter products (cis-1,2-DCE and vinyl chloride), a microbial population capable of reductive dechlorination, and geochemical conditions generally favorable for reductive dechlorination. Metals leaching and mobility at the site is variable as a result of different geochemical conditions in different areas of the site.

The only current receptors at the site are ecological receptors and trespassers. There are no unacceptable risks associated with these receptors. Unacceptable risks to future human receptors are present due to potential exposure to contaminants in groundwater.

8.4.2 Site 3

The primary contaminants at Site 3 are chlorinated VOCs and metals. Landfill materials at Site 3 have been removed. TPH-contaminated soil remains in place at the site at levels lower than risk-based screening levels. The surficial hydrogeologic units at the site consist of an unsaturated unit lithologically consistent with the Yorktown confining unit which lies above the Yorktown-Eastover aquifer. Based on the MIP data, VOCs appear to be present in Yorktown Eastover aquifer groundwater and are also sorbed to the fine-grained material above the aquifer. VOCs are migrating to the north and east toward Indian Field Creek and its unnamed tributary via advection. Chlorinated VOCs likely volatilize once discharged to the creek and are not present at detectable levels in surface water or sediment. Metals may be discharging to the site, but are not currently present in surface water or sediment at levels posing potential unacceptable risk.

Chlorinated VOCs in groundwater at Site 1 are degrading via reductive dechlorination as evidenced by TCE daughter products (cis-1,2-DCE and vinyl chloride), a microbial population capable of reductive dechlorination, and geochemical conditions generally favorable for reductive dechlorination. Metals leaching and mobility at the site is variable as a result of different geochemical conditions in different areas of the site. TPH in soils at the site may be acting as an electron donor source and resulting in the mobilization of manganese and arsenic in soils (which occurs readily under reducing conditions) and allowing for reductive dechlorination of VOCs.

The only current receptors at the site are ecological receptors and trespassers. There are no unacceptable risks associated with these receptors. Unacceptable risks to future human receptors are present due to potential exposure to contaminants in groundwater.

TABLE 8-1
Constituents of Concern (COCs) by Media - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Constituents of Concern (COCs)	Groundwater - Combined Columbia and Yorktown-Eastover Aquifer
Volatile Organic Compounds	
1,1,2-Trichloroethane	X
cis-1,2-Dichloroethene	X
Tetrachloroethene	X
Trichloroethene	X
Vinyl Chloride	X
Inorganics	
Arsenic	X
Cobalt	X
Chromium	X
Iron	X
Manganese	X

TABLE 8-2
Constituents of Concern (COCs) by Media - Site 3
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Constituents of Concern (COCs)	Groundwater Yorktown-Eastover Aquifer
Volatile Organic Compounds	
cis-1,2-Dichloroethene	X
Trichloroethene	X
Vinyl Chloride	X
Inorganics	
Arsenic	X
Chromium	X
Manganese	X

TABLE 8-3
Physical and Chemical Data of Constituents of Concern - Site 1
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Constituents of Concern (COCs)	**CAS #**	**Molecular Weight (g/mole)**	**Density (g/cm^3)**	**Water Solubility (mg/L)**	**Vapor Pressure (mm Hg)**	**K_h (atm-m3/mole)**	**Log K_{oc} (---)**	**K_d (mL/g)**	**R (---)**	**V_c (ft/year)**	**Log K_{ow} (---)**
Volatile Organic Compounds											
1,1,2-Trichloroethane	79-00-5	133.41	1.44	4590	23	8.24E-04	2.49	0.77	4.35	1.150	1.89
Chloroform	67-66-3	119.38	1.48	7,950	198	3.39E-04	1.8	0.16	1.7	2.970	1.97
cis-1,2-Dichloroethene	156-59-2	96.94	1.28	6,410	200	4.08E-03	1.69	0.12	1.5	3.267	1.86
Tetrachloroethene	127-18-4	165.8	1.62	150	20	1.53E-02	2.43	0.67	3.9	1.277	2.53
Trichloroethene	79-01-6	131.4	1.46	1,100	74	9.10E-03	1.92	0.21	1.9	2.630	2.53
Vinyl Chloride	75-01-4	62.50	0.91	1,100	2,531	2.78E-02	0.39	0.01	1.0	4.870	0.60
Metals											
Arsenic	7440-38-2	74.92	5.78	U	U	U	NA	2.0 - 20,000	6.8 - 57,800	0.004 - 30	U
Chromium	16065-83-1 & 18540-29-9	52.00	7.14	U	U	U	NA	0.20 - 63,000	1.6 - 182,000	0.001 - 129	U
Cobalt	7440-48-4	59.00	8.90	U	U	U	NA	0.063 - 12,600	1.2 - 36,400	0.006 - 172	U

BCF = Bioconcentration Factor

foc = fraction organic carbon = 0.0025 (assumed)

K_d = Soil-Water partition coefficient = K_{oc} x foc for organics

K_h= Henry's Law Constant

K_{oc} = Organic carbon partition coefficient

K_{ow} = Octanol-water partition coefficient

NA = no information available

n_e = Effective porosity = 0.3

R = Retardation coefficient = $1 + K_d \times p_b / n_e$

p_b = Soil bulk density = 1.3 grams per cubic centimeter (sandy clay)

U = No value is provided because of the uncertainty in the form of these chemicals in the environment.

Vc = Contaminant velocity = seepage velocity (estimated at 5 ft/year) / R (A higher groundwater velocity between the Columbia and Yorktown-Eastover aquifers was used to be conservative)

* Does not tend to adsorb to soil.

Data sources (Sources 3 and 6 are primary references):

(1) Agency of Toxic Substances and Disease Registry. 2009. Toxicological Profiles.*http://www.atsdr.cdc.gov/toxpro2.html*

(2) Dragun, James. 1998. *The Soil Chemistry of Hazardous Materials 2nd Edition*.

(3) Interstate Technology and Regulatory Council. 2002.*A Systematic Approach to In Situ Bioremediation in Groundwater Including Decision Trees on In Situ Bioremediation for Nitrates, Carbon Tetrachloride, and Perchlorate.*In Situ Bioremedi Team.

(4) Montgomery. 2000. *Groundwater Chemicals Desk Reference. Third Edition.*

(5) SRC. 2009. Interactive PhysProp Database Demo. *http://www.srcinc.com/what-we-do/databaseforms.aspx?id=386*

(6) United States Environmental Protection Agency. 1999.*Partition Coefficients for Metals in Surface Water, Soil, and Waste.*

(7) United States National Library of Medicine. 2009. Hazardous Substances Data Bank (HSDB)*http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB*

(8) IPCS. 2010. *http://www.inchem.org/*

TABLE 8-4
Physical and Chemical Data of Constituents of Concern
Phase II Remedial Investigation Report, Sites 1 and 3
WPNSTA Yorktown, Yorktown, Virginia

Constituents of Concern (COCs)	**CAS #**	**Molecular Weight (g/mole)**	**Density (g/cm^3)**	**Water Solubility (mg/L)**	**Vapor Pressure (mm Hg)**	**K_h (atm-m3/mole)**	**Log K_{oc} (---)**	**K_d (mL/g)**	**R (---)**	**V_c (ft/year)**	**Log K_{ow} (---)**
Volatile Organic Compounds											
cis-1,2-Dichloroethene	156-59-2	96.94	1.28	6,410	200	4.08E-03	1.69	0.12	1.5	1.307	1.86
Trichloroethene	79-01-6	131.4	1.46	1,100	74	9.10E-03	1.92	0.21	1.9	1.052	2.53
Vinyl Chloride	75-01-4	62.50	0.91	1,100	2,531	2.78E-02	0.39	0.01	1.0	1.948	0.60
Metals											
Arsenic	7440-38-2	74.92	5.78	U	U	U	NA	2.0 - 20,000	6.8 - 57,800	0.004 - 30	U
Manganese	7439-96-5	54.94	7.26	U	U	U	NA	NA	NA	NA	U

BCF = Bioconcentration Factor

foc = fraction organic carbon = 0.0025 (assumed)

K_d = Soil-Water partition coefficient = K_{oc} x foc for organics

K_h= Henry's Law Constant

K_{oc} = Organic carbon partition coefficient

K_{ow} = Octanol-water partition coefficient

NA = no information available

n_e = Effective porosity = 0.3

R = Retardation coefficient = $1 + K_d \times p_b / n_e$

p_b = Soil bulk density = 1.3 grams per cubic centimeter (sandy clay)

U = No value is provided because of the uncertainty in the form of these chemicals in the environment.

Vc = Contaminant velocity = seepage velocity (estimated at 2 ft/year in Yorktown-Eastover aquifer) / R

* Does not tend to adsorb to soil.

Data sources (Sources 3 and 6 are primary references):

(1) Agency of Toxic Substances and Disease Registry. 2009. Toxicological Profiles.*http://www.atsdr.cdc.gov/toxpro2.html*

(2) Dragun, James. 1998. *The Soil Chemistry of Hazardous Materials 2nd Edition*.

(3) Interstate Technology and Regulatory Council. 2002.*A Systematic Approach to In Situ Bioremediation in Groundwater Including Decision Trees on In Situ Bioremediation for Nitrates, Carbon Tetrachloride, and Perchlorate.*In Situ Bioremedi
Team.

(4) Montgomery. 2000. *Groundwater Chemicals Desk Reference. Third Edition.*

(5) SRC. 2009. Interactive PhysProp Database Demo. *http://www.srcinc.com/what-we-do/databaseforms.aspx?id=386*

(6) United States Environmental Protection Agency. 1999.*Partition Coefficients for Metals in Surface Water, Soil, and Waste.*

(7) United States National Library of Medicine. 2009. Hazardous Substances Data Bank (HSDB).*http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB*

(8) IPCS. 2010. *http://www.inchem.org/*

Future Resident:
Ingestion of, dermal contact with, and inhalation of indoor air from groundwater vapors (Site 3 only, because waste remains in place at Site 1).

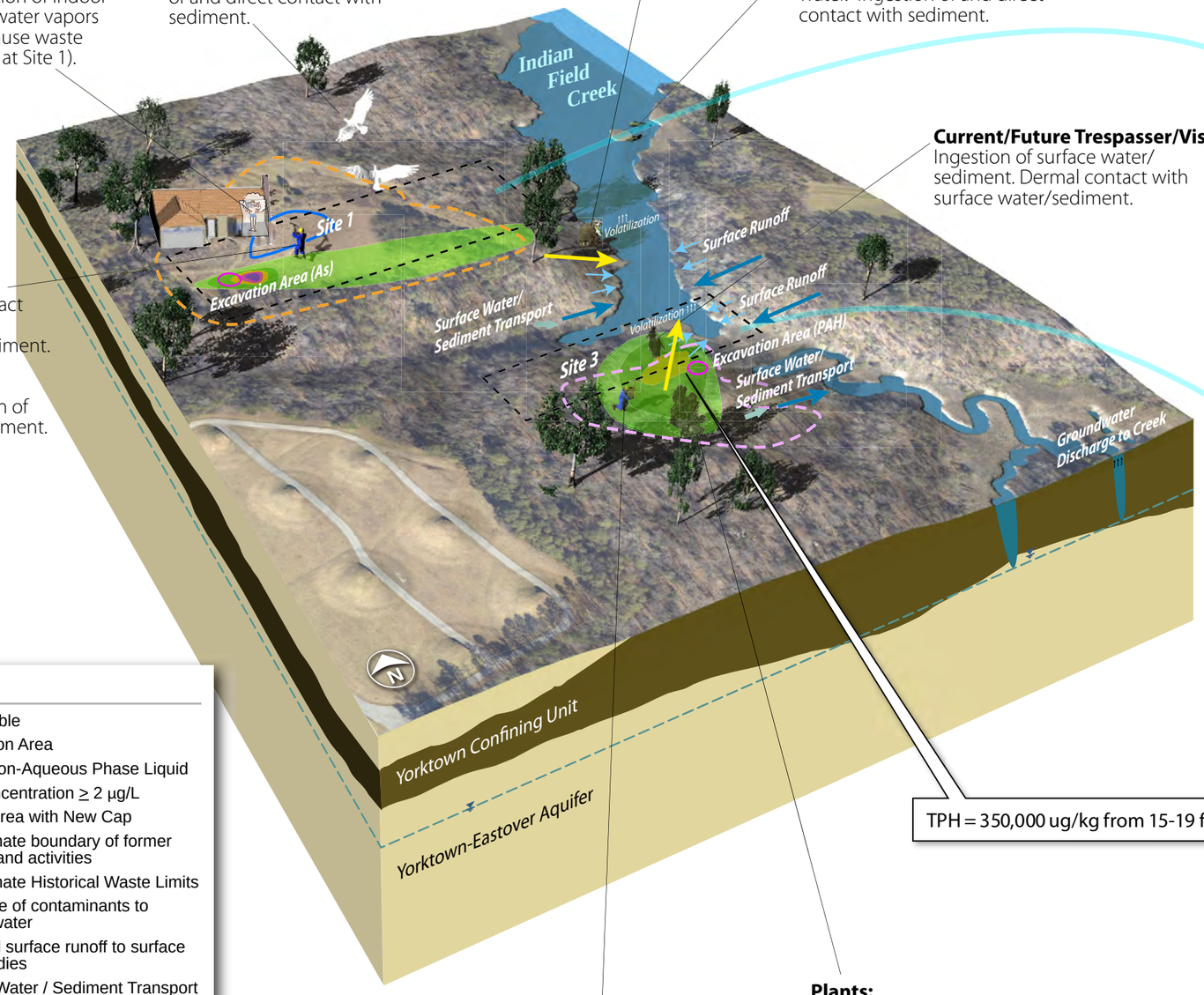
Bird:
Direct contact with surface water. Ingestion of and direct contact with sediment.

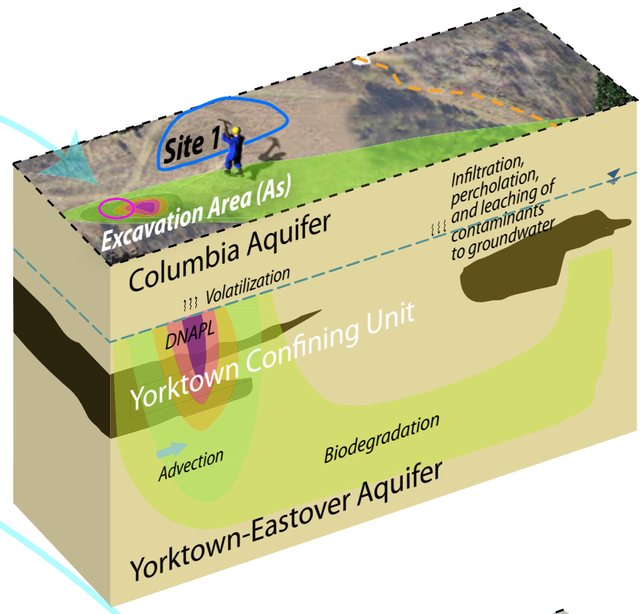
Mammal:
Direct contact with surface water and sediment and ingestion via food chain.

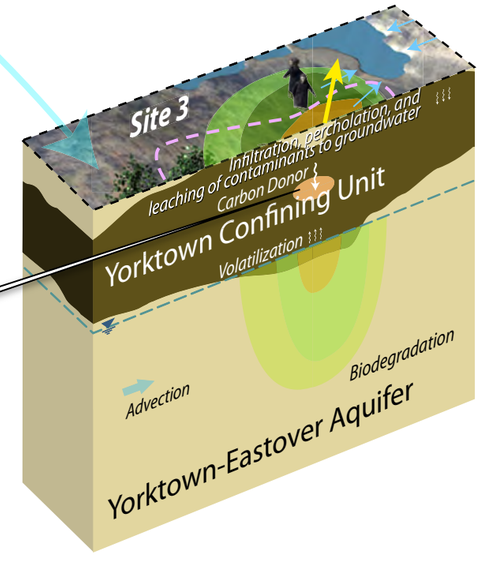
Fish:
Direct contact with surface water. Ingestion of and direct contact with sediment.

Current/Future Trespasser/Visitor:
Ingestion of surface water/ sediment. Dermal contact with surface water/sediment.

Future Construction Worker: Dermal contact with groundwater, surface water, and sediment. Inhalation of volatile emissions from groundwater. Ingestion of surface water and sediment.







TPH = 350,000 ug/kg from 15-19 ft bgs

Future Industrial Worker:
Ingestion and inhalation of groundwater.

Plants:
Direct contact with surface water. Root uptake of sediment.

LEGEND

- Water Table
- Excavation Area
- DNAPL — Dense Non-Aqueous Phase Liquid
- TCE Concentration ≥ 2 µg/L
- Landfill Area with New Cap
- Approximate boundary of former clearing and activities
- Approximate Historical Waste Limits
- Discharge of contaminants to surface water
- Historical surface runoff to surface water bodies
- Surface Water / Sediment Transport
- Surface Runoff
- As — Arsenic
- PAH — Polyaromatic Hydrocarbons

TCE Isoconcentration Contours

- >11,000 µg/L
- 2,000 µg/L - 11,000 µg/L
- 200 µg/L - 2,000 µg/L
- 20 µg/L - 200 µg/L
- 2 µg/L - 20 µg/L

FIGURE 8-1
Simplified Conceptual Site Model of Sites 1 and 3
Phase II Remediation Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown, Yorktown, Virginia

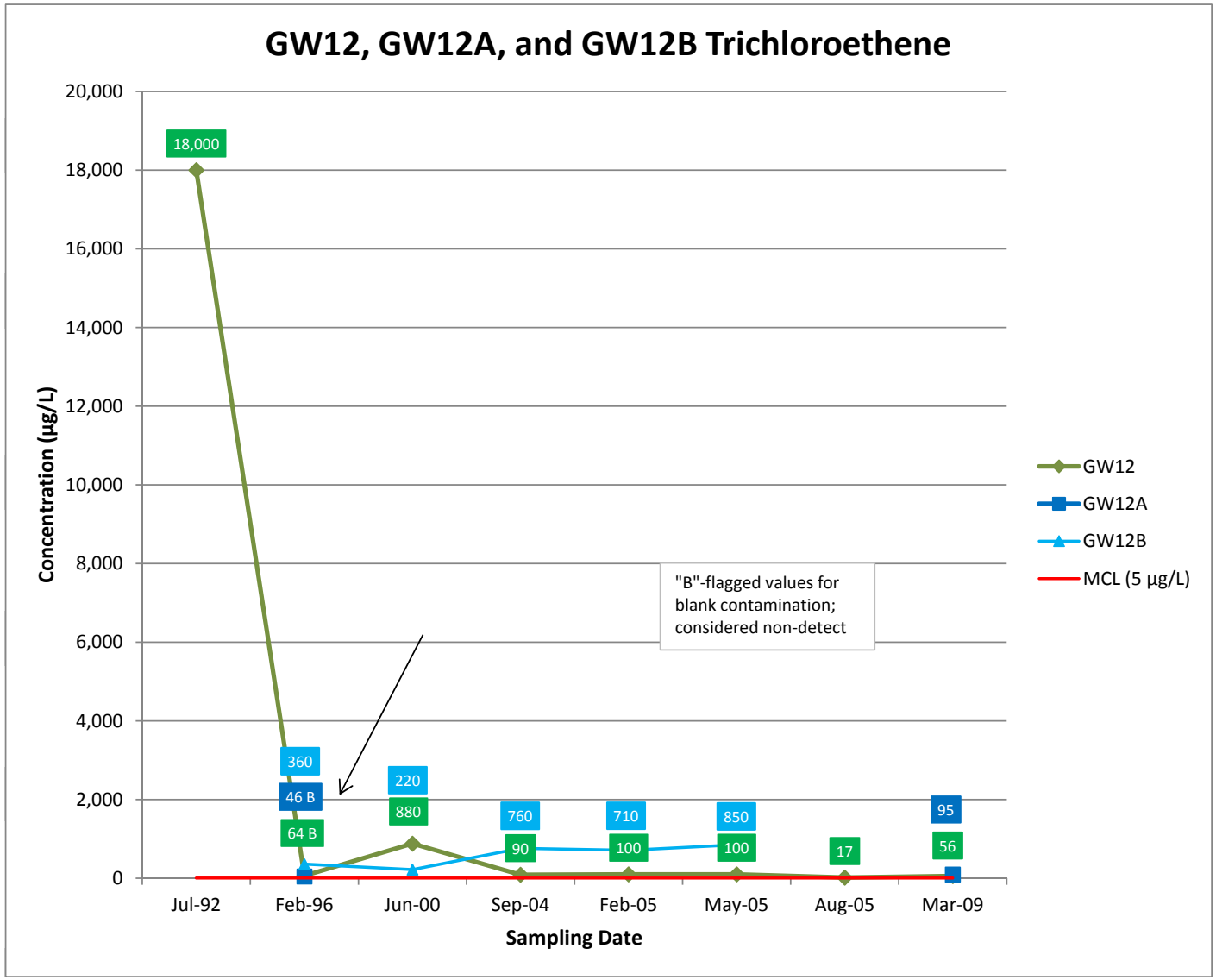


FIGURE 8-2
GW12, GW12A, and GW12B Trichloroethene Trend Graph: July 1992 through March 2009
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

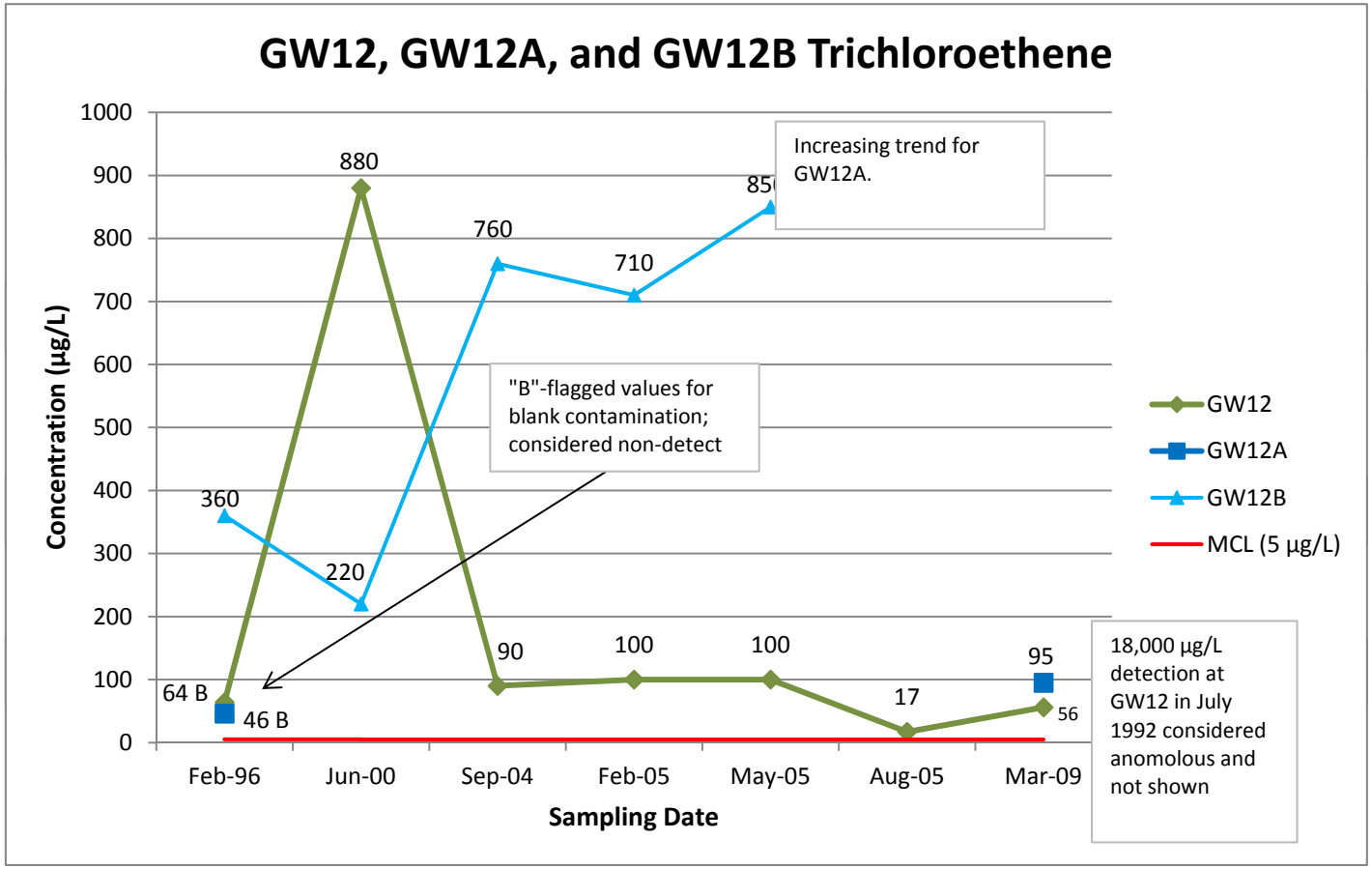


FIGURE 8-3
GW12, GW12A, and GW12B Trichloroethene Trend Graph: February 1996 through March 2009
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

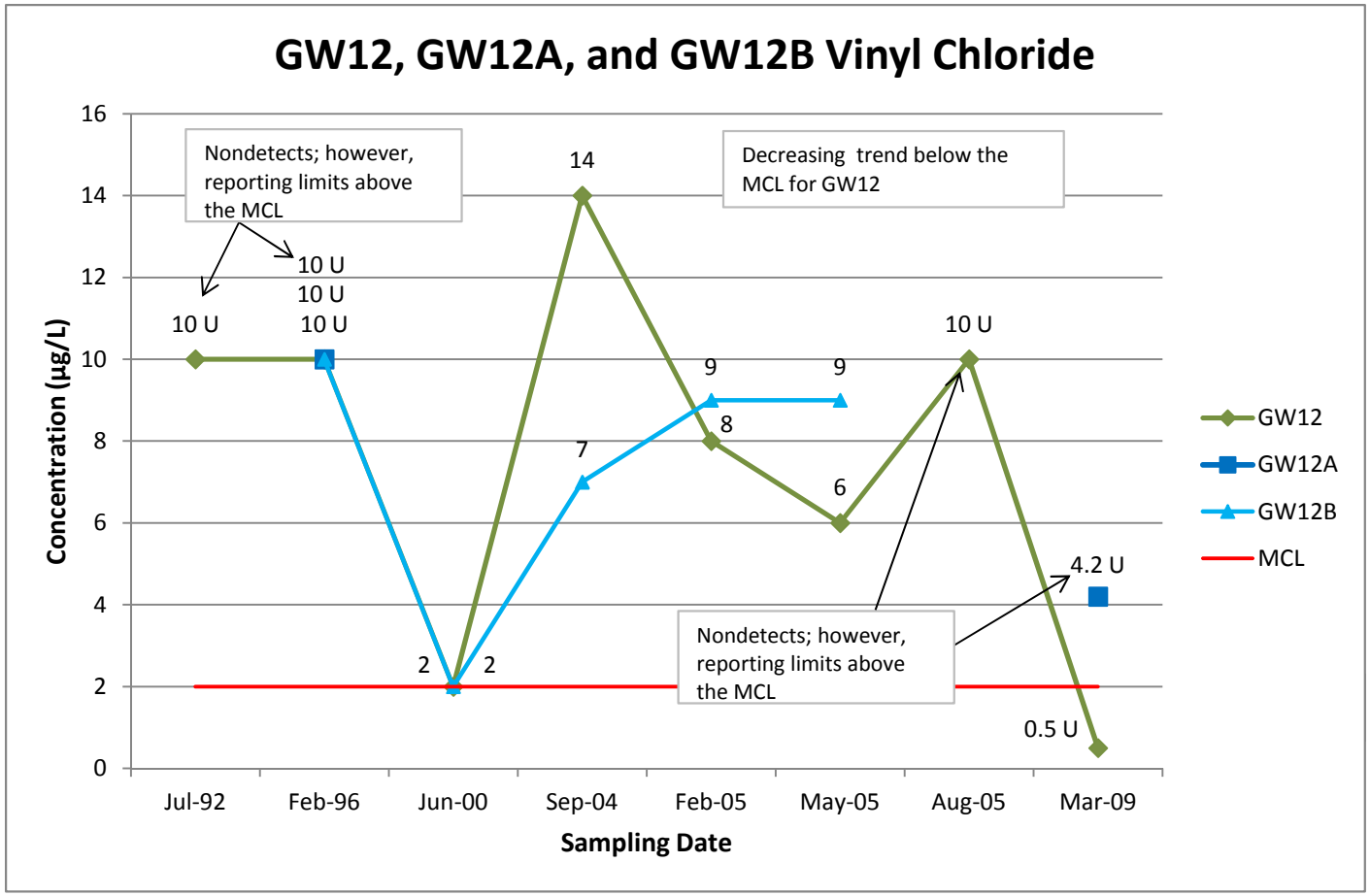


FIGURE 8-4
GW12, GW12A, and GW12B Vinyl Chlorine Trend Graph: July 1992 through March 2009
Phase II Remedial Investigation Report, Sites 1 and 3
Naval Weapons Station Yorktown
Yorktown, Virginia

SECTION 9

Recommendations

This section presents considerations for risk management of some of the COCs identified for Sites 1 and 3 and presents recommendations for future work at Sites 1 and 3 in consideration of the previous sections of the report.

9.1 Site 1

COCs identified for groundwater at Site 1 (combined Columbia and Yorktown-Eastover) comprise PCE, TCE, cis-1,2-DCE, vinyl chloride, 1,1,2-TCA, arsenic, chromium, cobalt, iron and manganese. VOC contamination is widespread across the site and contributes to unacceptable risk to multiple receptors due to concentrations in groundwater. Concentrations of PCE, TCE, cis-1,2-DCE, and vinyl chloride in groundwater also exceed MCLs. 1,1,2-TCA was identified as a COC for groundwater because of the RME lifetime resident cancer risk of $1.6x10^{-6}$. The risk due to 1,1,2-TCA alone is within USEPA's acceptable risk range of 10^{-4} to 10^{-6}. Therefore, although it contributes to the cumulative risk, the contribution is small compared to the other COCs, and it is not believed that additional action is necessary to address this contaminant. However, additional action will be necessary to address the remaining VOCs and most remedies capable of remediating the chlorinated ethenes will also address 1,1,2-TCA.

Chromium concentrations in groundwater at Site 1 result in an RME cancer risk to the future lifetime resident of $9.7x10^{-6}$ and an RME cancer risk to the future industrial worker of 2.3×10^{-6}. The risks associated with chromium alone are within the USEPA's acceptable risk range of 10^{-4} to 10^{-6}. It should also be noted that the chromium risk is based on the assumption that all of the chromium is present as hexavalent chromium, the more toxic form of chromium. The use of hexavalent chromium to evaluate risks associated with total chromium is extremely conservative since the presence of trivalent chromium is strongly favored in natural waters because the concentrations of constituents known to reduce hexavalent chromium to trivalent chromium generally far outweigh the concentrations of the few constituents known to oxidize trivalent chromium to hexavalent chromium. Furthermore, once reduced, trivalent chromium is very stable in aquatic environments and highly unlikely to oxidize to hexavalent chromium. Trivalent chromium is not carcinogenic. Therefore, no additional action is recommended to address this constituent.

Iron in groundwater at Site 1 is associated with an RME non-cancer HI for the future child resident of 0.2. The target organ/effect for iron is the gastrointestinal system. There are no other COPCs with the same target organ/effect and the HI is less than USEPA's acceptable threshold of one. Additionally, iron is considered essential for human health. Consequently, additional action is not recommended to address iron at Site 1.

Under the RME (most conservative) scenario, manganese in groundwater at Site 1 is associated with non-cancer hazards to the future adult and child residents of 0.1 and 0.3, respectively. Exposure to manganese effects the central nervous system (the target organ/effect). There are no COPCs that with this target organ and the HI is less than the USEPA's acceptable threshold of one. Additionally, manganese is considered essential for human health. Consequently, additional action is not recommended to address manganese at Site 1.

Arsenic and cobalt are present at Site 1 at concentrations that exceed either the acceptable non-cancer hazard of one or the acceptable carcinogenic risk range of 10^{-4} to 10^{-6}. Cobalt is present in samples from various locations across Site 1 and is not notably higher in the down-gradient portion of the site in comparison to the up-gradient portion of the site. Additionally, while cobalt concentrations exceed background, the reporting limit for the background dataset was 50 µg/L, which exceeds all detections of cobalt in groundwater at Site 1. Arsenic is present sporadically across the site, with the highest dissolved concentration of arsenic detected in the monitoring well across Indian Field Creek from Sites 1 and 3. Generally, the distribution of arsenic and cobalt at Site 1does not appear consistent with a release from the site. Consequently, it is recommended that no additional action be considered to address these metals.

An FS is recommended to address the chlorinated VOCs at Site 1. However, prior to completion of the FS, additional investigation is warranted to determine groundwater flow directions and potential contamination in

the vicinity of the unnamed tributary between Sites 1 and 3 and Indian Field Creek. Additionally, waste delineation activities and a cover depth survey are necessary to determine the extent of the landfill, since groundwater contamination will only be addressed beyond the extent of the landfill. It is also recommended that additional surface water, sediment, and pore water samples be collected in the vicinity of the unnamed tributary and the ephemeral stream into the tributary. It is recommended that the proposed sampling be described in detail as part of a separate SAP and potential ecological risks be reassessed using these additional data following their collection. A seep survey is recommended in the spring of 2013 based on a review of average precipitation; if any seeps are present they will be sampled. The following monitoring well pairs are proposed to better evaluate vertical gradient:

- A pair in the location of MIP 17, one screened at the top of the Yorktown-Eastover aquifer and the other at the bottom of the same unit
- A pair located downgradient of 1GW22 by the ephemeral feeder stream to the unnamed tributary to Indian Field Creek (shallow well screened at the top of the Yorktown-Eastover and deep well screened at the bottom of the same unit)
- One deep well adjacent to 1GW24 to evaluate the vertical gradient adjacent to Indian Field Creek

It is recommended that the analytical parameters for sampling of the above-mentioned wells include the full suite of chemicals previously analyzed for other site wells as well as 1,4-dioxane, as a human health toxicity value has recently become available for this chemical. It is recommended that the proposed sampling described above be completed as part of a pre-FS investigation with results summarized in a Pre-FS Investigation Technical Memorandum.

9.2 Site 3

COCs identified for groundwater at Site 3 (Yorktown-Eastover aquifer) comprise TCE, cis-1,2-DCE, vinyl chloride, chromium, manganese, and arsenic. VOC contamination is widespread across the site and contributes to unacceptable risk to multiple receptors due to concentrations in groundwater. Concentrations in groundwater also exceed MCLs. Consequently, additional action is necessary to address TCE, cis-1,2-DCE and vinyl chloride at the site.

Chromium in groundwater poses risk only under the construction worker scenario, due to concentrations in total metals samples. The total HI for the construction worker non-cancer hazard 1.1, which slightly exceeds USEPA's threshold for an acceptable hazard (1). The individual contribution to the hazard from chromium (HQ) is 0.3 and there were no individual target organ HIs greater than one. Consequently, it is recommended that no additional action be required to address chromium in groundwater at Site 3.

Manganese and arsenic are present in groundwater at levels posing unacceptable risks to future residential receptors. Landfill waste at the site has been removed; however, TPH-contaminated soil remains in place in the central portion of the site. The TPH may be providing an electron donor source to the groundwater, facilitating reductive dechlorination of the chlorinated VOCs at the site, but also creating reducing conditions responsible for the mobilization of arsenic and manganese. It is likely that as the source of TPH is depleted, or if the source is removed, concentrations of arsenic and manganese would decline at the site.

An FS is recommended to address concentrations of TCE, cis-1,2-DCE, vinyl chloride, arsenic and manganese in groundwater at Site 3. The FS should also include one or more remedial alternatives that include the long-term monitoring of arsenic and manganese in groundwater following depletion or removal of the TPH contamination in soils because concentrations of these metals are likely to decline if reducing conditions diminish. It is recommended that a monitoring well be installed northwest of 3GW28 and sampled to complete the delineation of contamination in that area of Site 3. Additionally, while only one SVOC (phenanthrene) was ever detected in groundwater in the past, there is some uncertainty with regards to potential SVOC contamination in groundwater due to contamination present within soil. To address this uncertainty, it is recommended that samples from monitoring well 3GW22 be analyzed for SVOCs only. Wells 3GW20, 3GW24, 3GW27, and 3GW28 will be sampled for 1,4-dioxane as a human health toxicity value has recently become available to screen against. The sampling described is proposed to be completed as part of a pre-design investigation.

SECTION 10

References

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Agency for Toxic Substances and Disease Registry (ATSDR). 1990b. *Toxicological profile for silver.* TO-90/24.

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Appendix A
Membrane Interface Probe (MIP) Report

ZEBRA MIP Field Book

CH2M Hill	NWS Yorktown, VA				
Number of Days MIP	10	1	2		3
Weather		Sunny	Sunny		Sunny
DEPTH for DAY		97	147		95
DATE		1/14/2009	1/15/2009	1/15/2009	1/16/2009
DS14934					
Number of locations	23	CHMP1	CHMP2	CHMP3	CHMP4
MIP Unit		gator	gator	gator	gator
Probe #I134	137	97			
Probe #I231	242		59	88	95
Probe #I169	970				
Total Depth	1349				
Response Test		Good	Good	Good	Good
PID MAX		79365	64713	62271	323565
ECD MAX		369963	327228	380952	418803
FID MAX		12210	12210	12210	18315
Water					
PID Lamp Percentage		50	50	50	50
Mass Flow		40	40	40	40
		Location Notes	Location Notes	Location Notes	Location Notes

ZEBRA ENVIRONMENTAL Subsurface Sampling, Injection and Data Collection For Environmental Professionals (800-PROBE-IT)

ZEBRA MIP Field Book

CH2M Hill	NWS Yorktown, VA						
Number of Days MIP	10	4			5		
Weather		Snow			Cloudy		
DEPTH for DAY		184			183		
DATE		1/20/2009	1/20/2009	1/20/2009	1/21/2009	1/21/2009	1/21/2009
DS14934							
Number of locations	23	CHMP5	CHMP6	CHMP7	CHMP8	CHMP9	CHMP10
MIP Unit		gator	gator	gator	gator	gator	gator
Probe #I134	137						
Probe #I231	242						
Probe #I169	970	63	60	61	62	61	60
Total Depth	1349						
Response Test		Good	Good	Good	Good	Good	Good
PID MAX		194139	313797	203907	67155	118437	101343
ECD MAX		992674	365079	197802	175824	222222	786325
FID MAX		18315	18315	18315	18315	17094	19324
Water							
PID Lamp Percentage		50	50	50	50	50	50
Mass Flow		40	40	40	40	40	40
		Location Notes	Location Notes	Location Notes	Location Notes	Location Notes	Location Notes

ZEBRA MIP Field Book

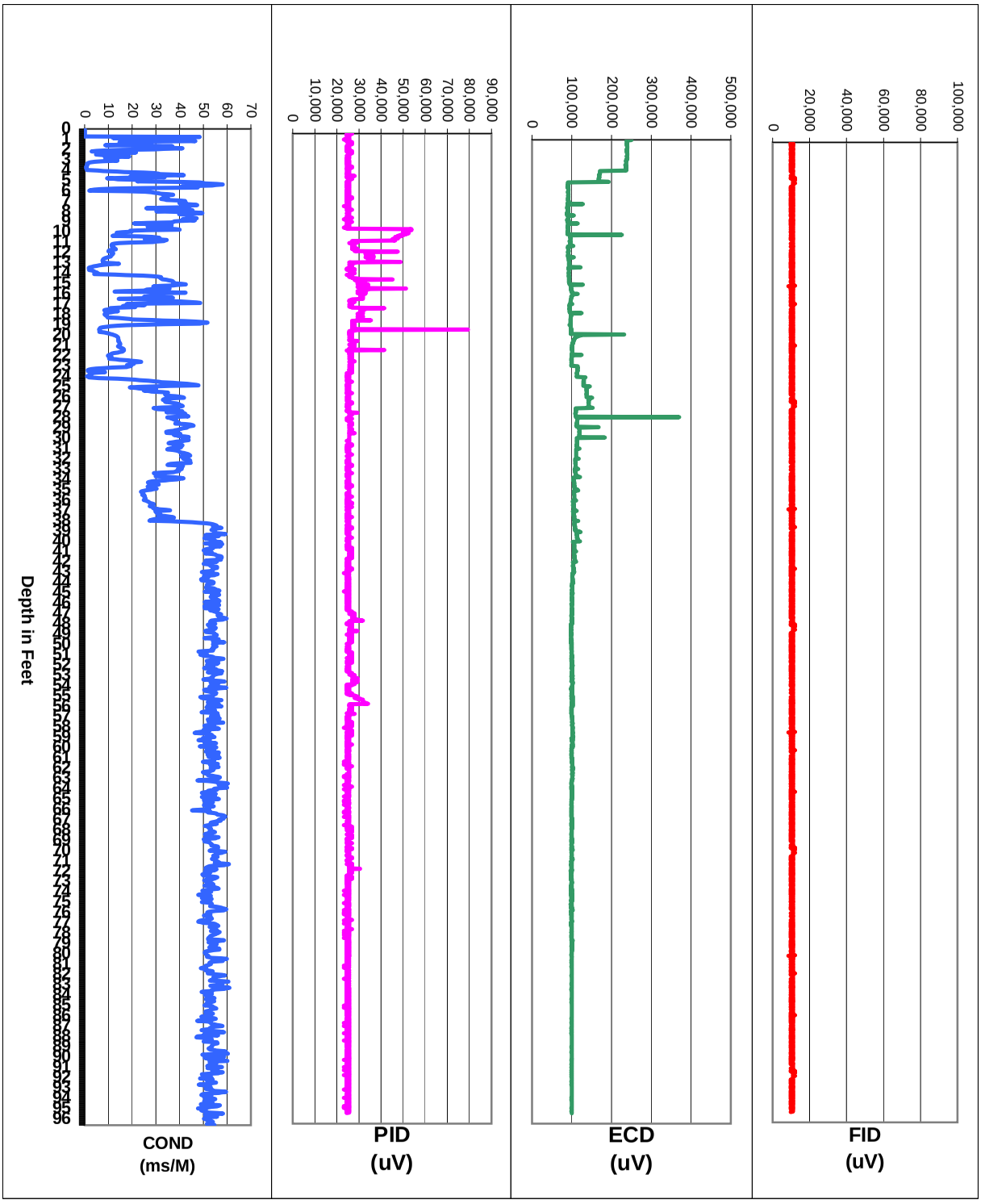
CH2M Hill	NWS Yorktown, VA								
Number of Days MIP	10	6		7			8		
Weather		Cloudy		Sunny			Cold		
DEPTH for DAY		123		161			125		
DATE		1/22/2009	1/22/2009	1/23/2009	1/23/2009	1/23/2009	1/26/2009	1/26/2009	1/26/2009
DS14934									
Number of locations	23	CHMP11	CHMP12	CHMP13	CHMP14	CHMP15	CHMP16	CHMP17	CHMP18
MIP Unit		gator	gator	gator	gator	gator	gator	gator	gator
Probe #I134	137								
Probe #I231	242								
Probe #I169	970	61	62	61	53	47	48	42	35
Total Depth	1349								
Response Test		Good	Good	Good	Good	Good	Good	Good	Good
PID MAX		133089	87912	101343	46398	85470	169719	41514	58608
ECD MAX		185592	217338	231990	222222	286935	992674	221001	213675
FID MAX		19536	17094	17094	12210	10989	14652	12210	12210
Water									
PID Lamp Percentage		50	50	50	50	50	50	50	50
Mass Flow		40	40	40	40	40	40	40	40
		Location Notes	Location Notes	Location Notes	Location Notes	Location Notes	Location Notes	Location Notes	Location Notes

ZEBRA MIP Field Book

CH2M Hill	NWS Yorktown, VA					
Number of Days MIP	10	9			10	
Weather		Rain			Ice	
DEPTH for DAY		146			88	
DATE		1/27/2009	1/27/2009	1/27/2009	1/28/2009	1/28/2009
DS14934						
Number of locations	23	CHMP19	CHMP20	CHMP21	CHMP22	CHMP23
MIP Unit		gator	gator	gator	gator	gator
Probe #I134	137					40
Probe #I231	242					
Probe #I169	970	44	45	57	48	
Total Depth	1349					
Response Test		Good	Good	Good	Good	Good
PID MAX		62271	45177	100122	40293	39072
ECD MAX		379731	191697	275946	185592	231990
FID MAX		19536	18315	18315	15873	15873
Water						
PID Lamp Percentage		50	50	50	50	50
Mass Flow		40	40	40	40	40
		Location Notes	Location Notes	Location Notes	Location Notes	Location Notes

Site 1

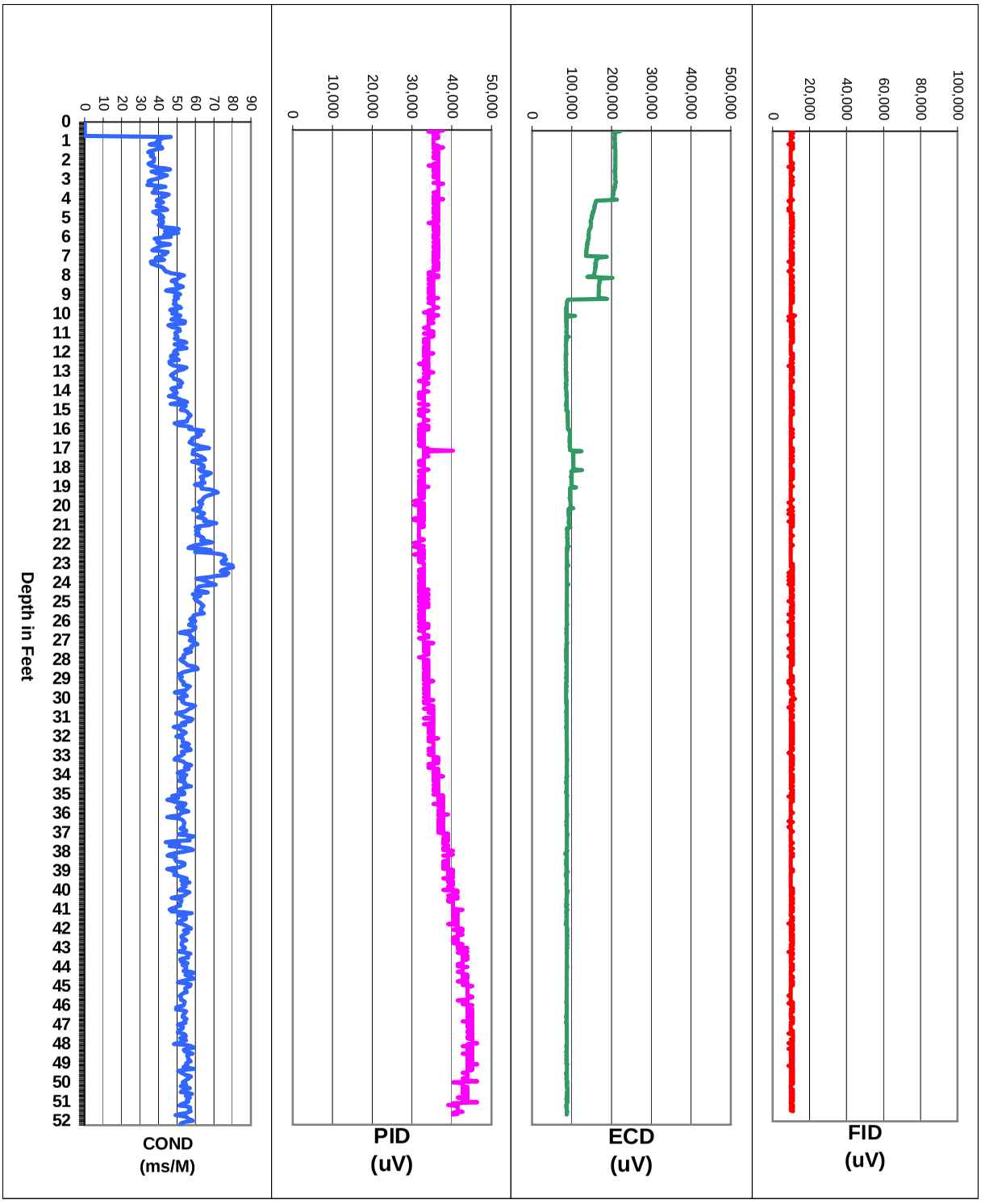
ZEBRA EC/MIP Summary Log, Point CHMP1
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/14/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 1 of 0

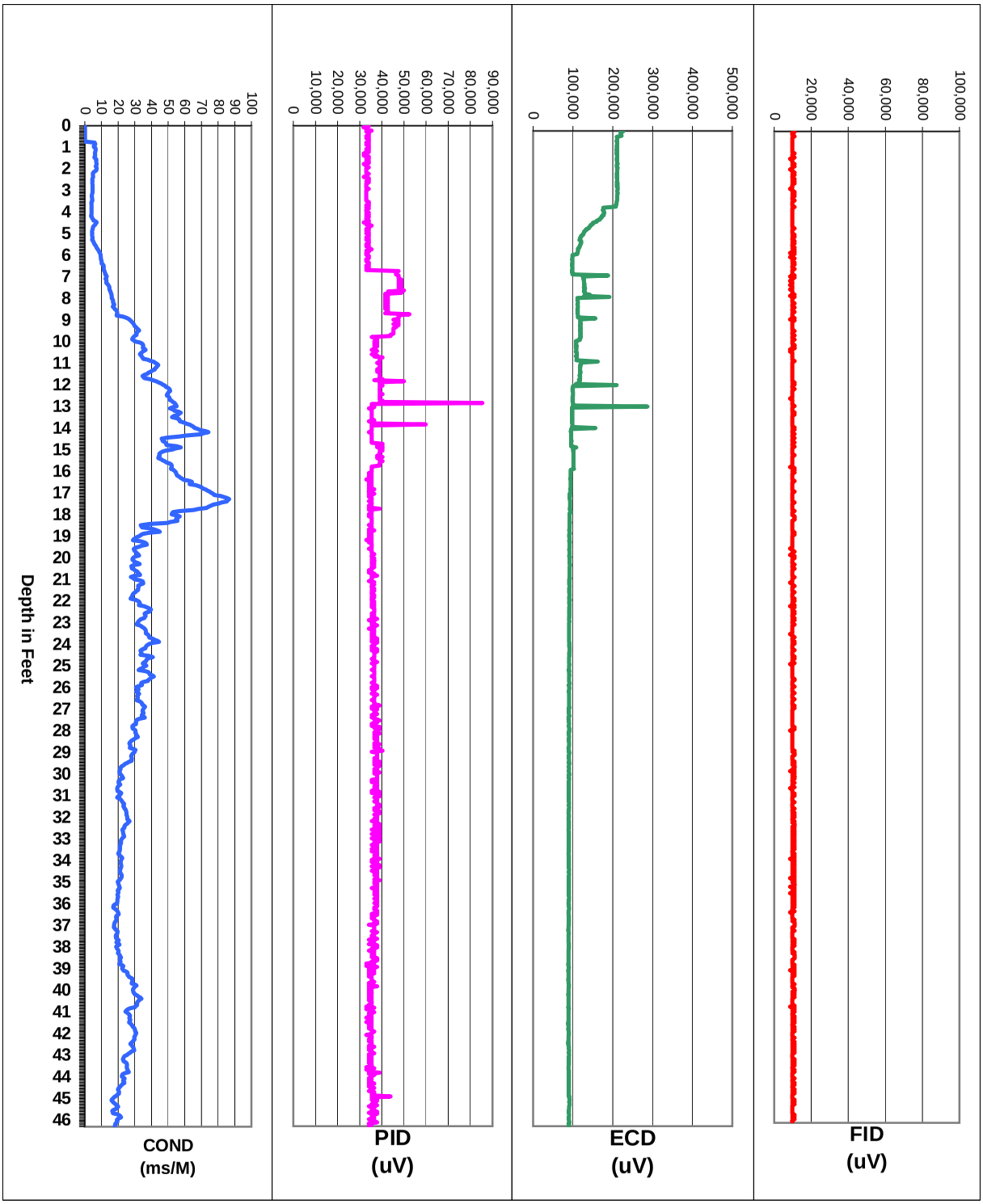
ZEBRA EC/MIP Summary Log, Point CHMP14
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/23/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 14 of 0

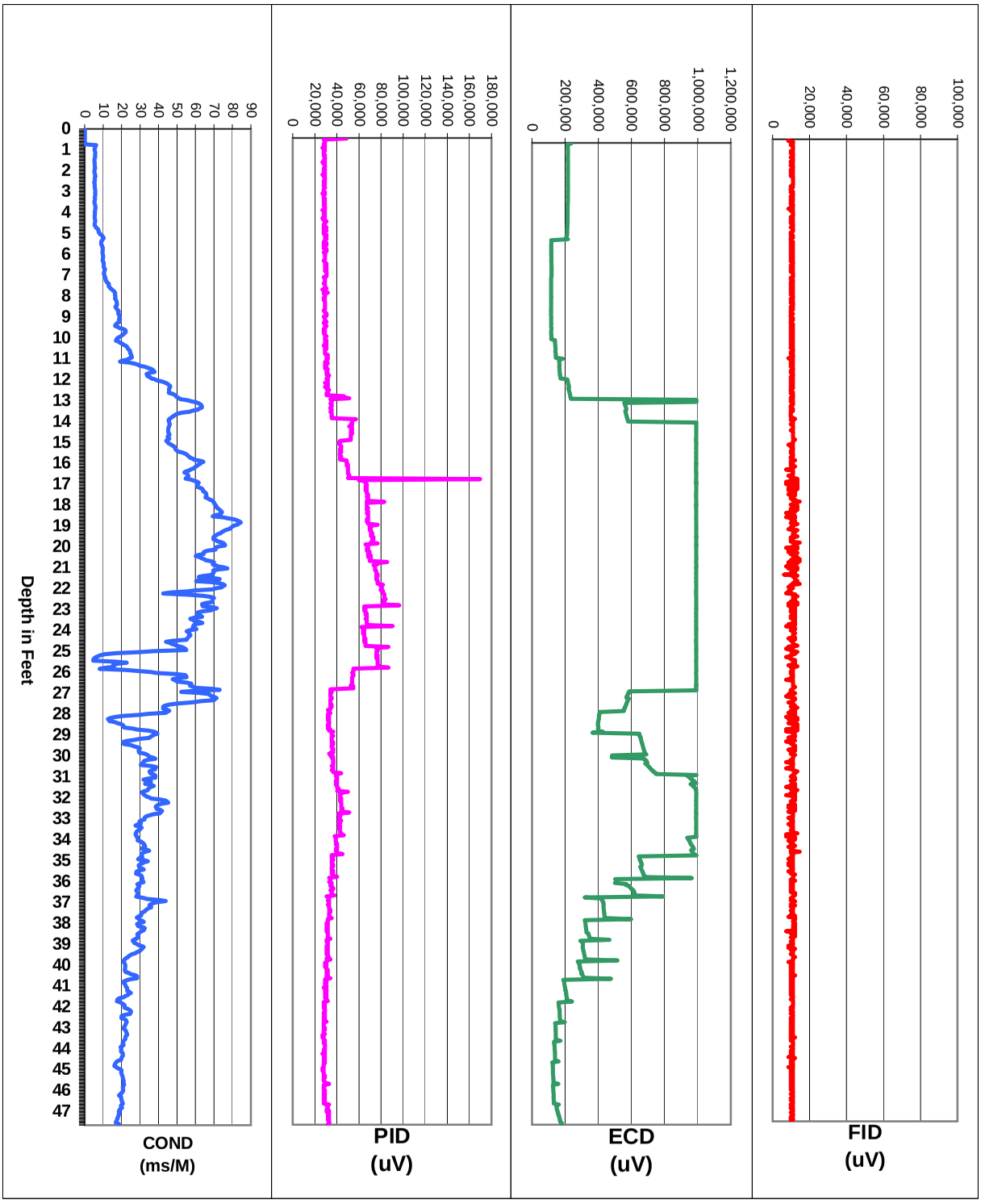
ZEBRA EC/MIP Summary Log, Point CHMP15
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/23/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 15 of 0

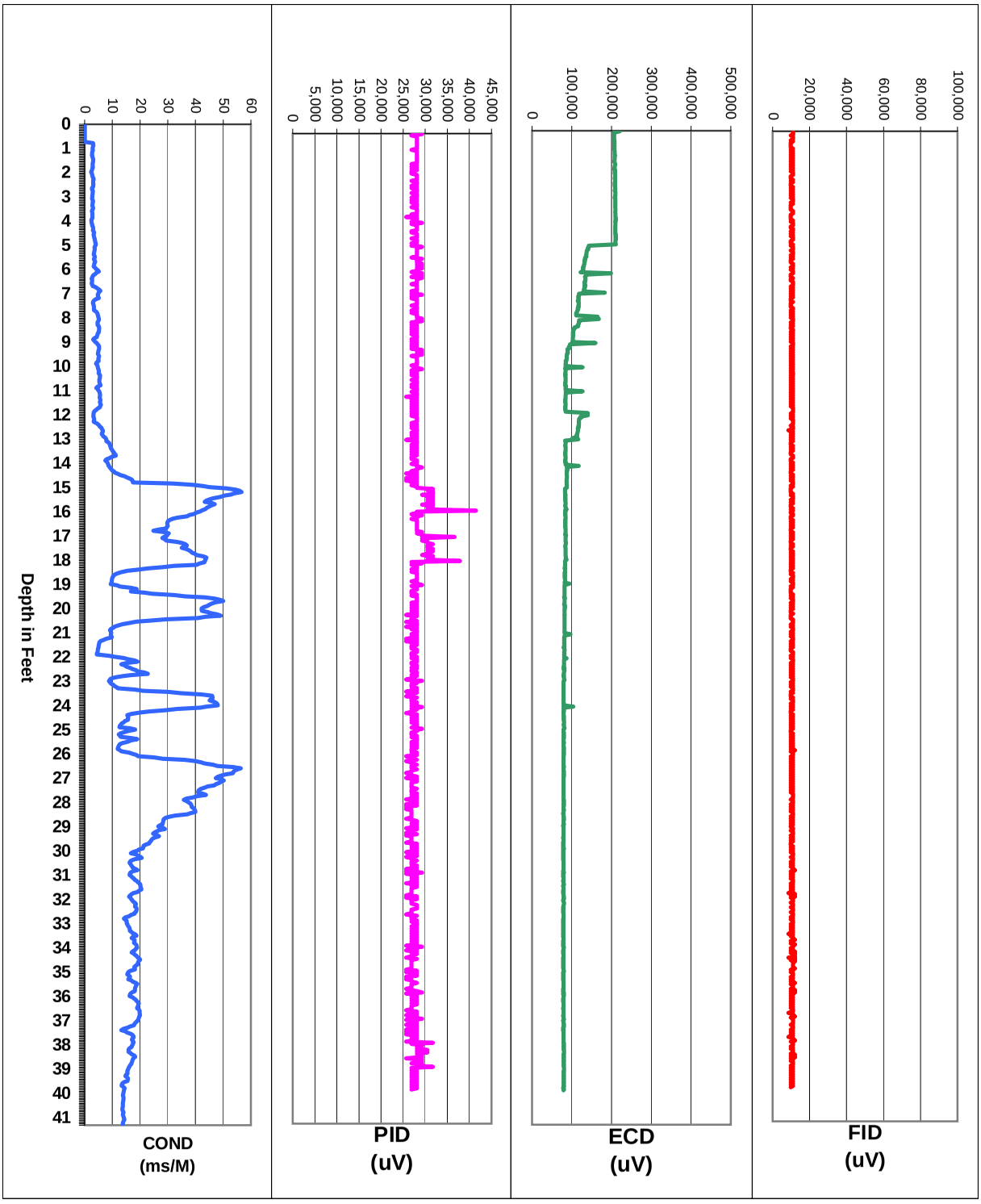
ZEBRA EC/MIP Summary Log, Point CHMP16
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/26/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 16 of 0

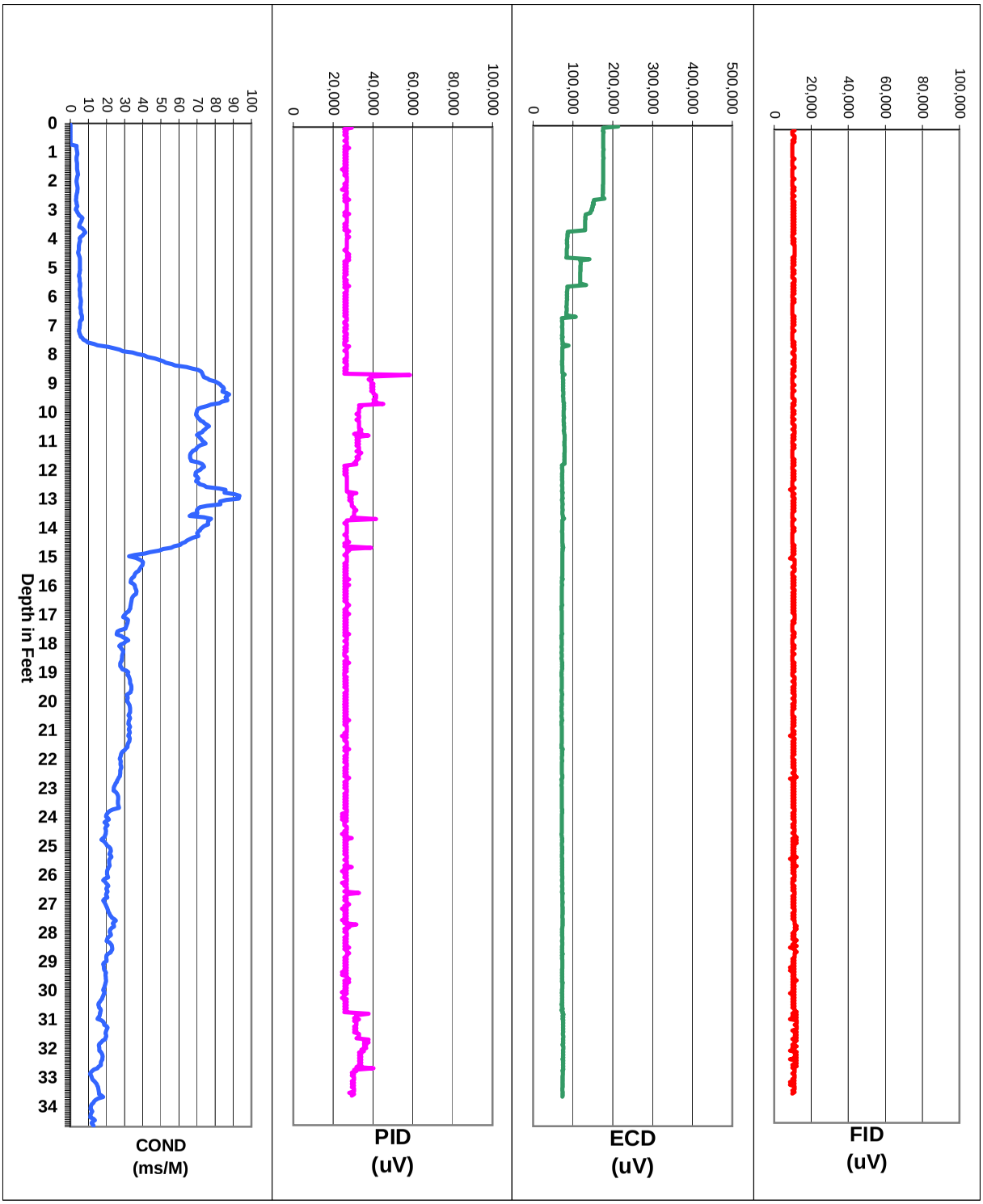
ZEBRA EC/MIP Summary Log, Point CHMP17
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/26/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 17 of 0

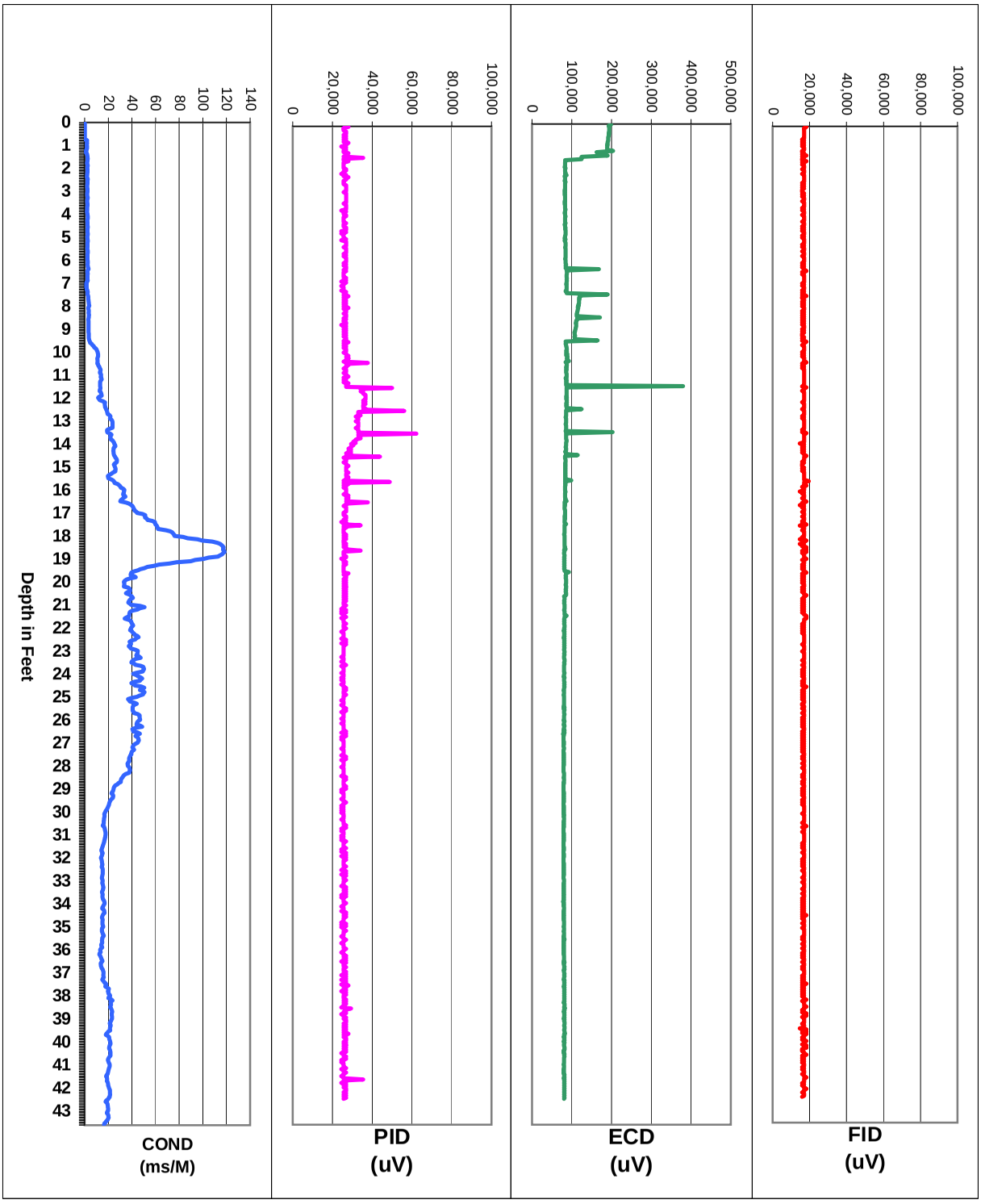
ZEBRA EC/MIP Summary Log, Point CHMP18
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/26/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 18 of 0

ZEBRA EC/MIP Summary Log, Point CHMP19
Yorktown, VA

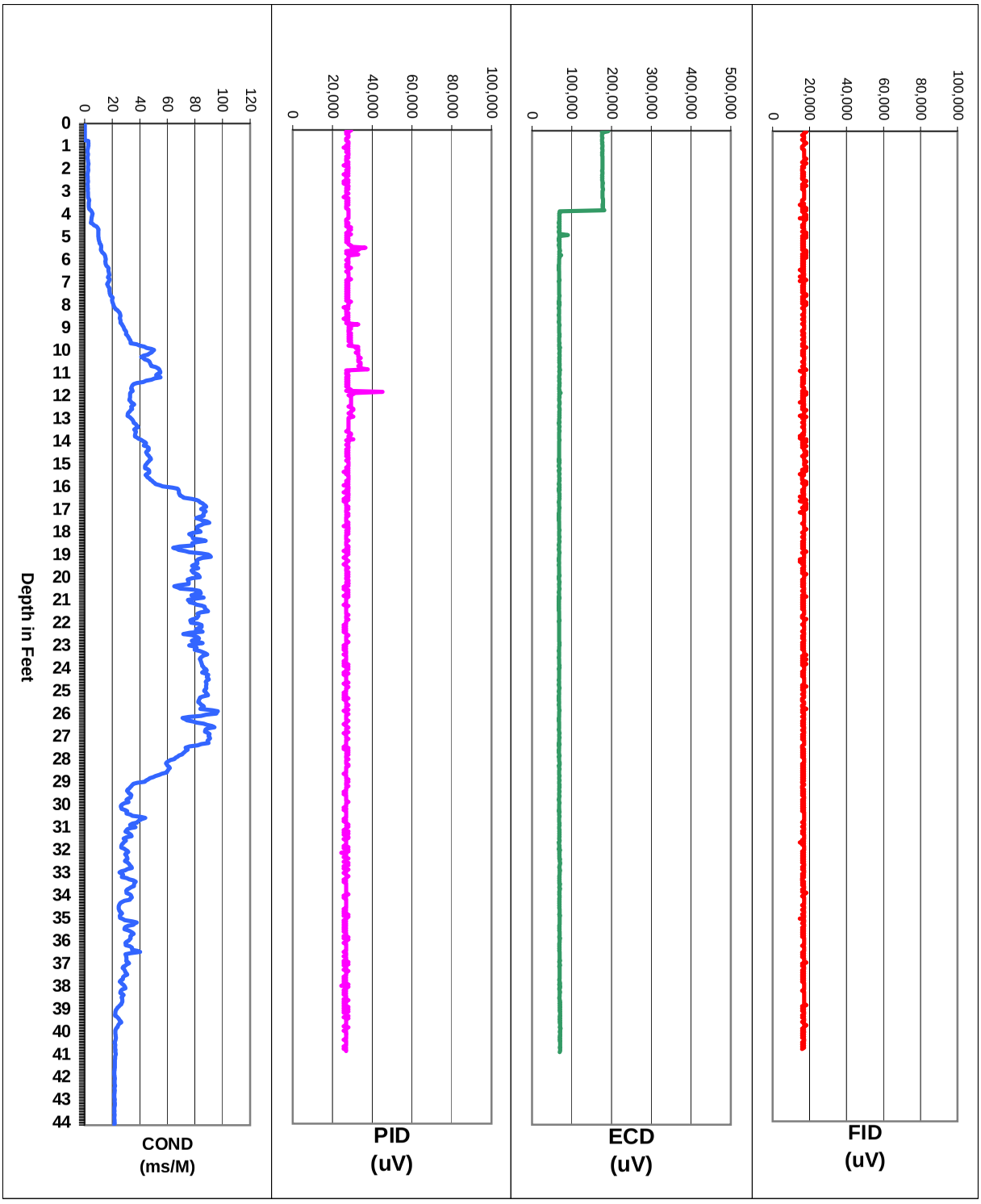


ZEBRA

for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/27/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 19 of 0

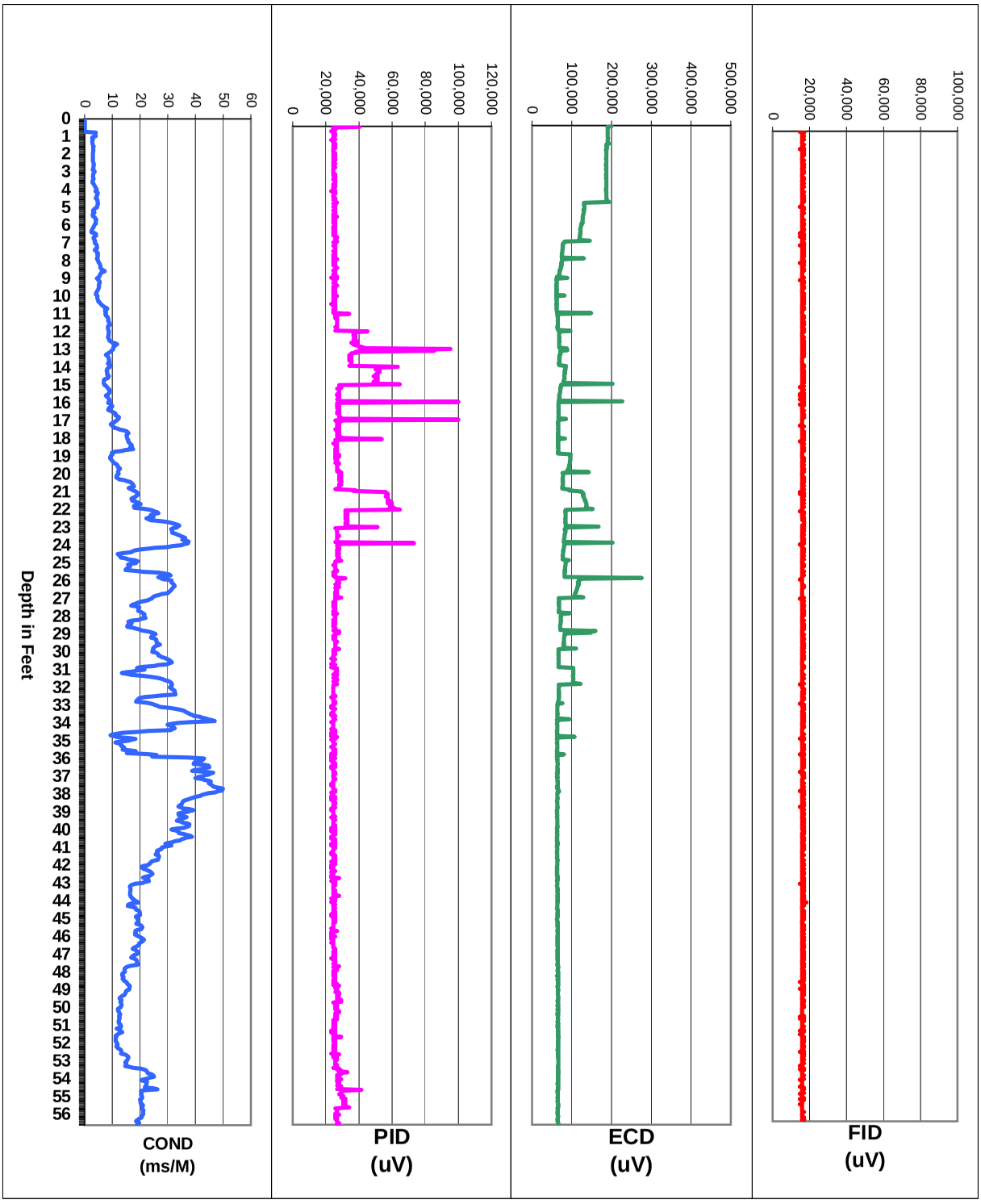
ZEBRA EC/MIP Summary Log, Point CHMP20
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/27/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 20 of 0

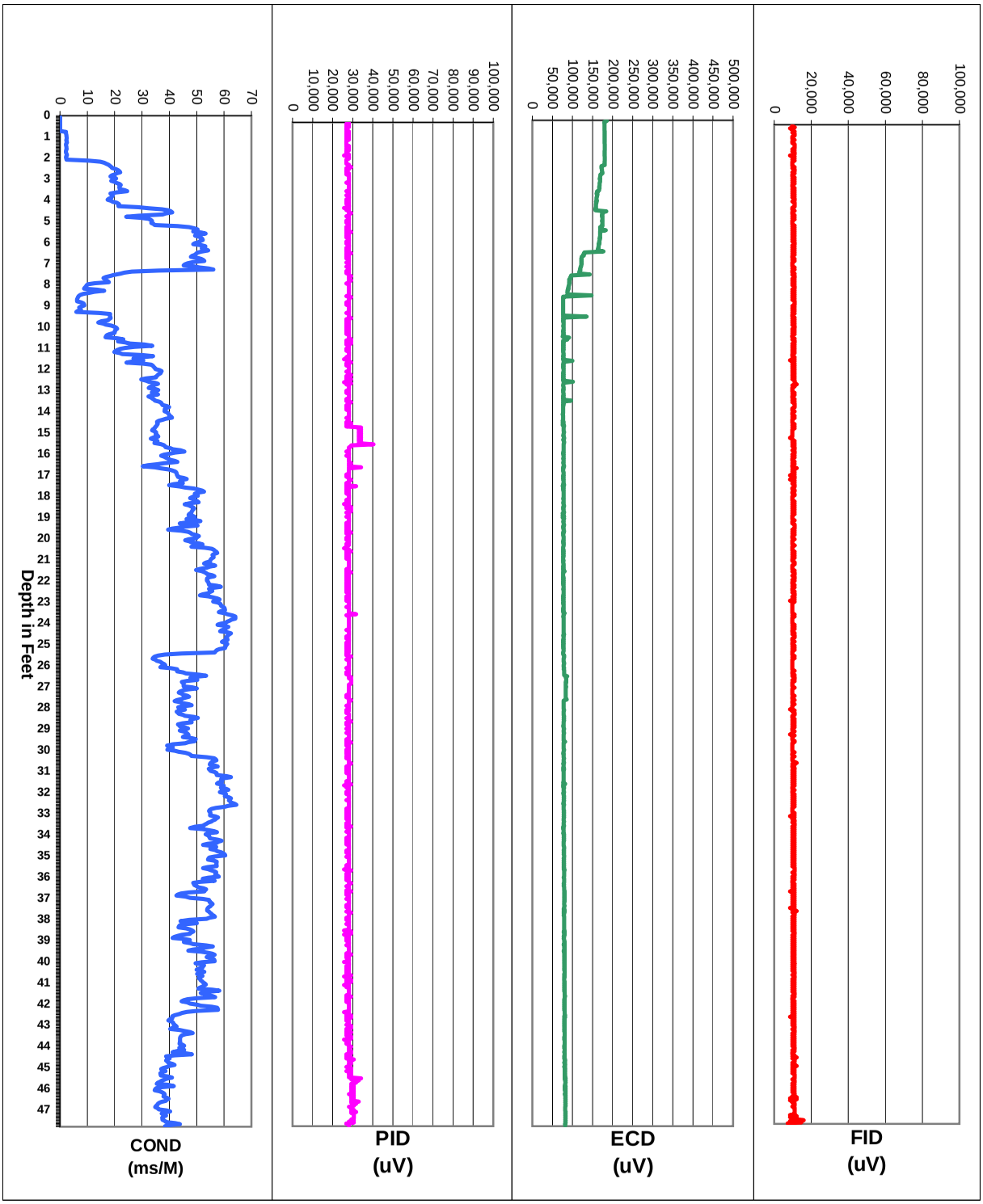
ZEBRA EC/MIP Summary Log, Point CHMP21
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/27/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 21 of 0

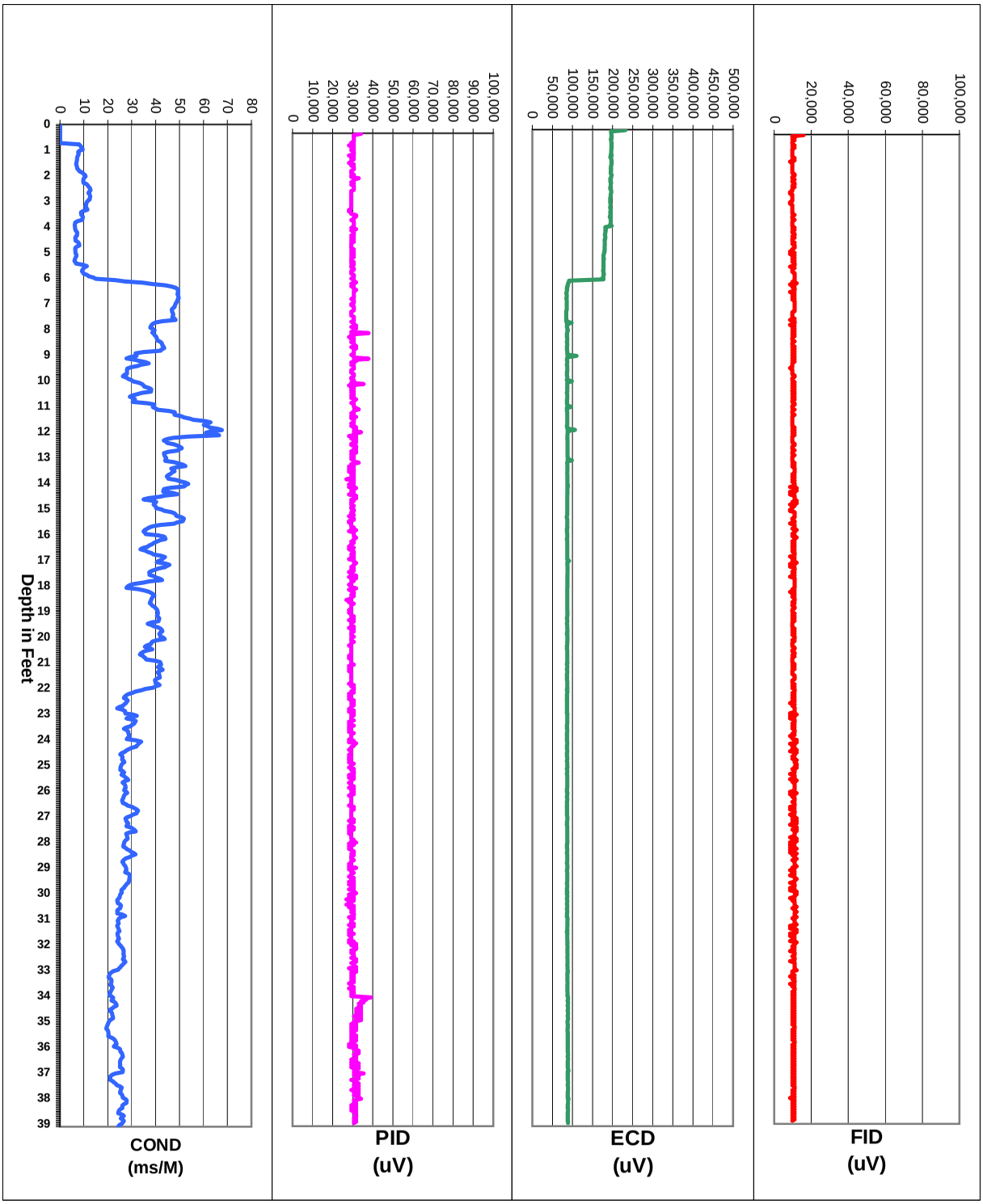
ZEBRA EC/MIP Summary Log, Point CHMP22
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

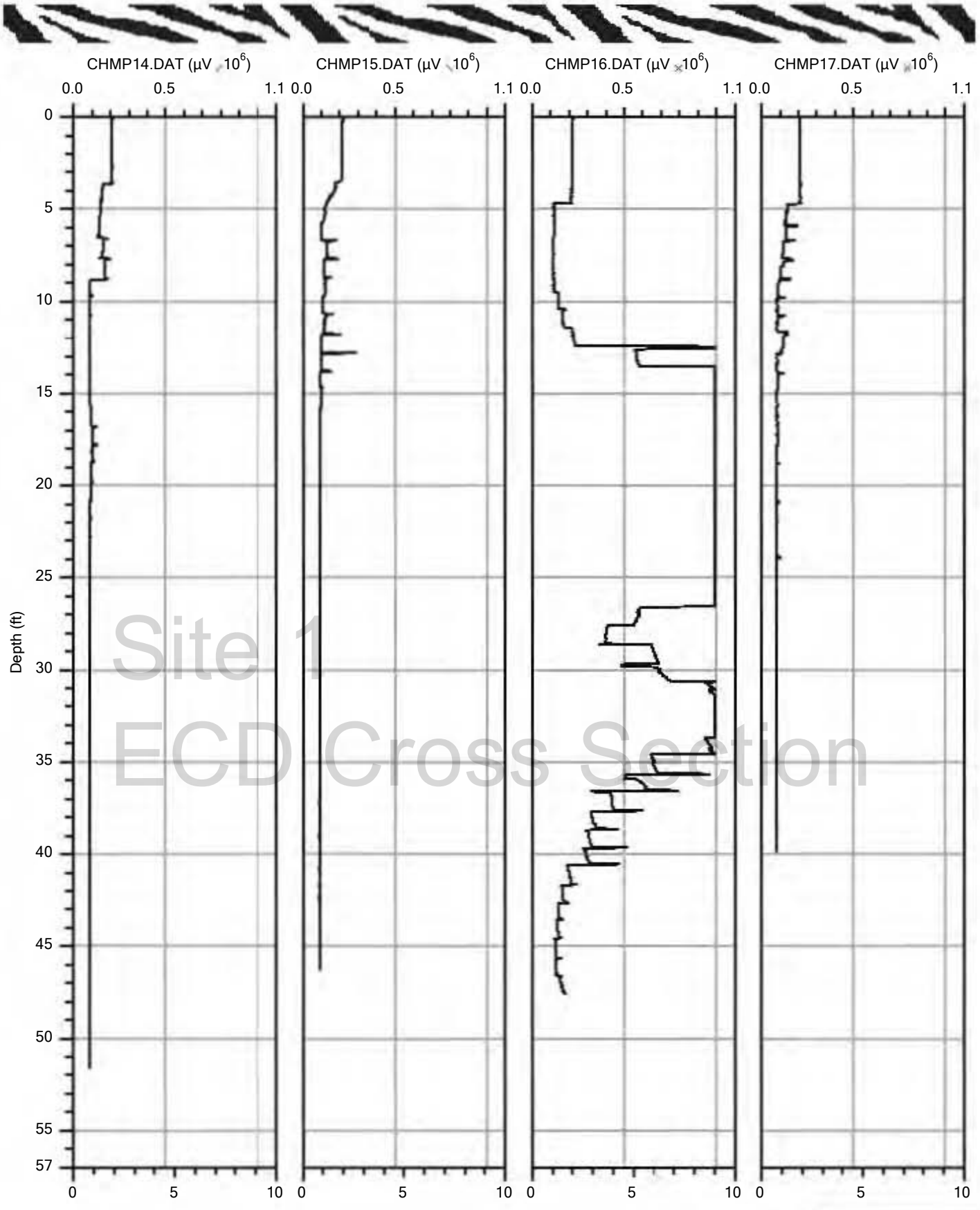
Date: 1/28/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 22 of 0

ZEBRA EC/MIP Summary Log, Point CHMP23
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/28/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: John D
Point 23 of 0



CHMP14.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

CHMP15.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

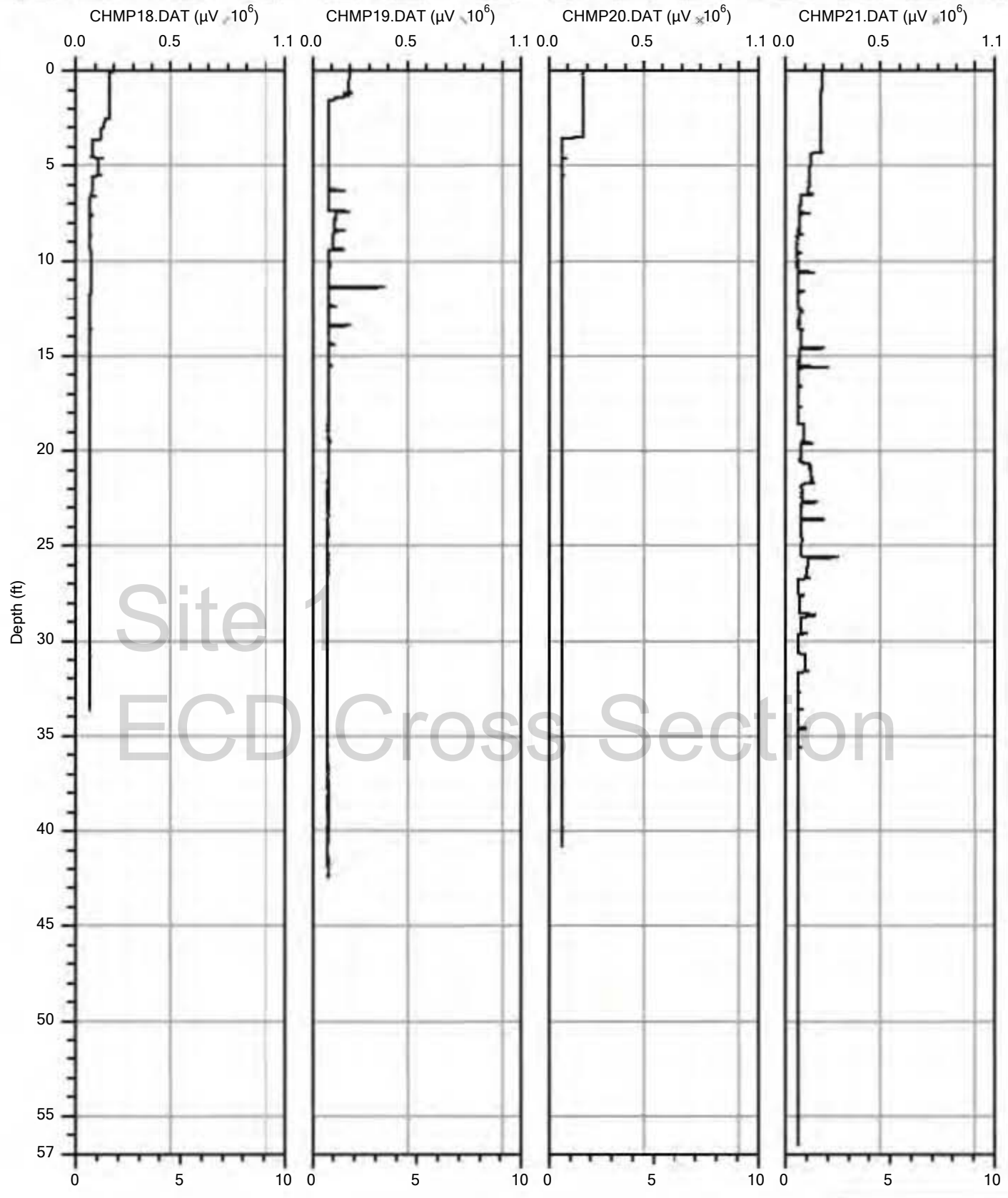
CHMP16.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 58″ W

CHMP17.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 57″ W

ECD Max

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CH2MHILL



CHMP18.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 56″ W

CHMP19.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 52″ W

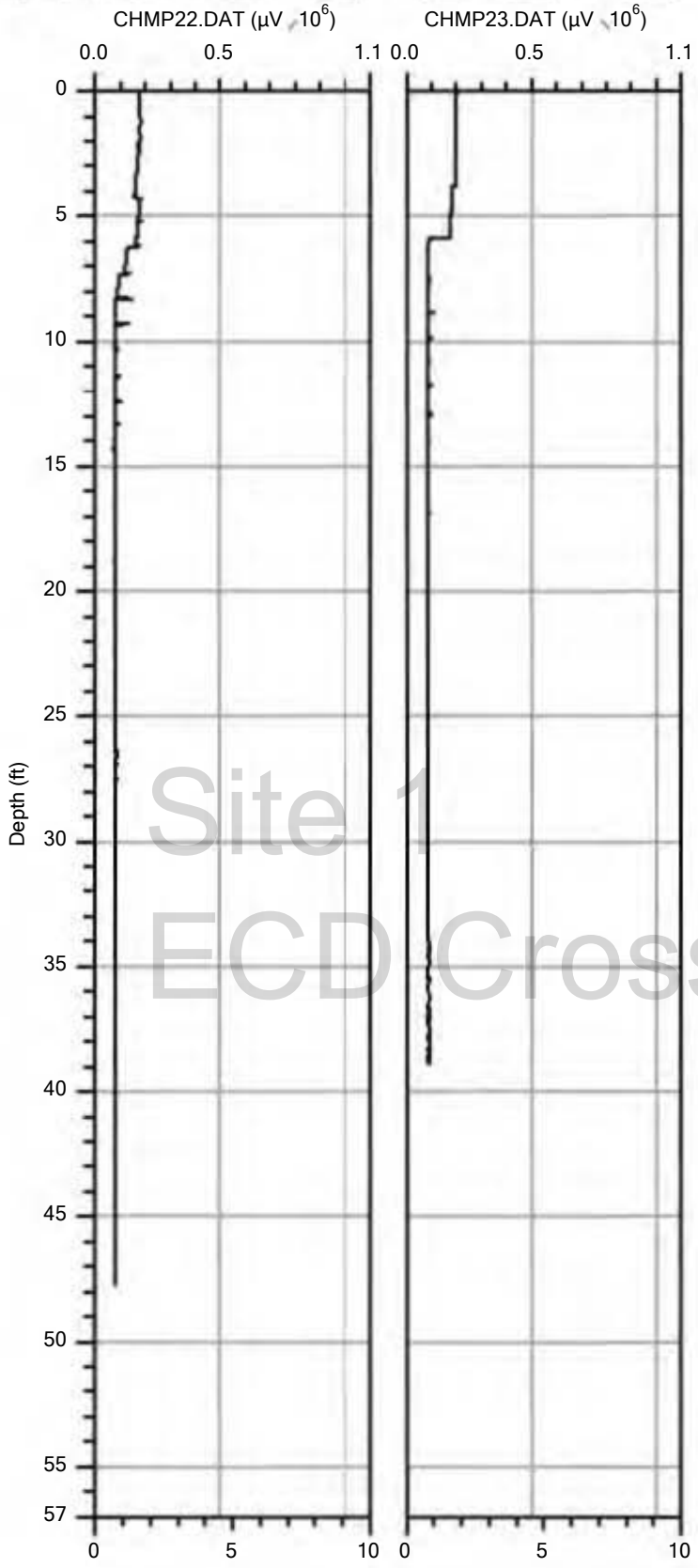
CHMP20.DAT 1/27/2009

CHMP21.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 51″ W

CH2MHILL

ECD Max

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

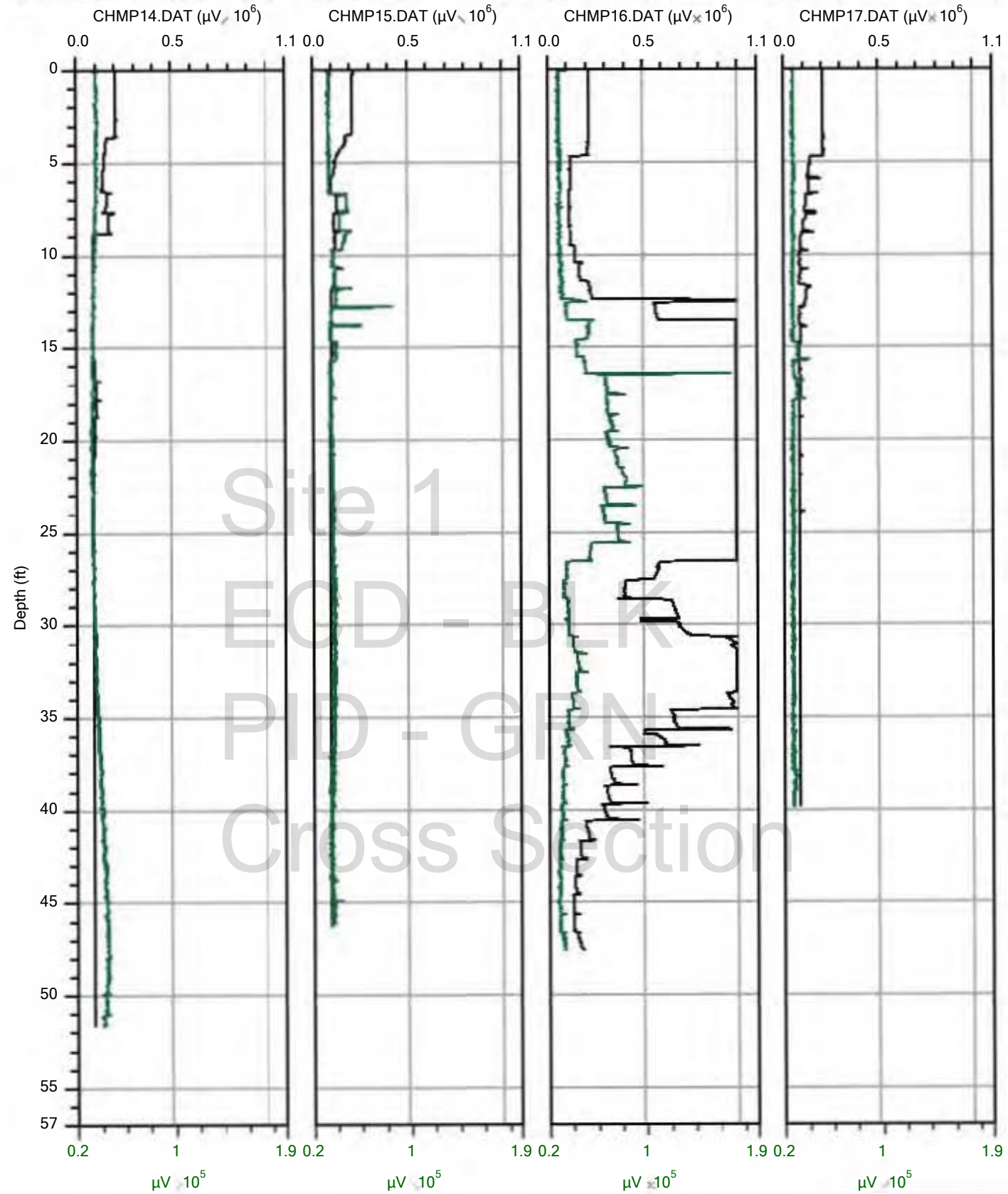


Site 1
ECD Cross Section

ECD Max

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP22.DAT 1/28/2009
0° 0′ 0″, 76° 33′ 50″ W
CHMP23.DAT



CHMP14.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

CHMP15.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

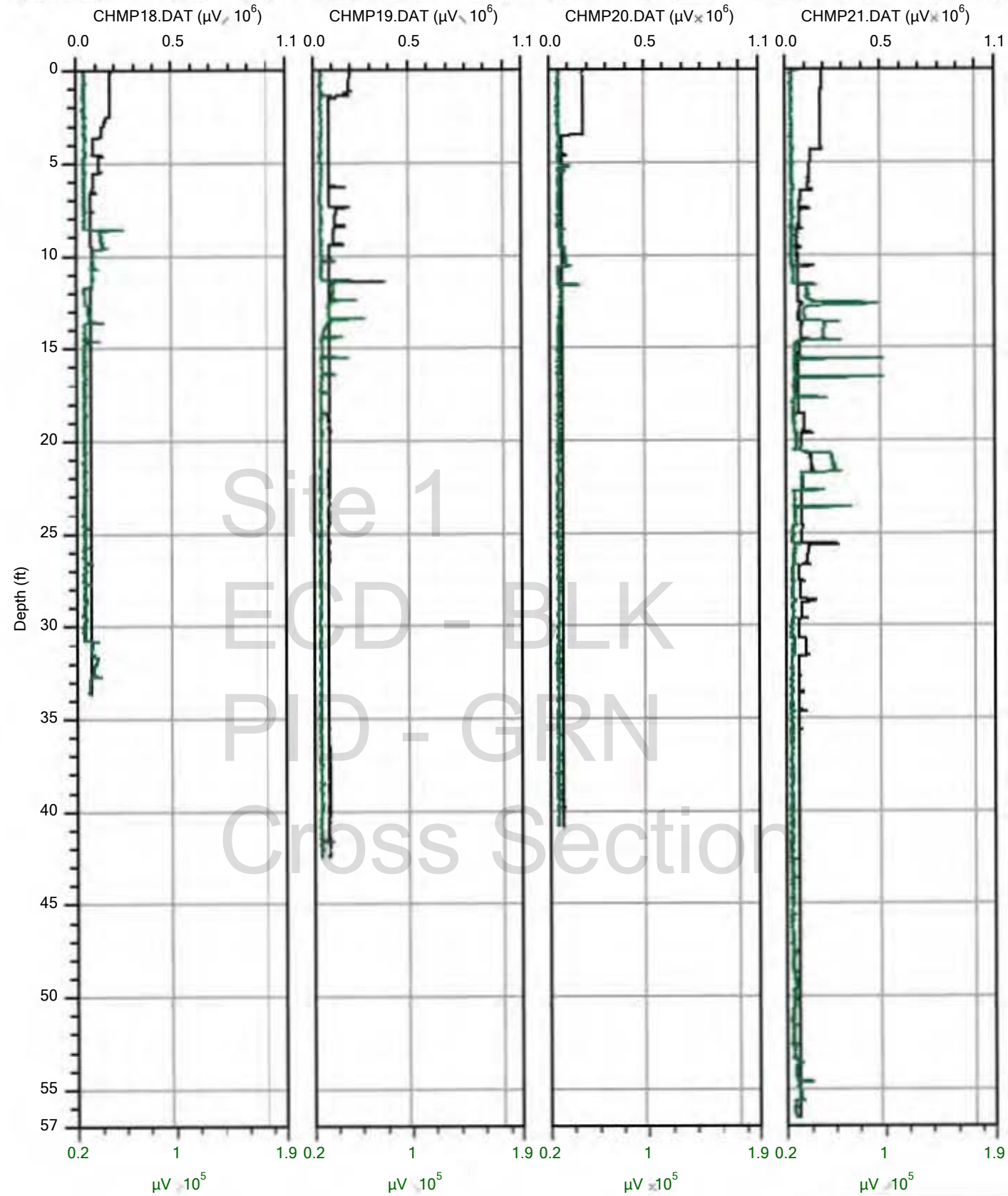
CHMP16.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 58″ W

CHMP17.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 57″ W

ECD Max / PID Max

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CH2MHILL



ECD Max / PID Max

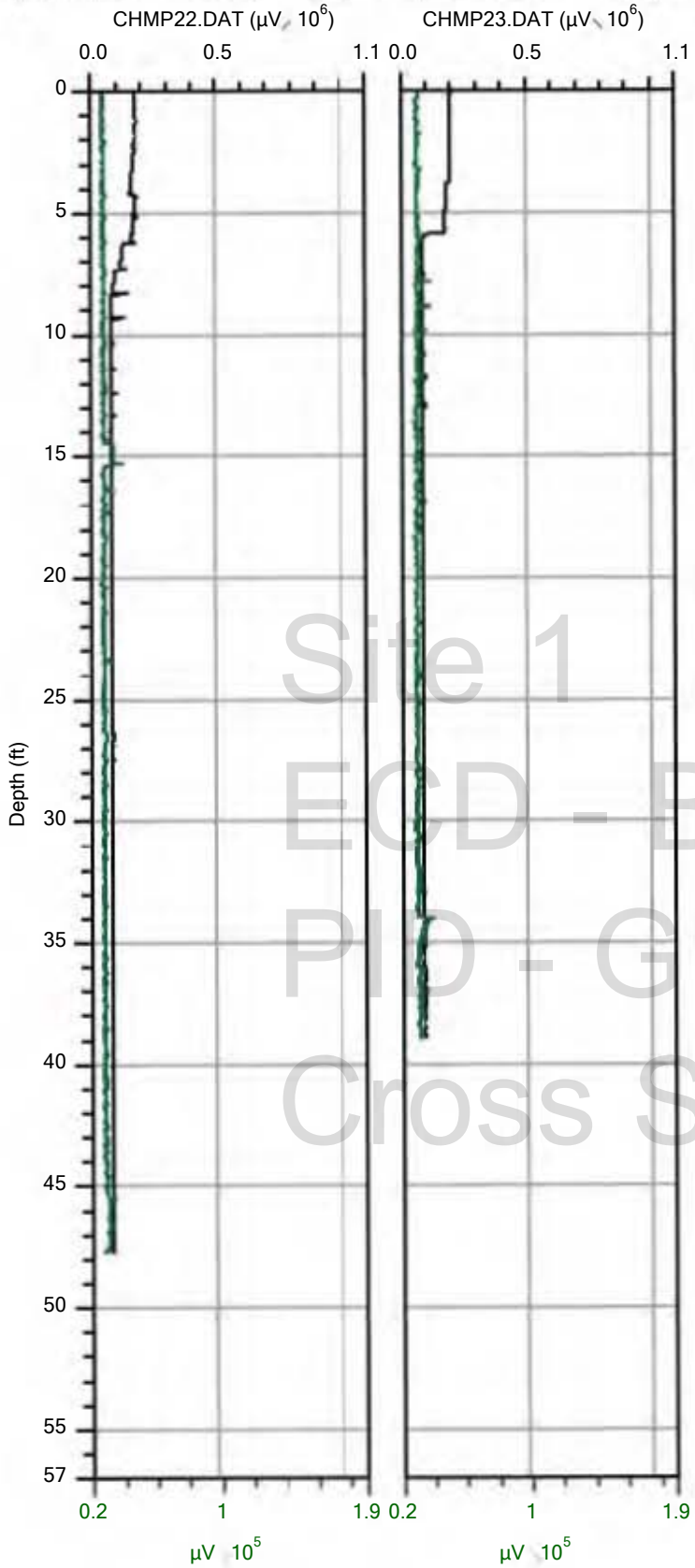
Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP18.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 56″ W

CHMP19.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP20.DAT 1/27/2009

CHMP21.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 51″ W



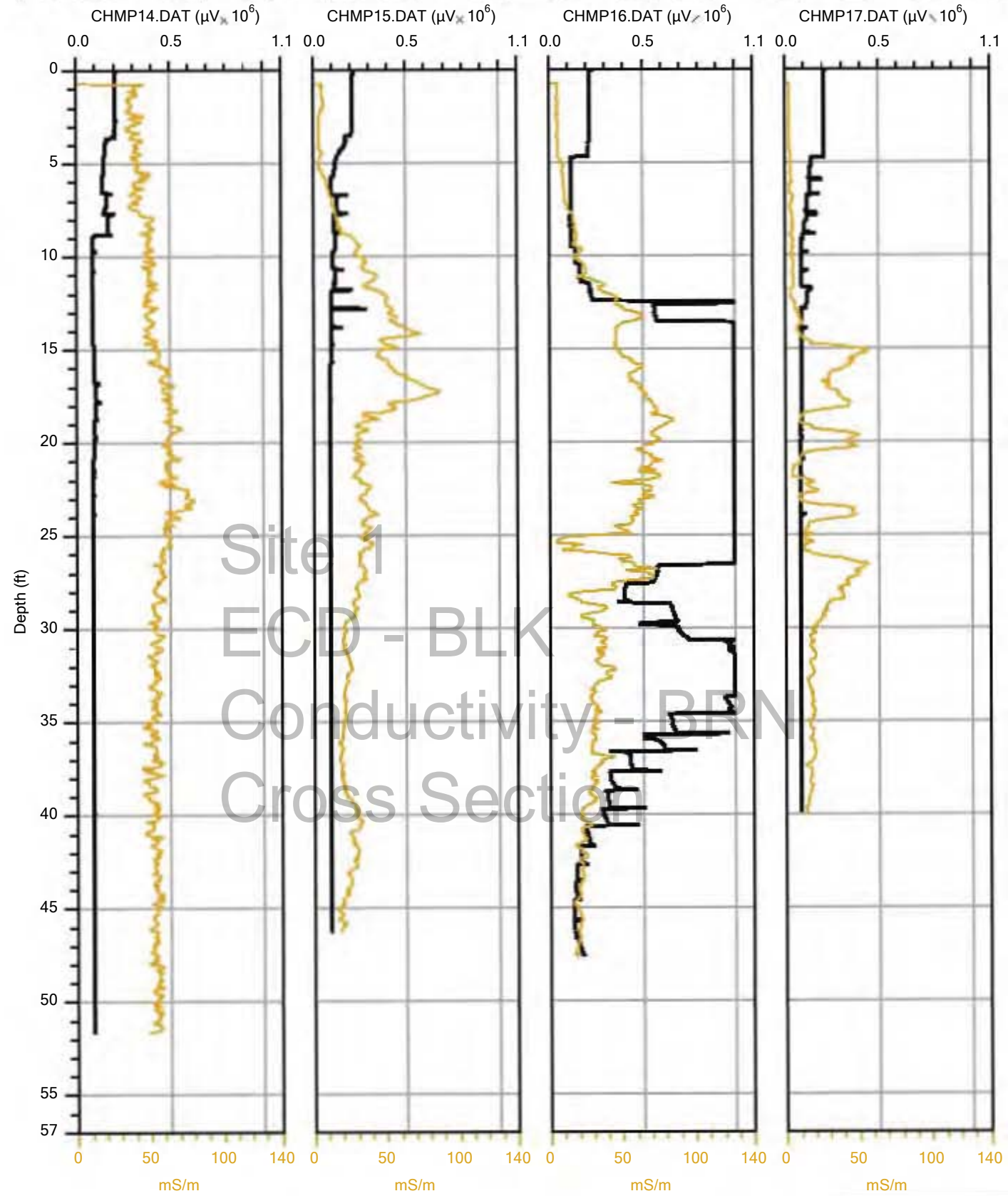
Site 1
ECD - BLK
PID - GRN
Cross Section

CH2MHILL

ECD Max / PID Max

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP22.DAT 1/28/2009
0° 0′ 0″, 76° 33′ 50″ W
CHMP23.DAT



CHMP14.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

CHMP15.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

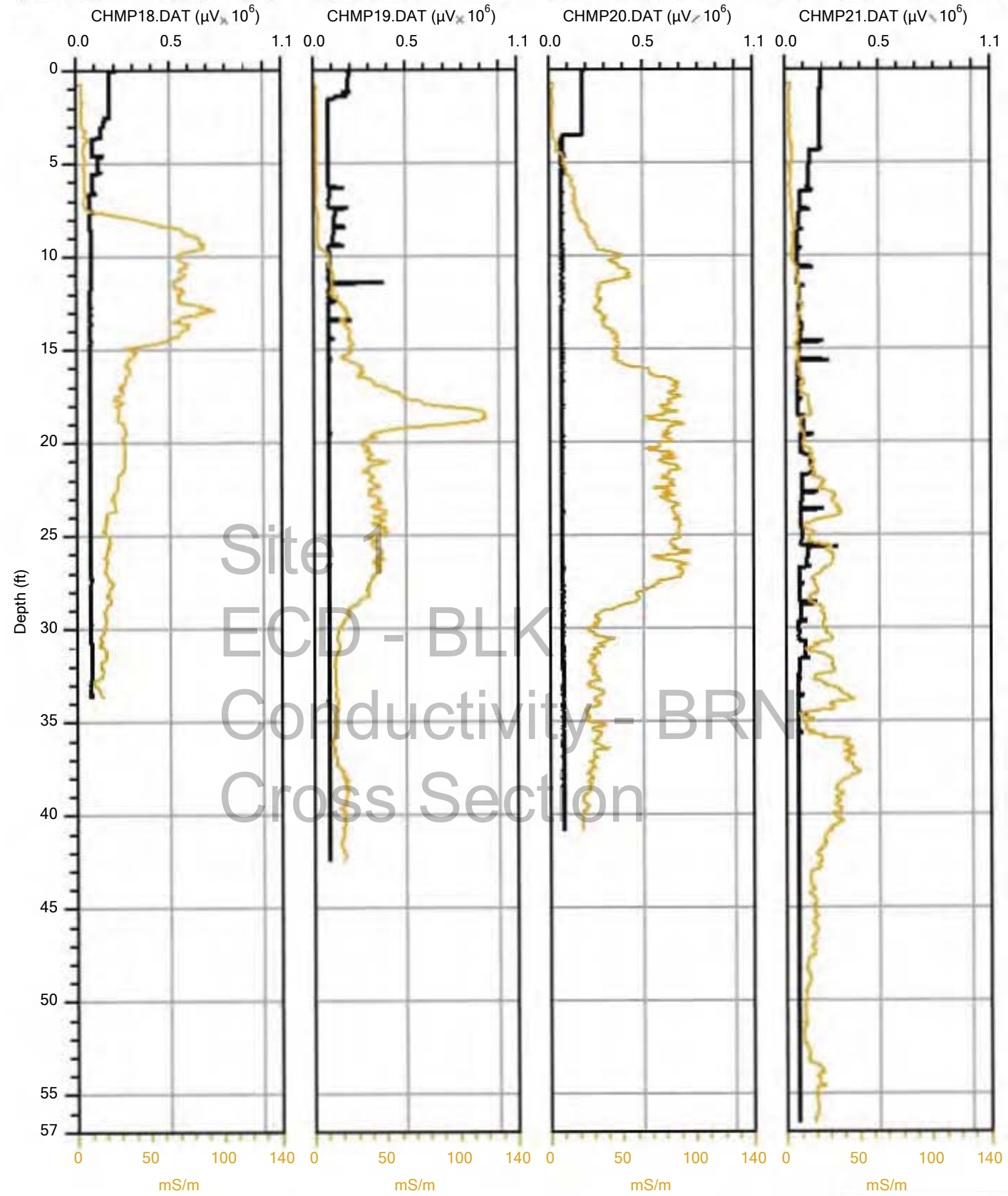
CHMP16.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 58″ W

CHMP17.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 57″ W

ECD Max / EC

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CH2MHILL



CHMP18.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 56″ W

CHMP19.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 52″ W

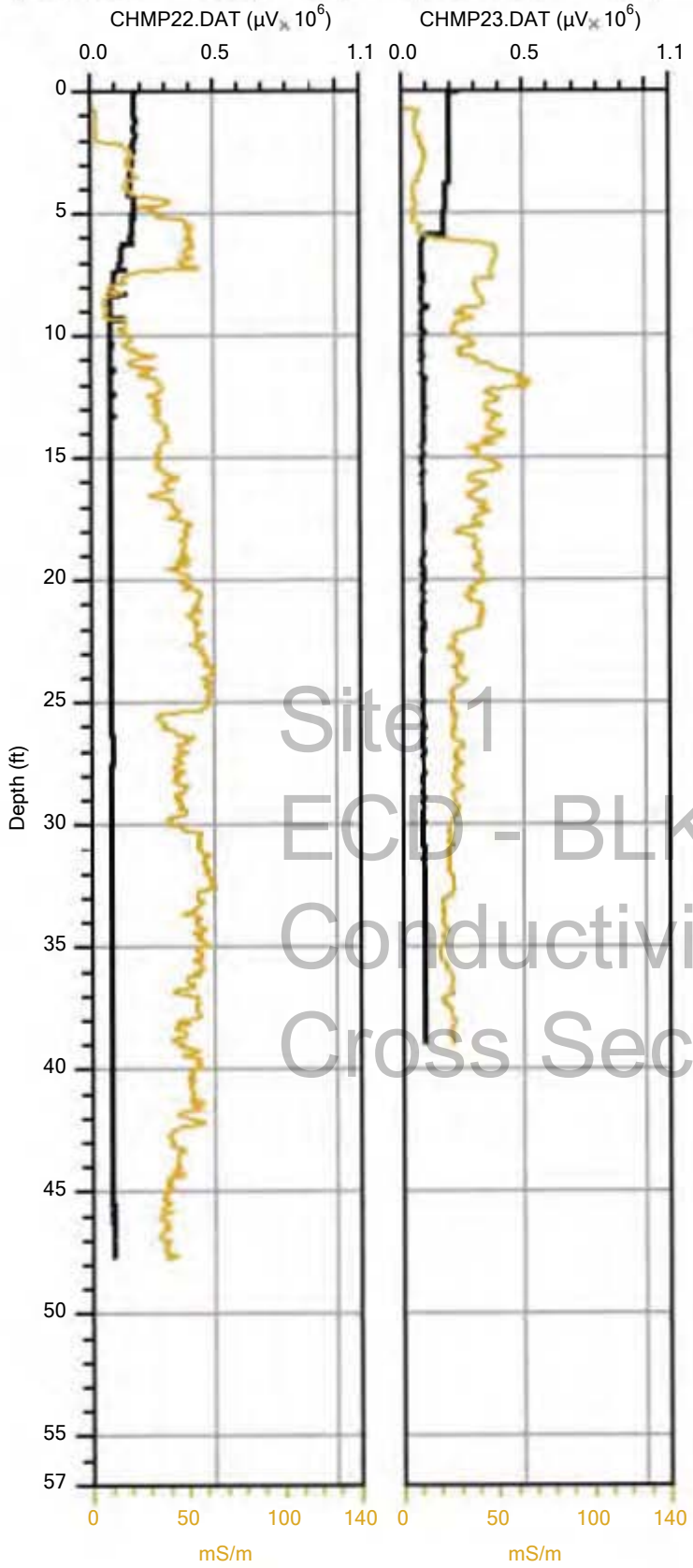
CHMP20.DAT 1/27/2009

CHMP21.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 51″ W

CH2MHILL

ECD Max / EC

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill



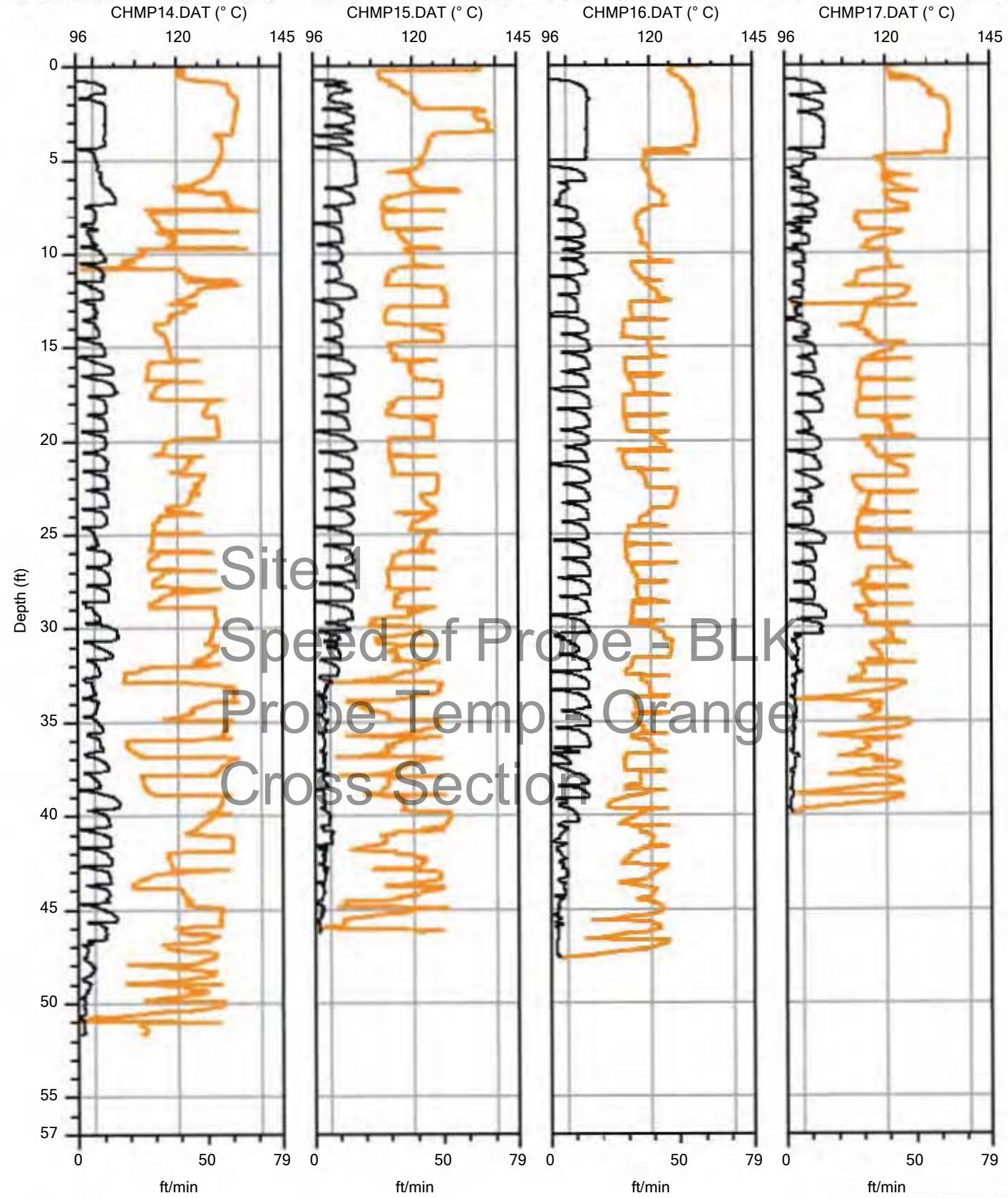
Site 1
ECD - BLK
Conductivity - BRN
Cross Section

CH2MHILL

ECD Max / EC

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP22.DAT 1/28/2009
0° 0′ 0″, 76° 33′ 50″ W
CHMP23.DAT



CHMP14.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

CHMP15.DAT 1/23/2009
0° 0′ 0″, 76° 34′ 1″ W

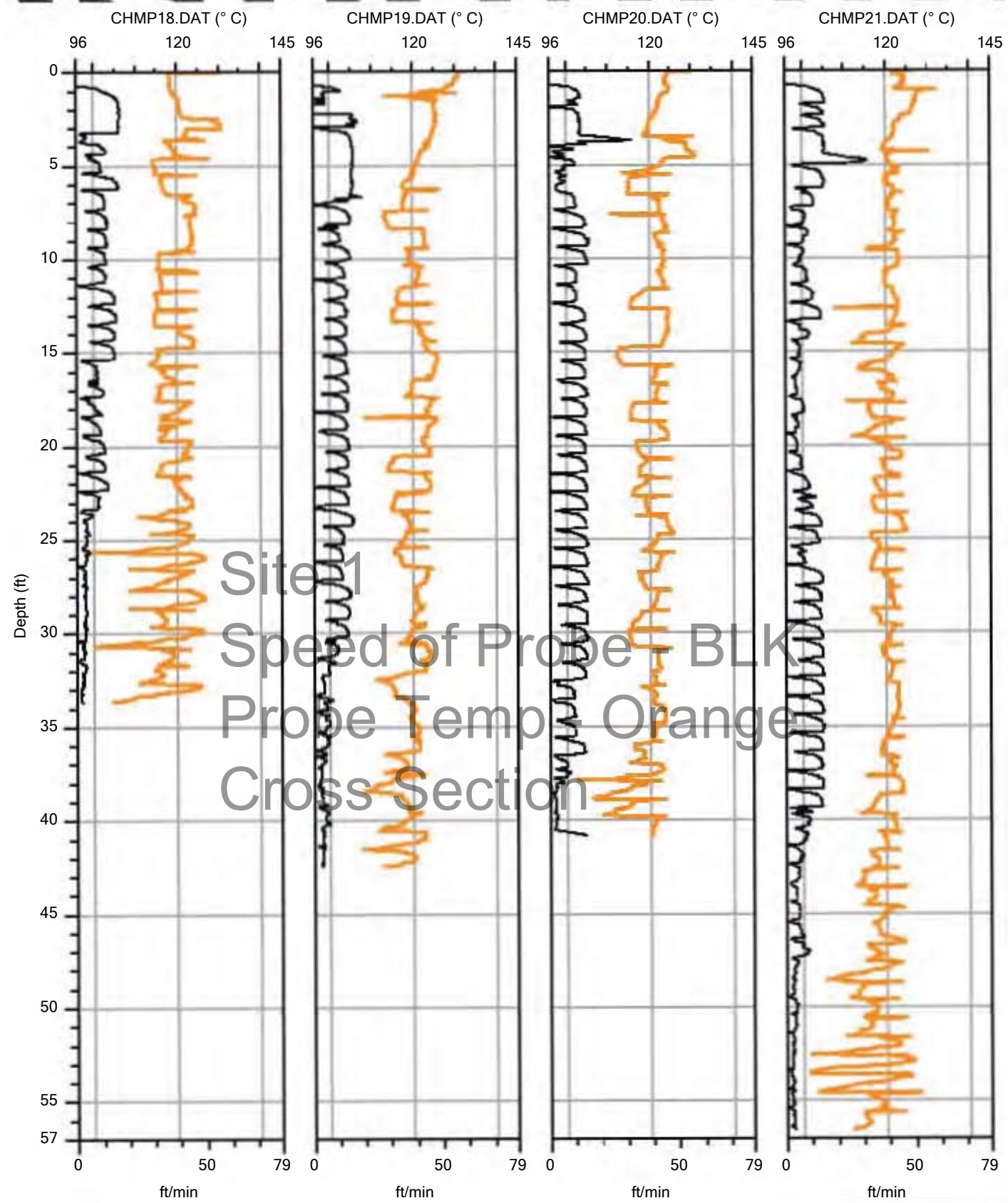
CHMP16.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 58″ W

CHMP17.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 57″ W

Temp. Max / ROP

CH2MHILL

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill



CHMP18.DAT 1/26/2009
0° 0′ 0″, 76° 33′ 56″ W

CHMP19.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 52″ W

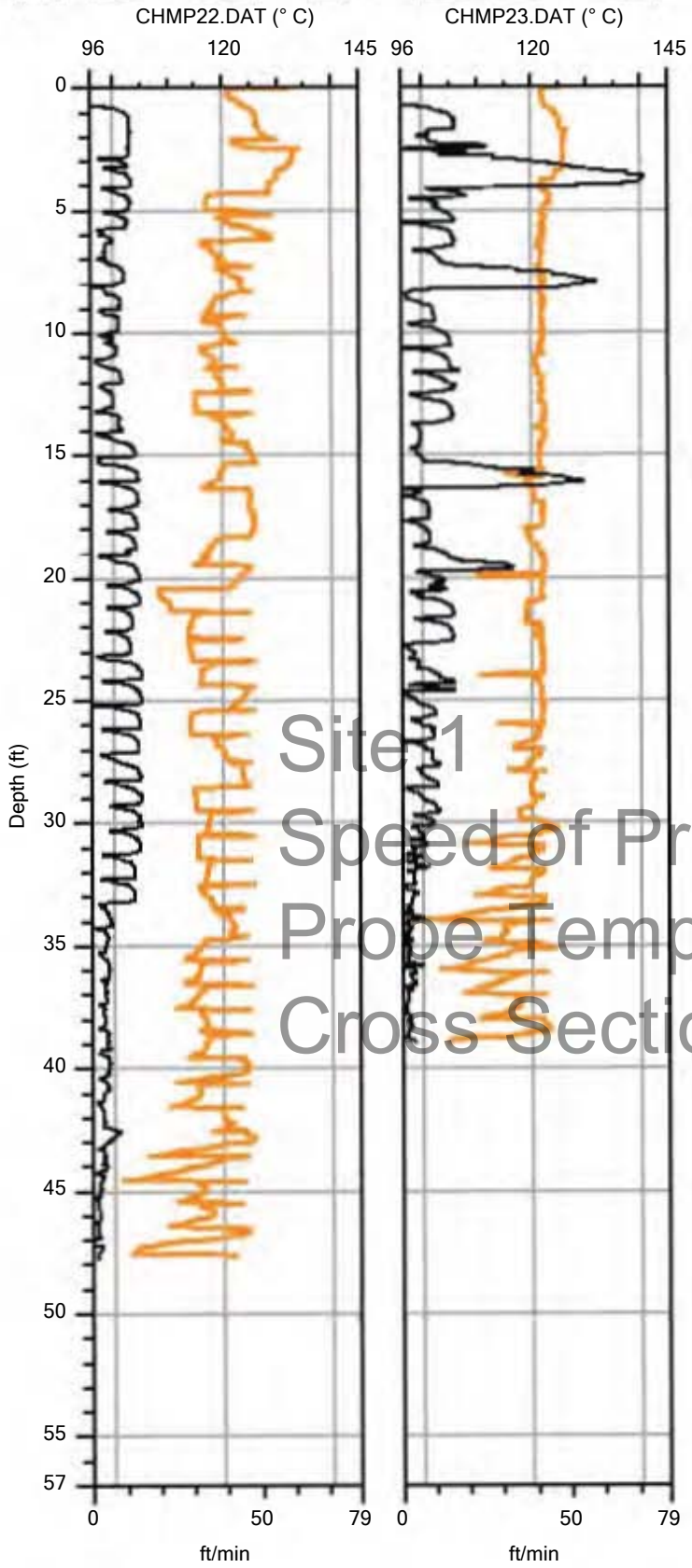
CHMP20.DAT 1/27/2009

CHMP21.DAT 1/27/2009
0° 0′ 0″, 76° 33′ 51″ W

Temp. Max / ROP

Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CH2MHILL

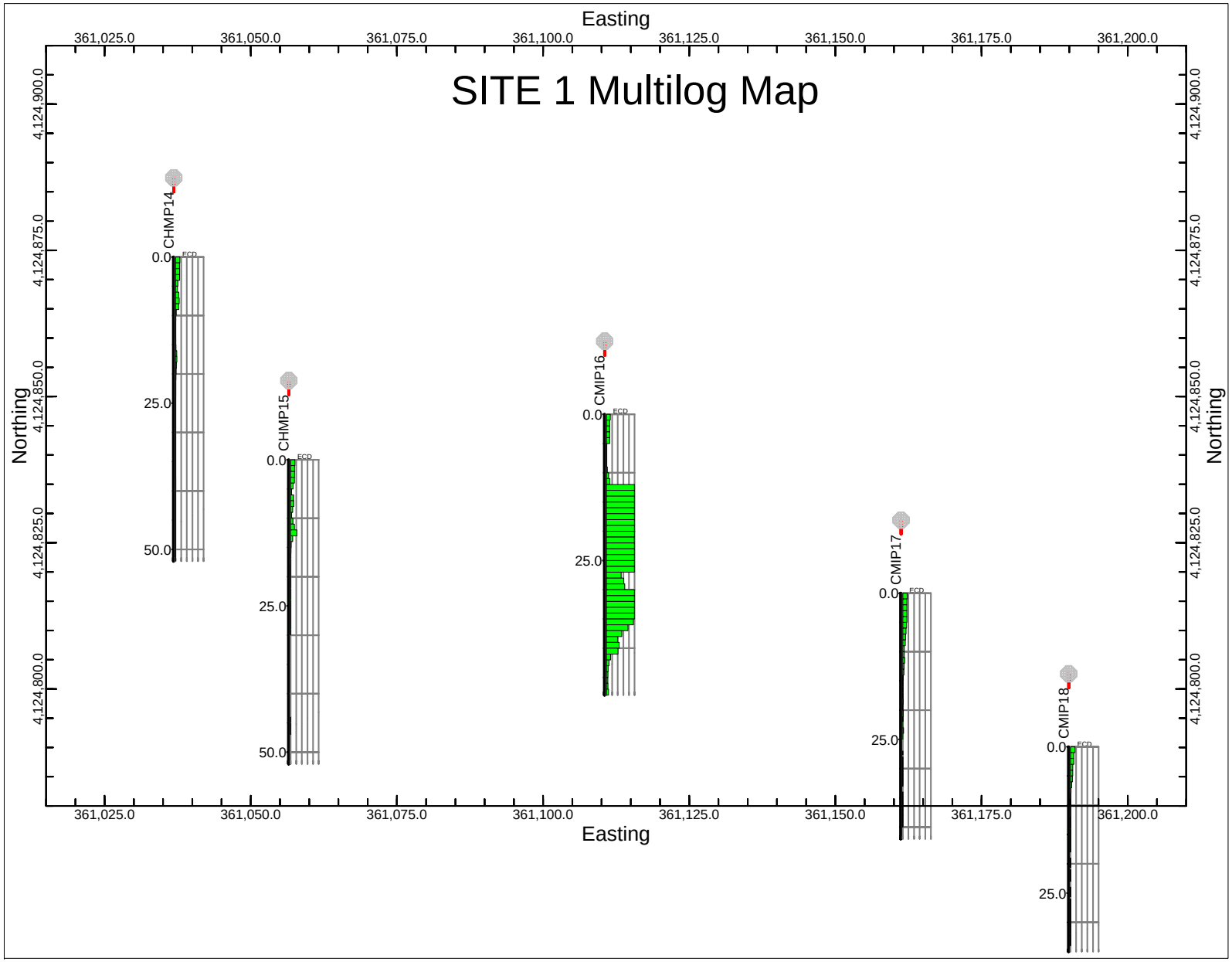


Site 1
Speed of Probe - BLK
Probe Temp - Orange
Cross Section

Temp. Max / ROP

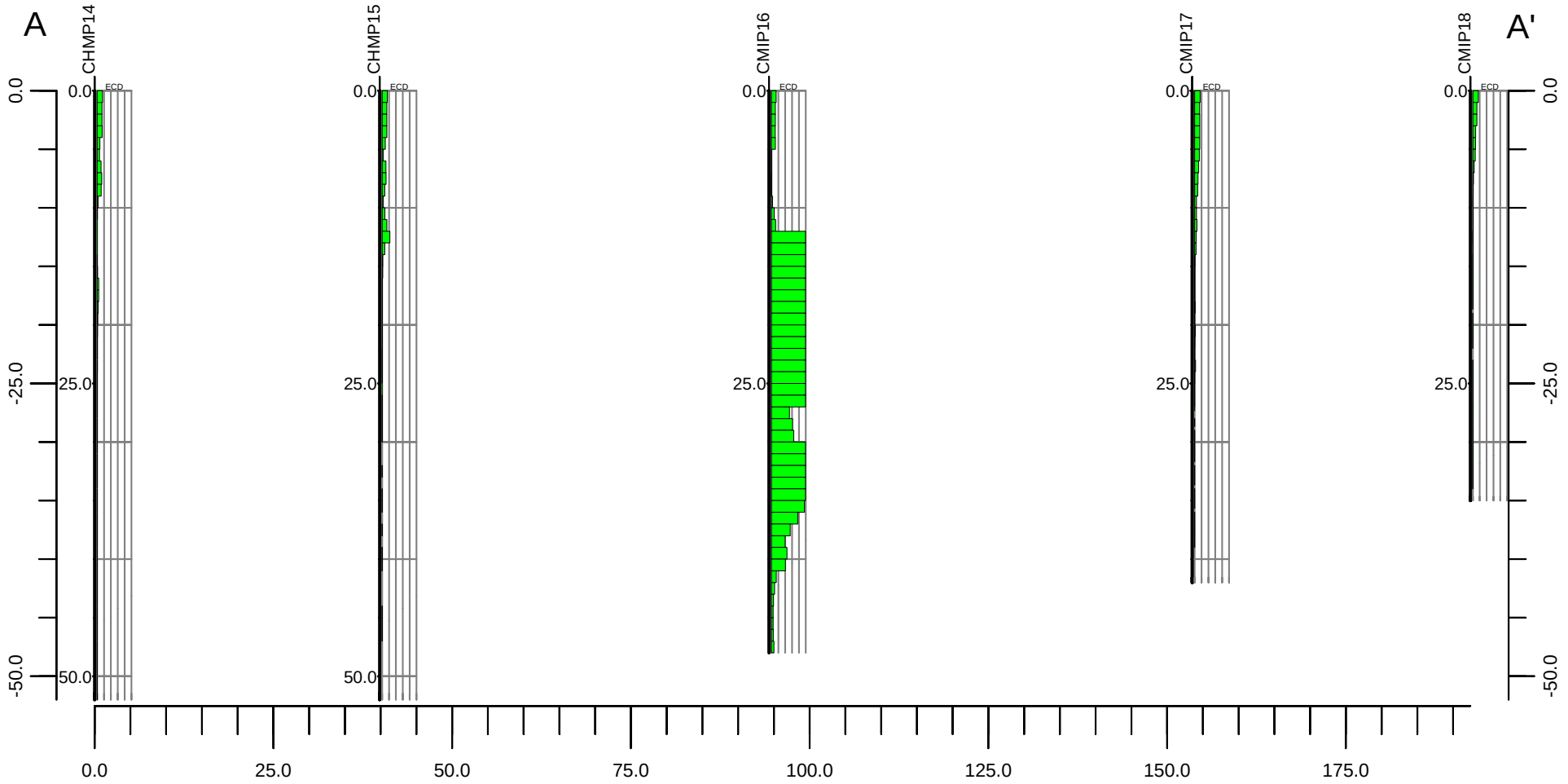
Company: ZEBRA Environmental	Operator: John Diamond / 14934
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP22.DAT 1/28/2009
0° 0′ 0″, 76° 33′ 50″ W
CHMP23.DAT

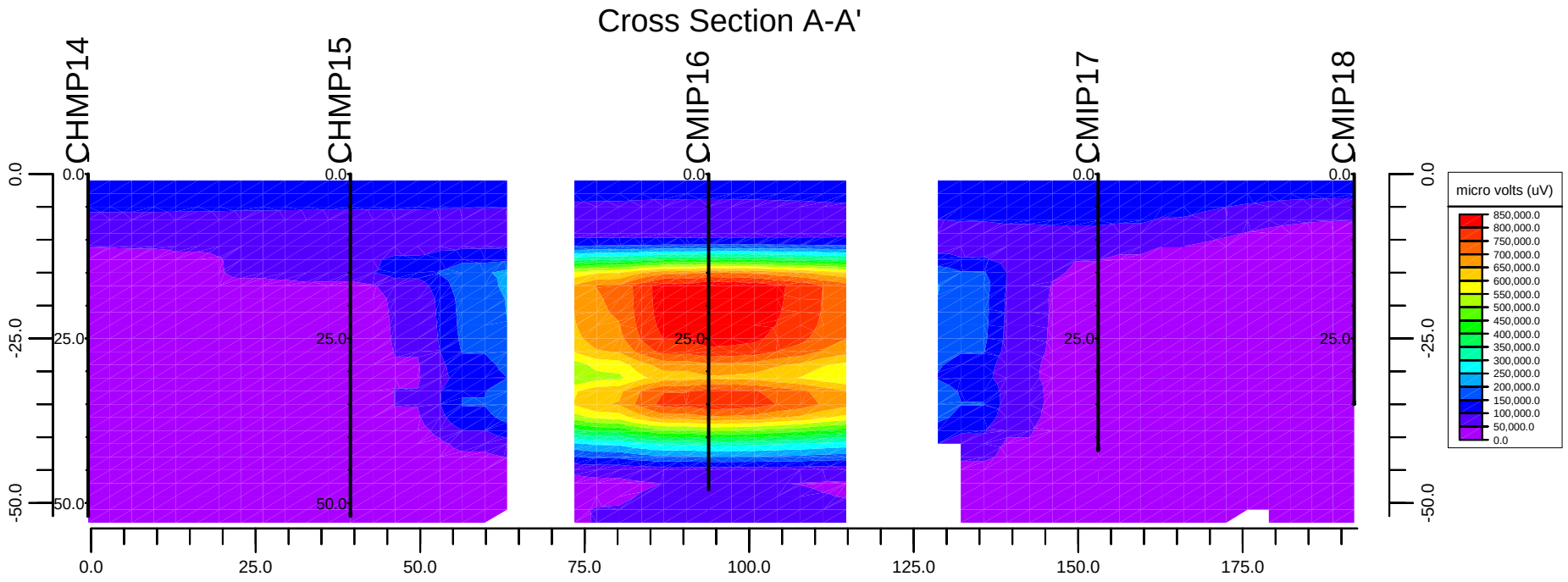

SITE 1 Multilog Map
Easting
361,025.0
361,050.0
361,075.0
361,100.0
361,125.0
361,150.0
361,175.0
361,200.0
Northing
4,124,900.0
4,124,875.0
4,124,850.0
4,124,825.0
4,124,800.0
CHMP14
CHMP15
CMIP16
CMIP17
CMIP18
ECD
0.0
25.0
50.0

SITE 1

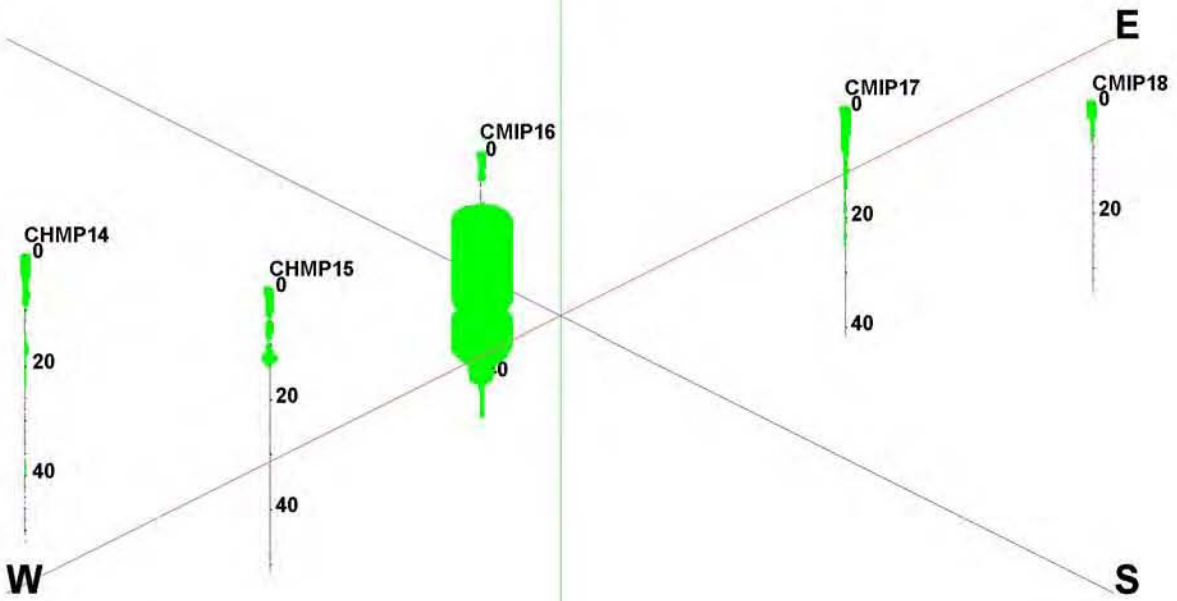
Cross Section A-A'

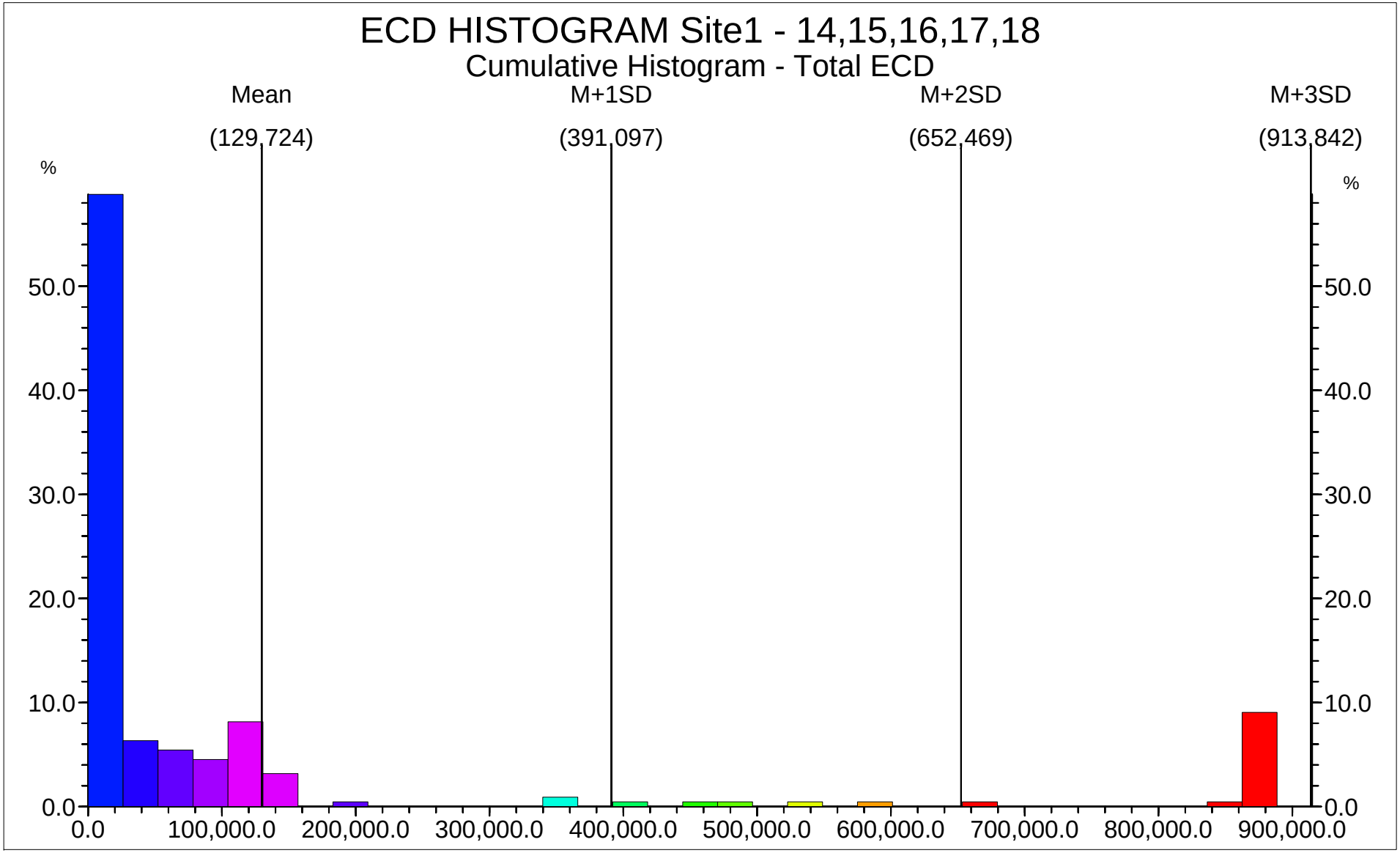


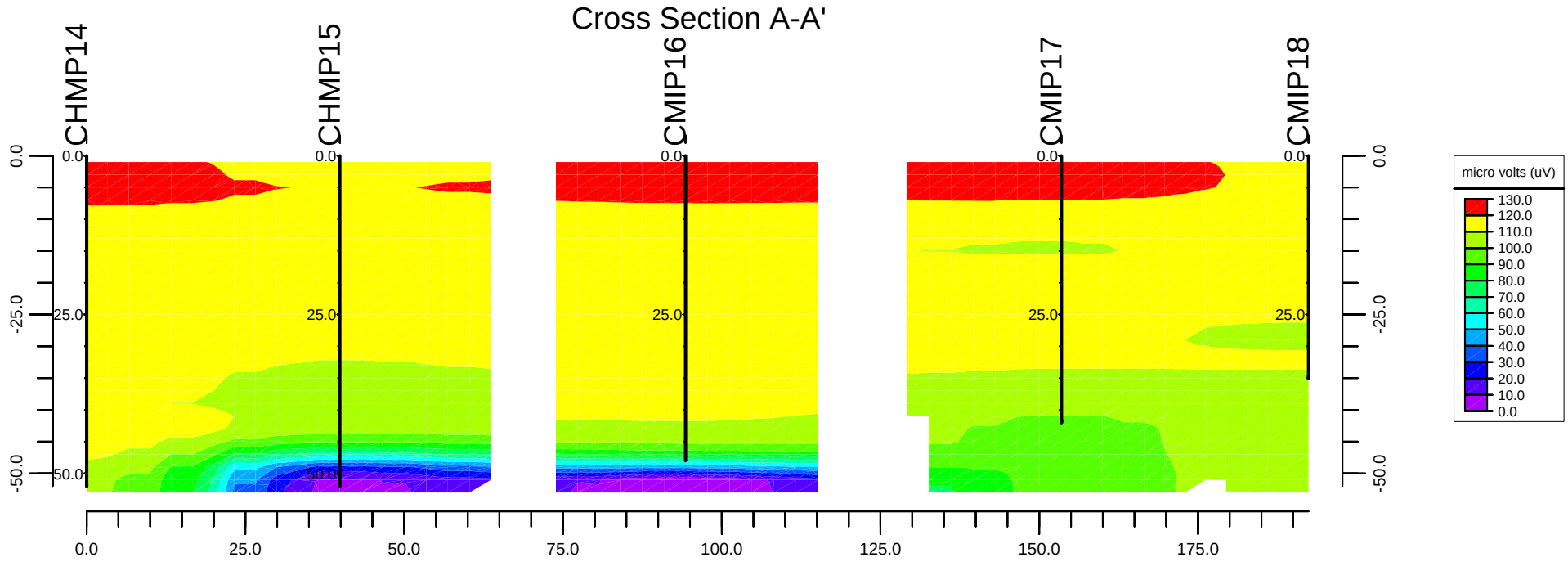
SITE 1


Cross Section A-A'
CHMP14
CHMP15
CMIP16
CMIP17
CMIP18
0.0
25.0
50.0
-25.0
-50.0
0.0
25.0
50.0
75.0
100.0
125.0
150.0
175.0
micro volts (uV)
850,000.0
800,000.0
750,000.0
700,000.0
650,000.0
600,000.0
550,000.0
500,000.0
450,000.0
400,000.0
350,000.0
300,000.0
250,000.0
200,000.0
150,000.0
100,000.0
50,000.0
0.0

SITE 1

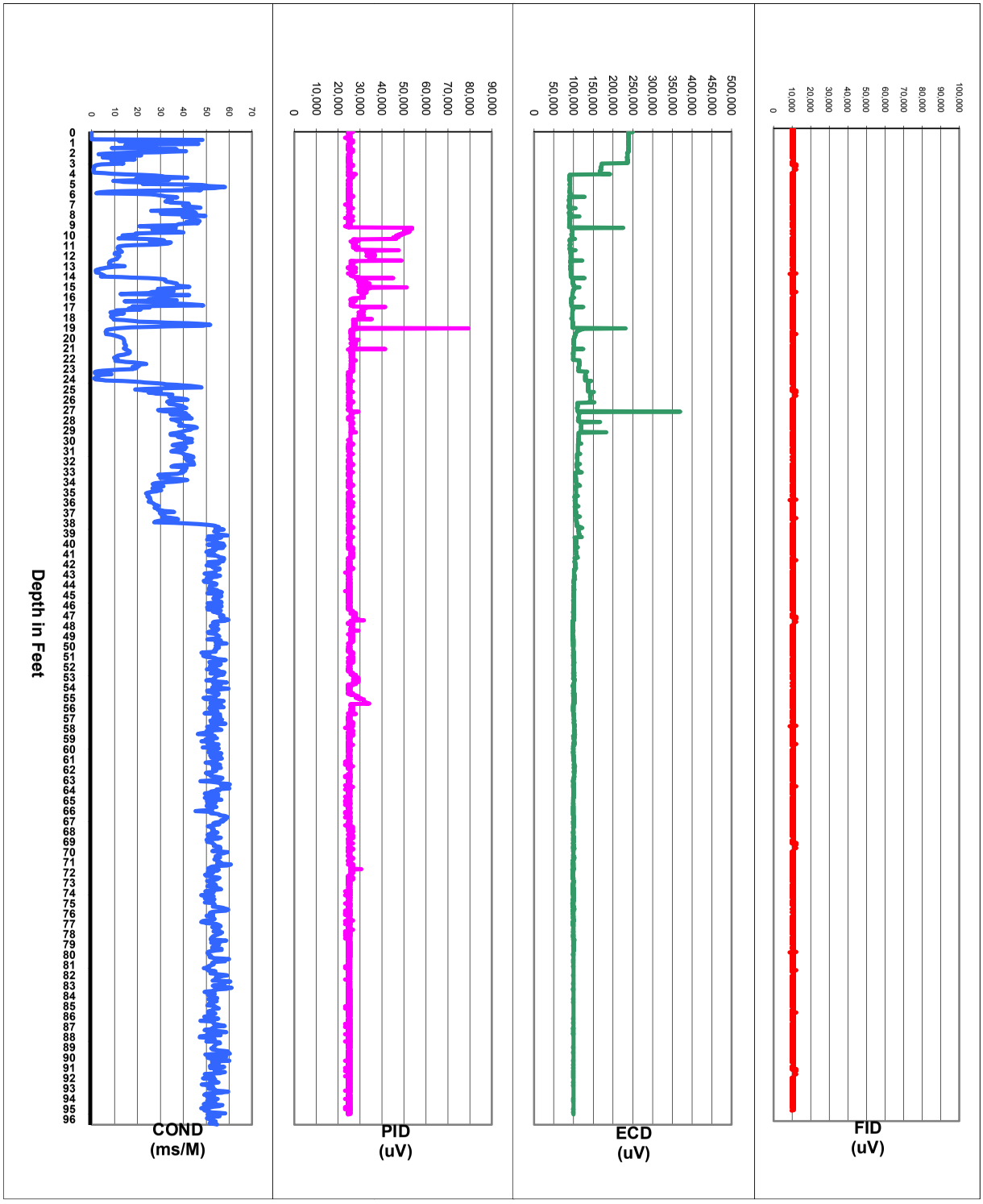

E
S
W
CHMP14
0
20
40
CHMP15
0
20
40
CMIP16
0
CMIP17
0
20
40
CMIP18
0
20


ECD HISTOGRAM Site1 - 14,15,16,17,18
Cumulative Histogram - Total ECD
Mean
(129.724)
M+1SD
(391.097)
M+2SD
(652.469)
M+3SD
(913.842)
%
50.0
40.0
30.0
20.0
10.0
0.0
0.0
100,000.0
200,000.0
300,000.0
400,000.0
500,000.0
600,000.0
700,000.0
800,000.0
900,000.0


Cross Section A-A'
CHMP14
CHMP15
CMIP16
CMIP17
CMIP18
0.0
25.0
50.0
-25.0
-50.0
0.0
25.0
50.0
75.0
100.0
125.0
150.0
175.0
micro volts (uV)
130.0
120.0
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0

Site 3

ZEBRA EC/MIP Summary Log, Point CHMP1

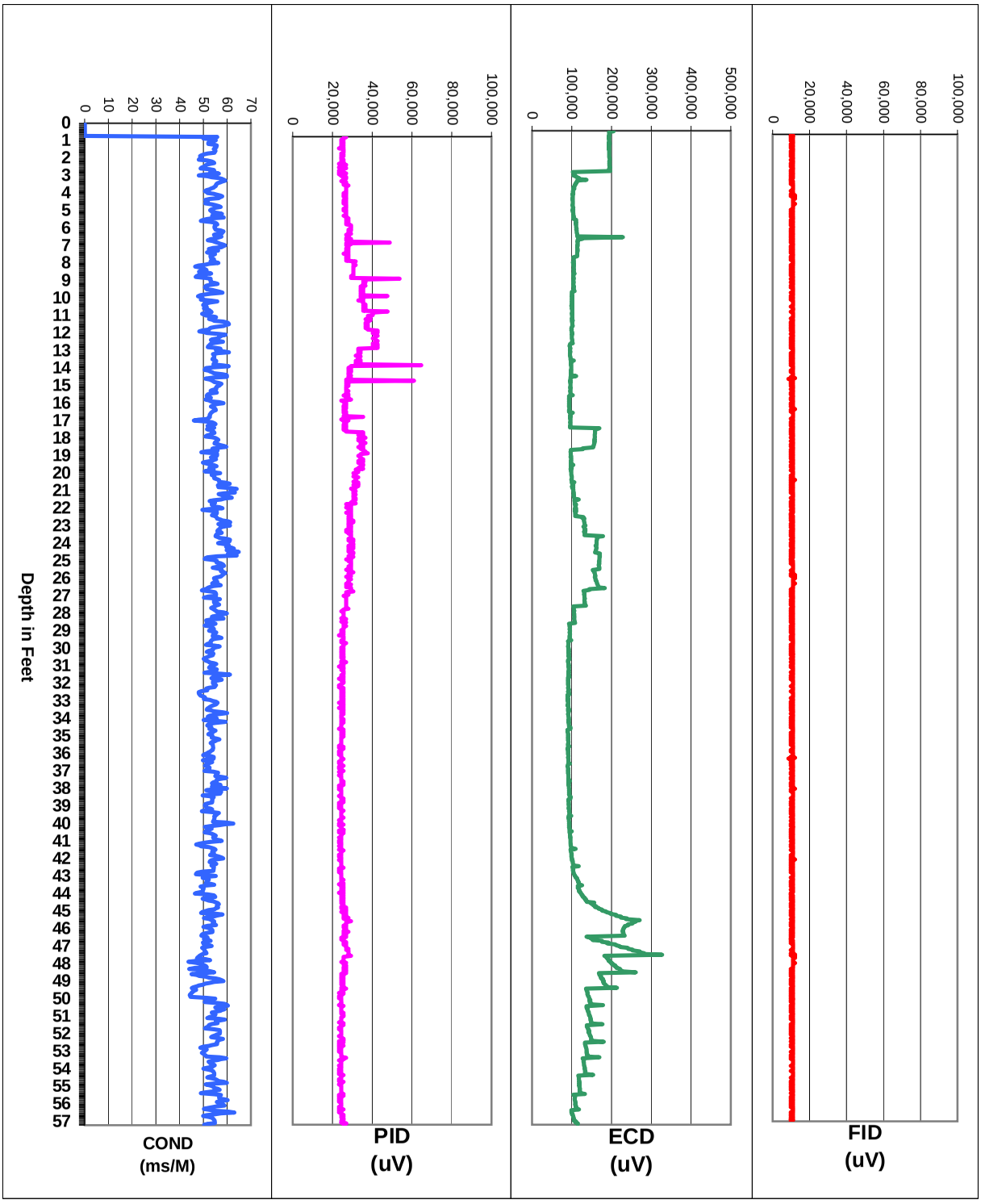


ZEBRA

for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/14/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 1 of 0

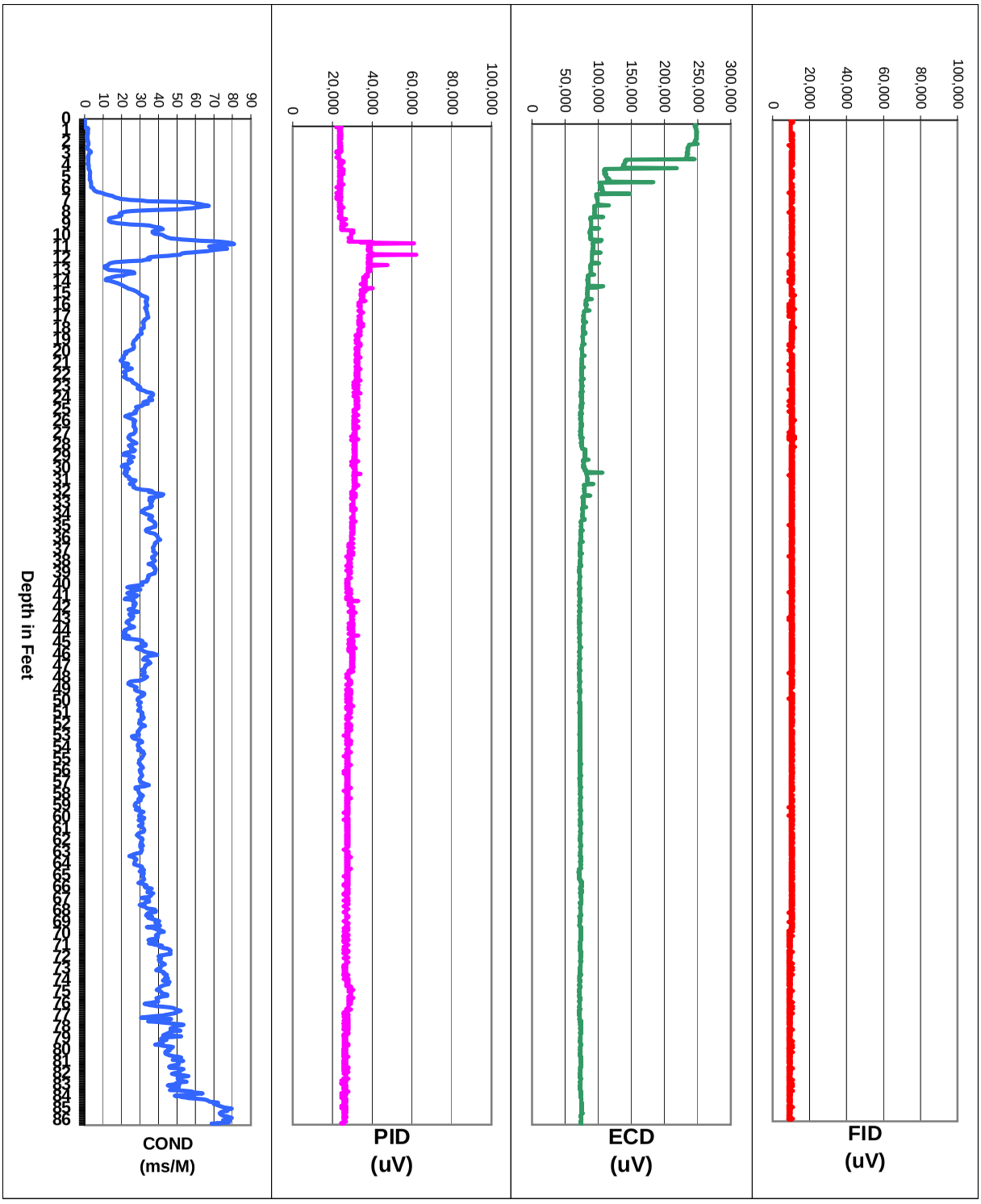
ZEBRA EC/MIP Summary Log, Point CHMP2
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/15/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 2 of 0

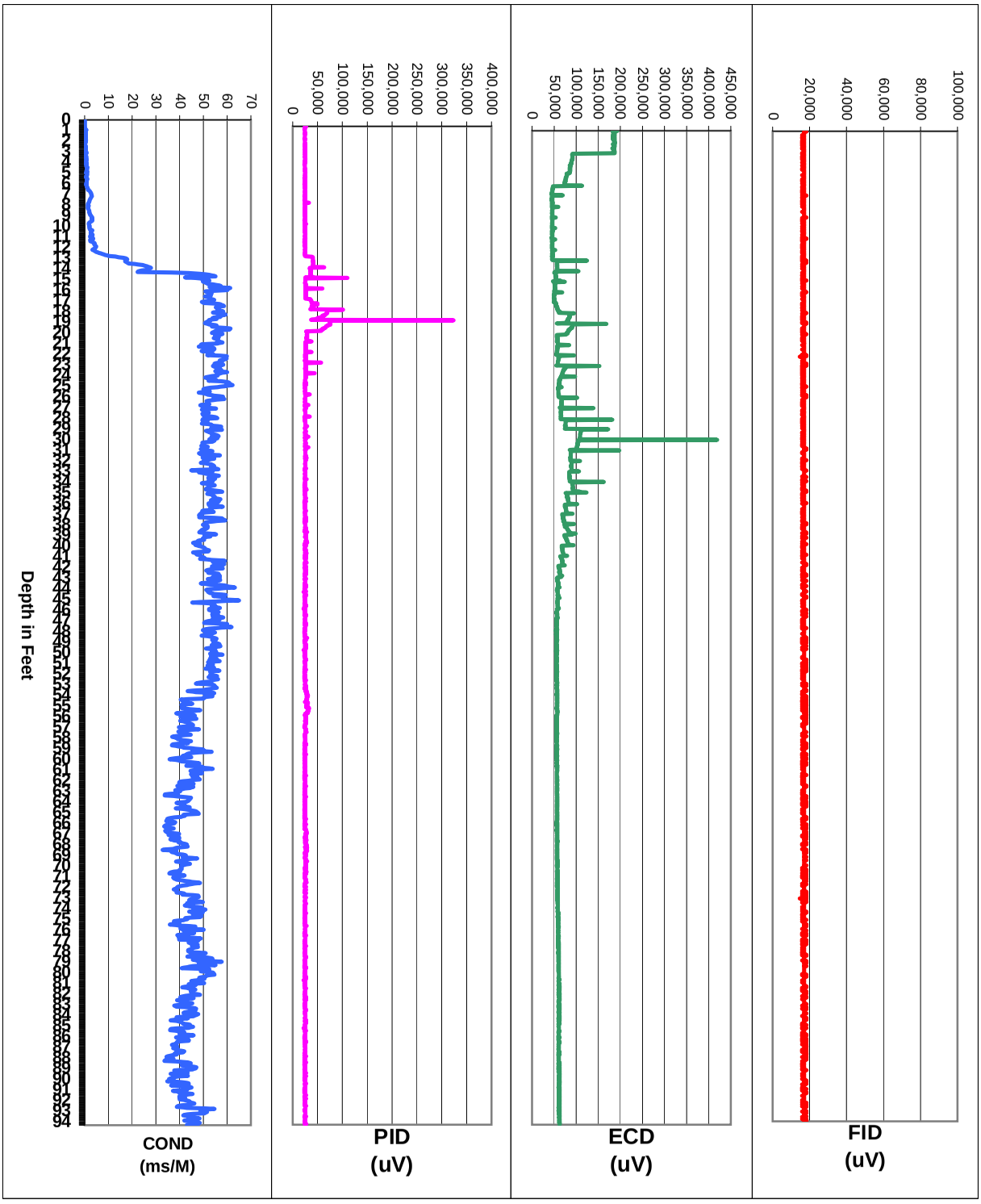
ZEBRA EC/MIP Summary Log, Point CHMP3
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/15/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 3 of 0

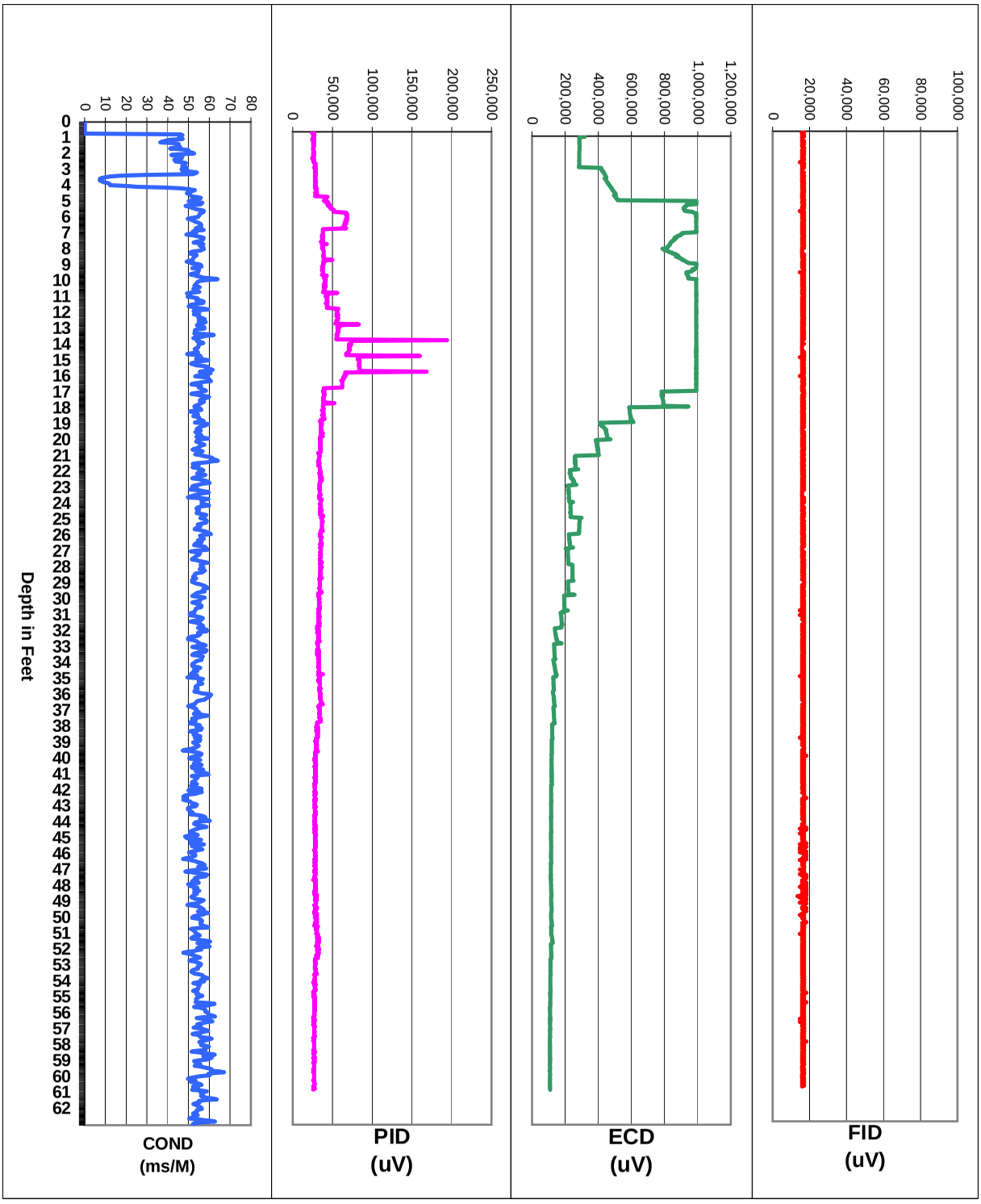
ZEBRA EC/MIP Summary Log, Point CHMP4
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/16/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 4 of 0

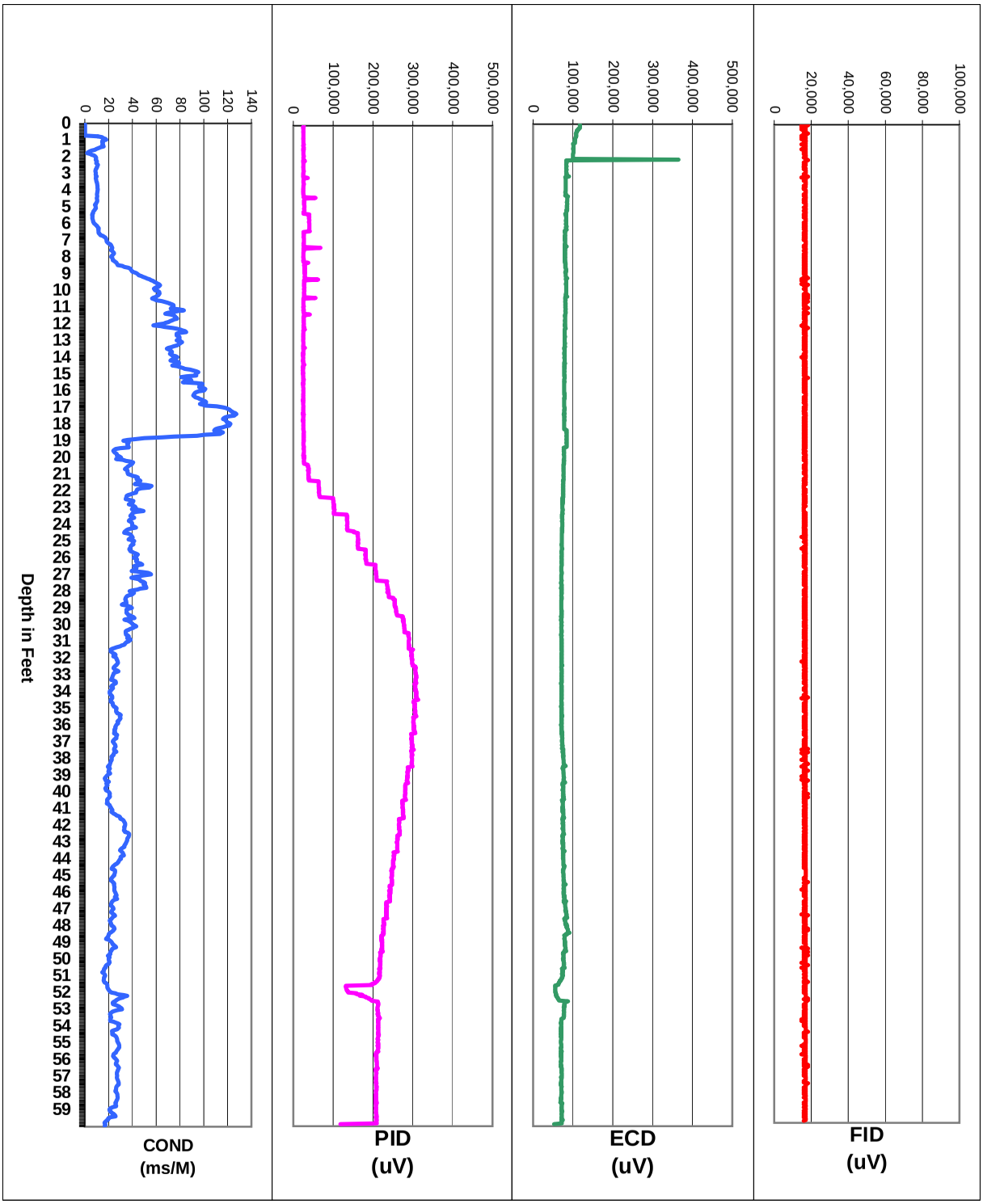
ZEBRA EC/MIP Summary Log, Point CHMP5
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/20/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 5 of 0

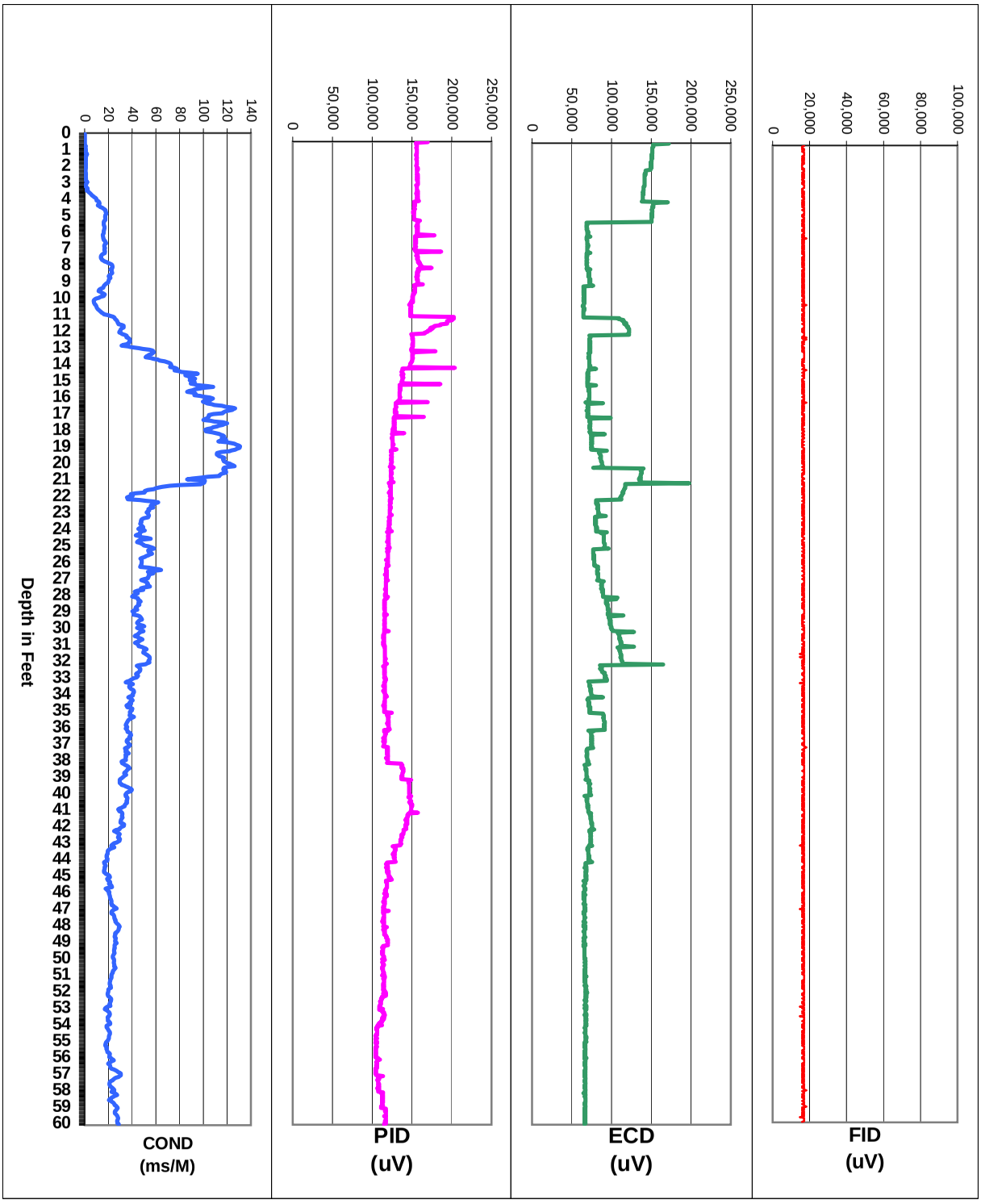
ZEBRA EC/MIP Summary Log, Point CHMP6
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/20/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 6 of 0

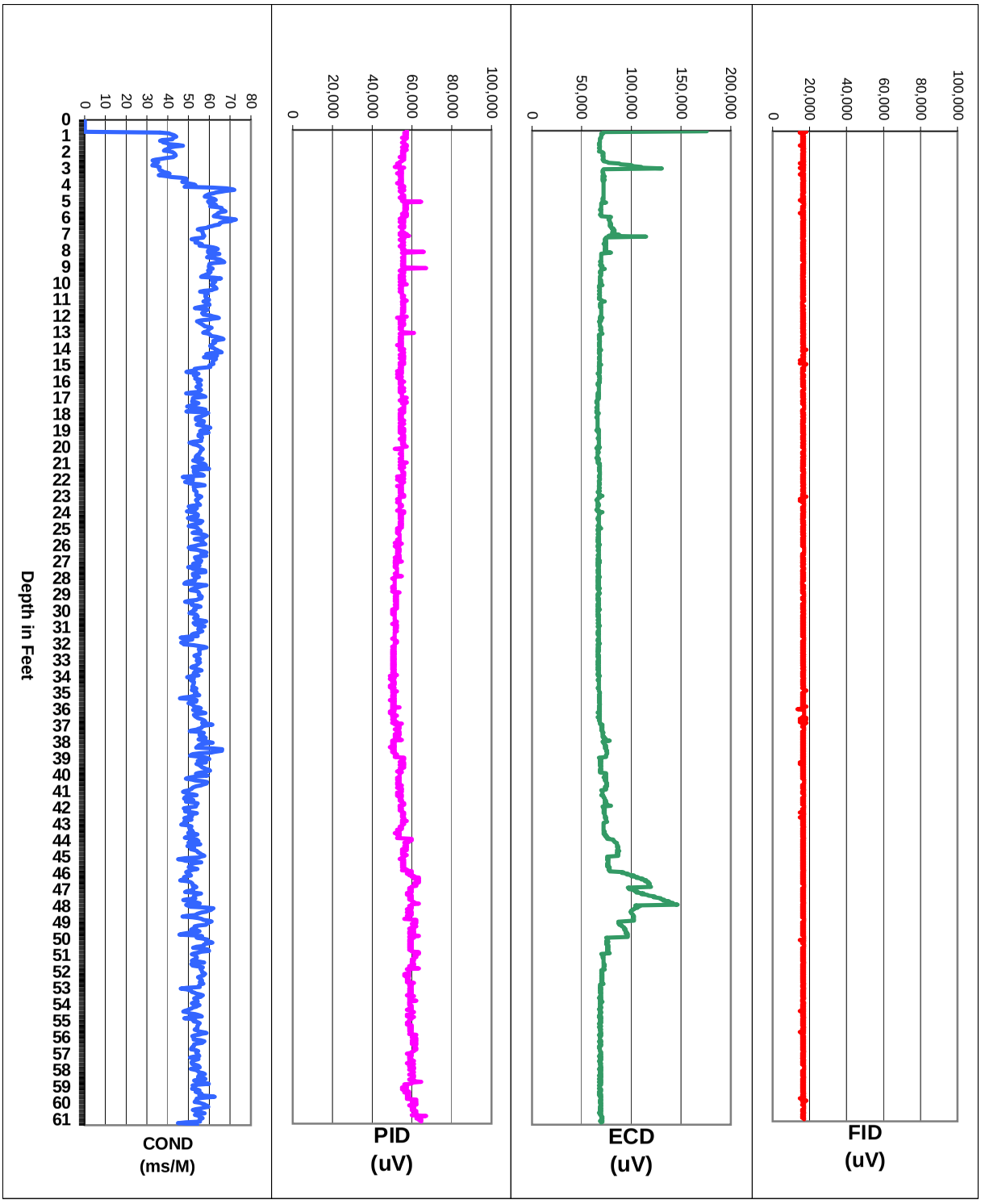
ZEBRA EC/MIP Summary Log, Point CHMP7
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/20/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 7 of 0

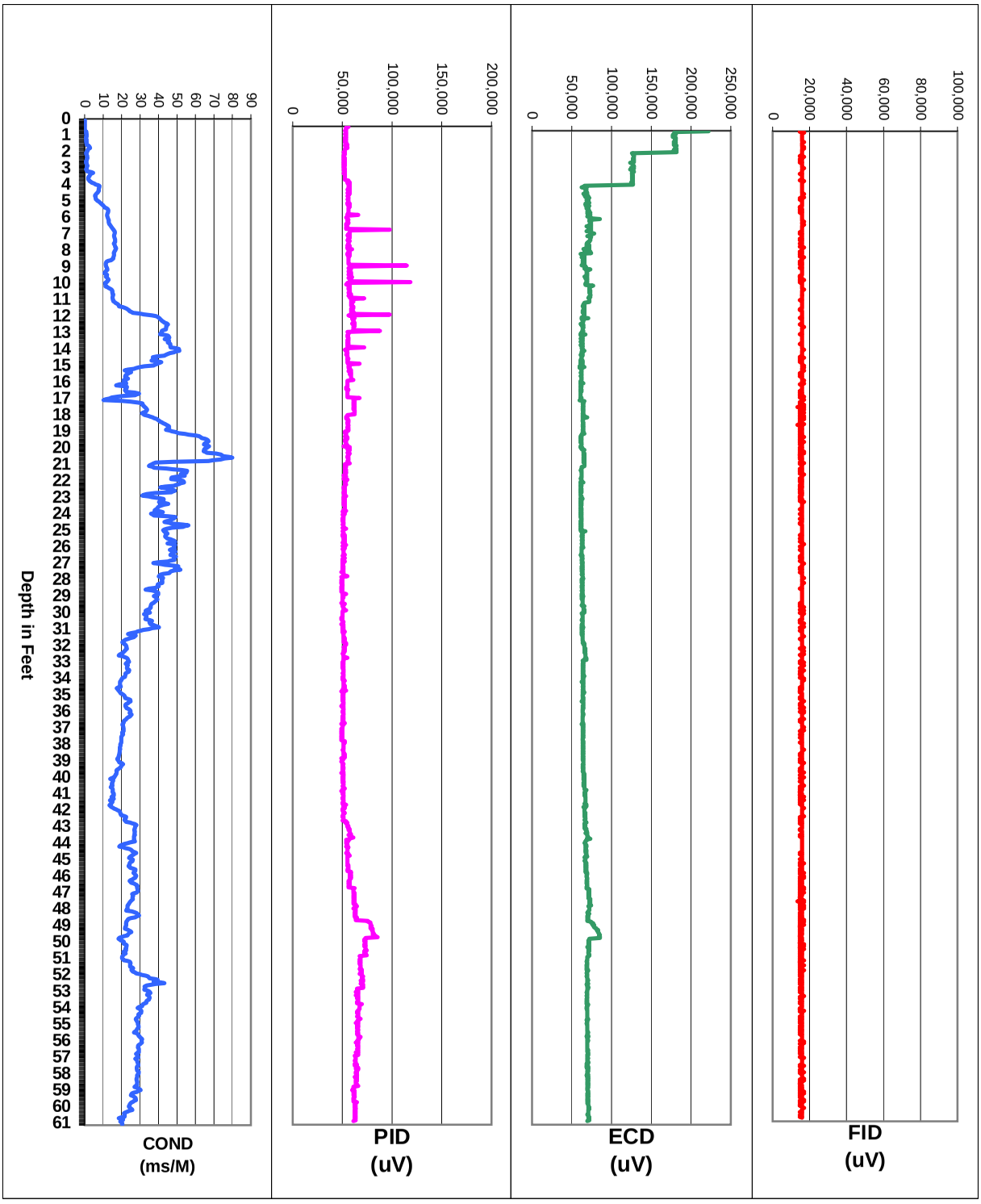
ZEBRA EC/MIP Summary Log, Point CHMP8
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/21/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 8 of 0

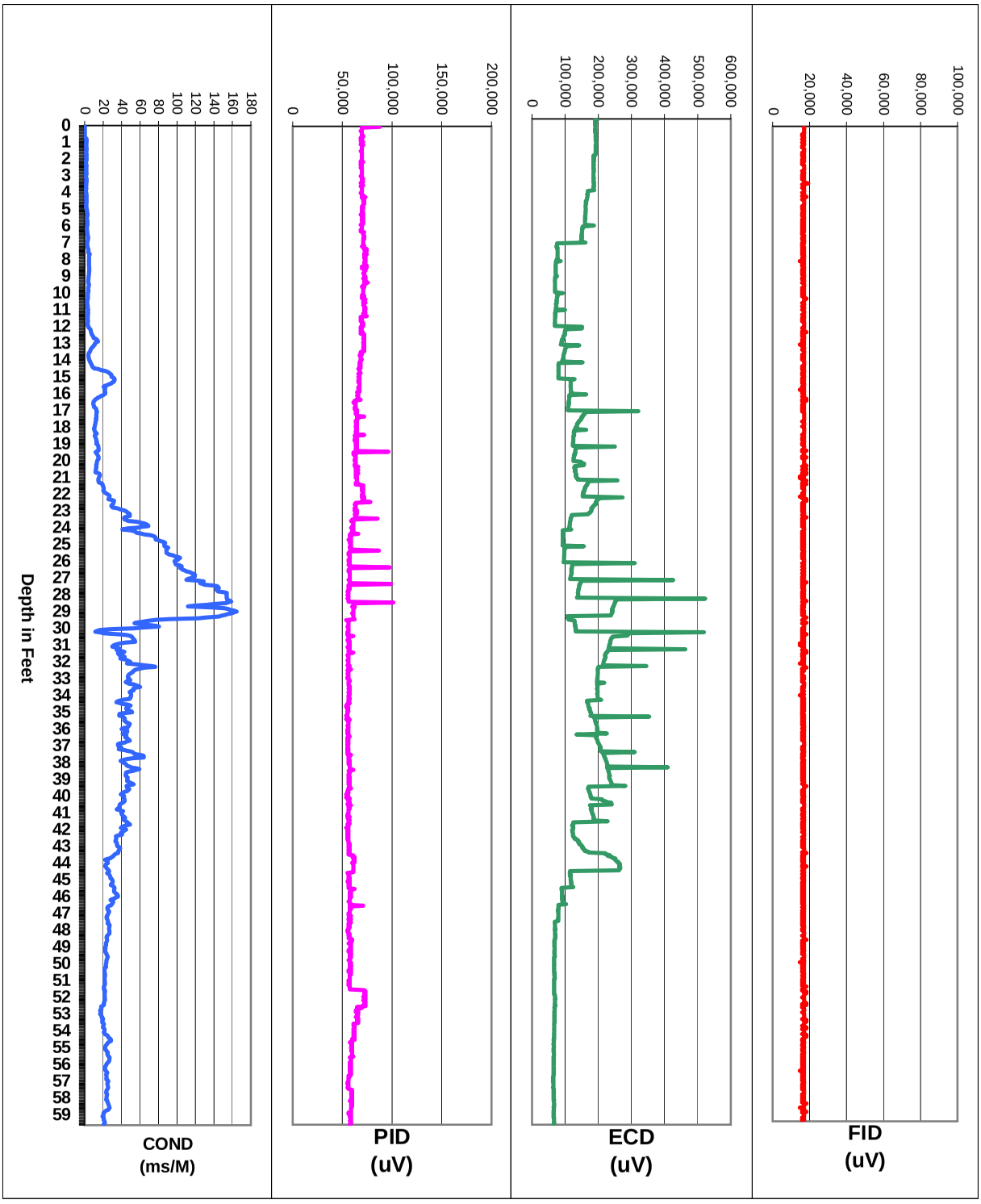
ZEBRA EC/MIP Summary Log, Point CHMP9
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/21/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 9 of 0

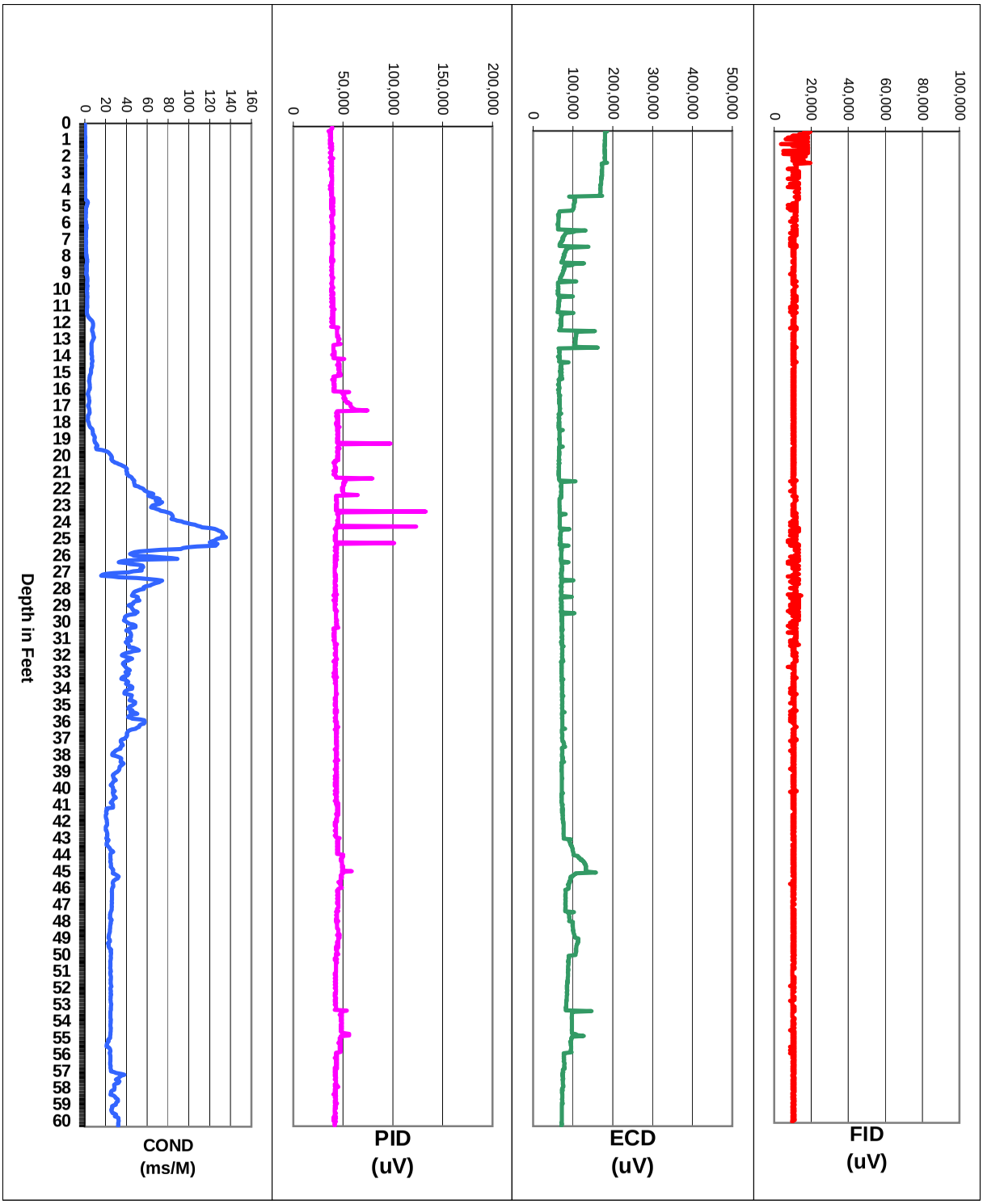
ZEBRA EC/MIP Summary Log, Point CHMP10
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/21/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 10 of 0

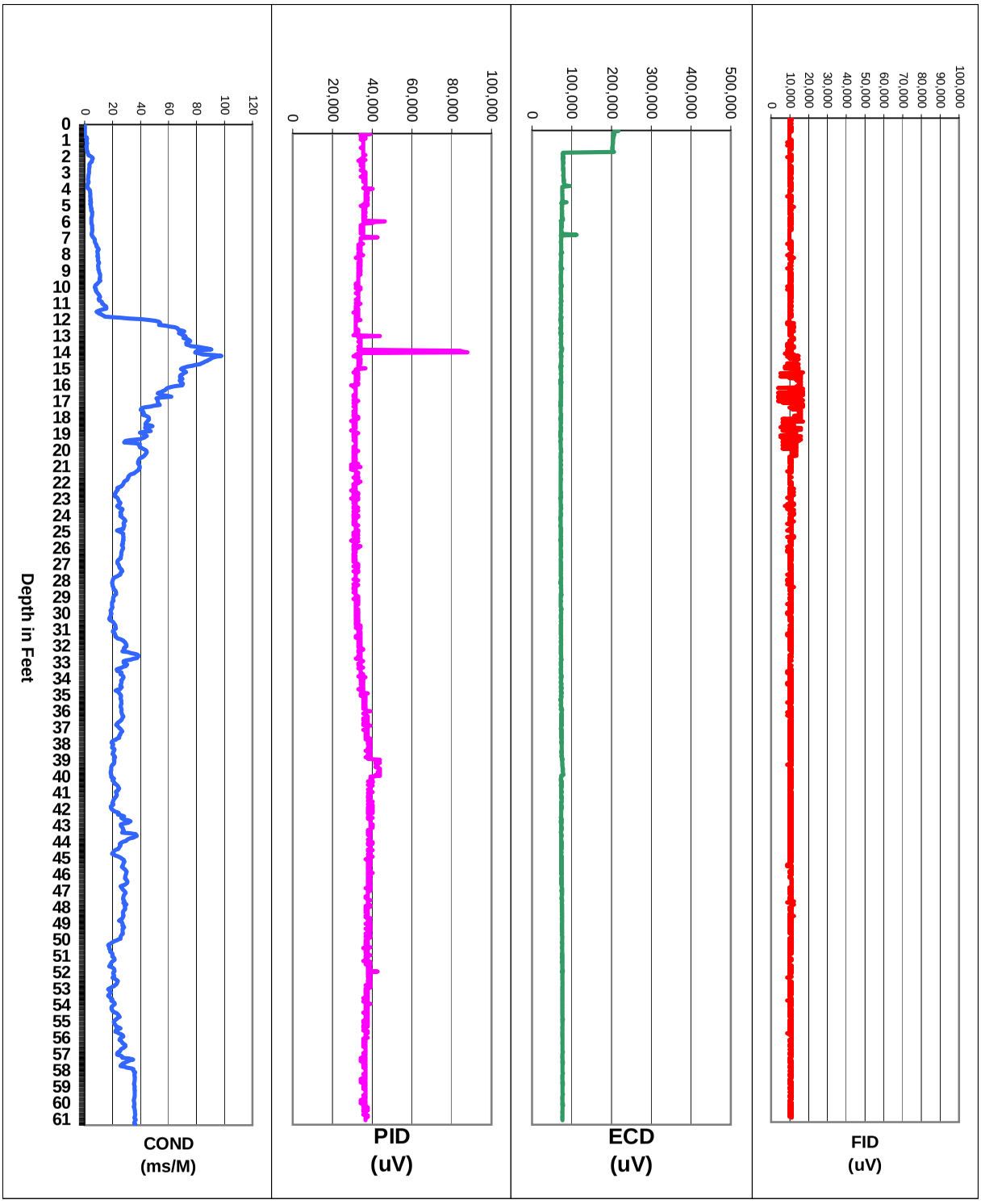
ZEBRA EC/MIP Summary Log, Point CHMP11
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/22/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 11 of 0

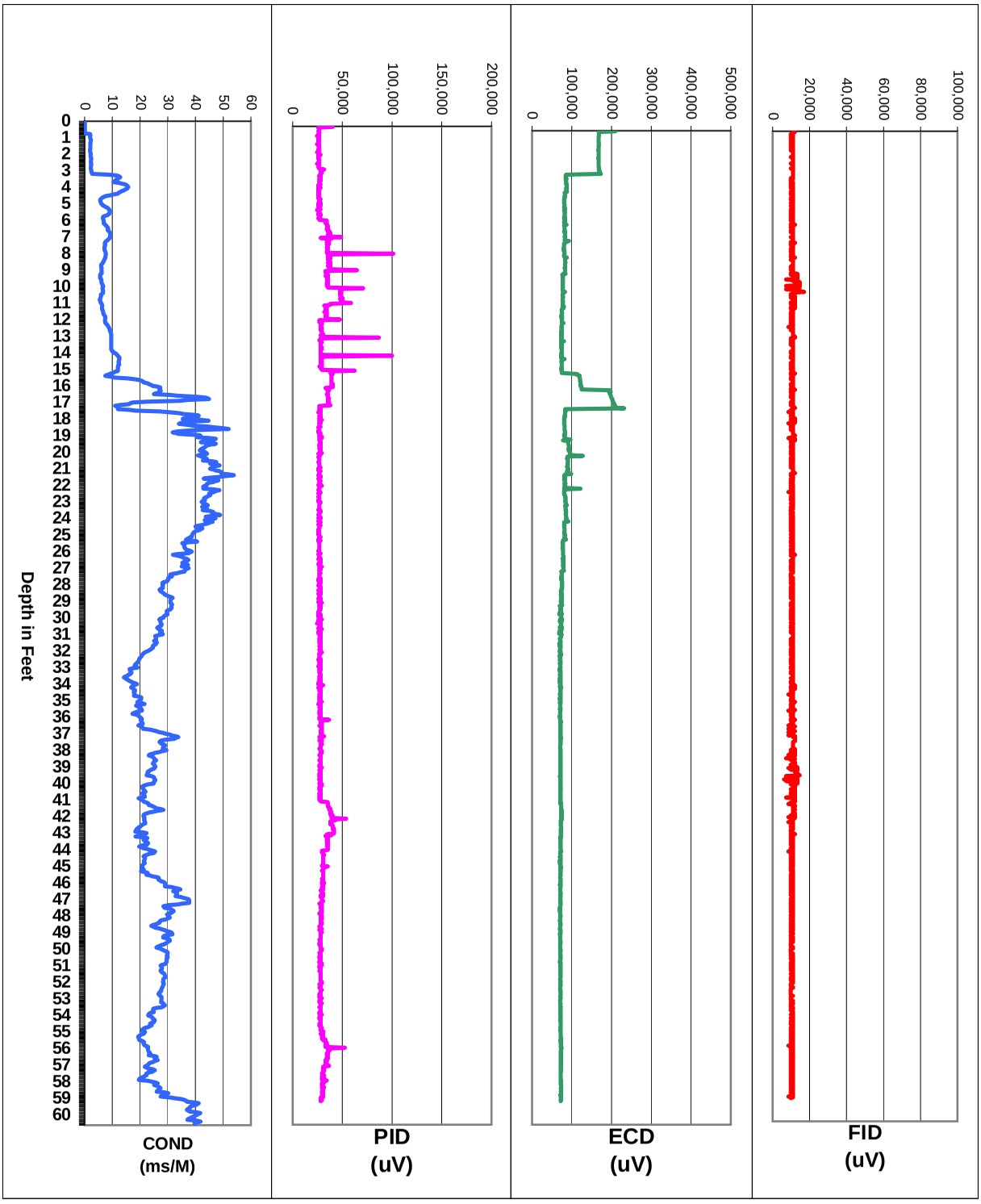
ZEBRA EC/MIP Summary Log, Point CHMP12
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

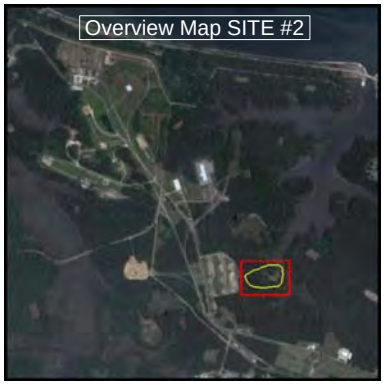
Date: 1/22/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 12 of 0

ZEBRA EC/MIP Summary Log, Point CHMP13
Yorktown, VA



for: CH2M Hill
by: Zebra Environmental
30 No. Prospect Avenue
Lynbrook, NY 11563
(516) 596-6300

Date: 1/23/2009
Proj. Name: NWS Yorktown, VA
Proj. #: DS14934
Operators: Will M
Point 13 of 0

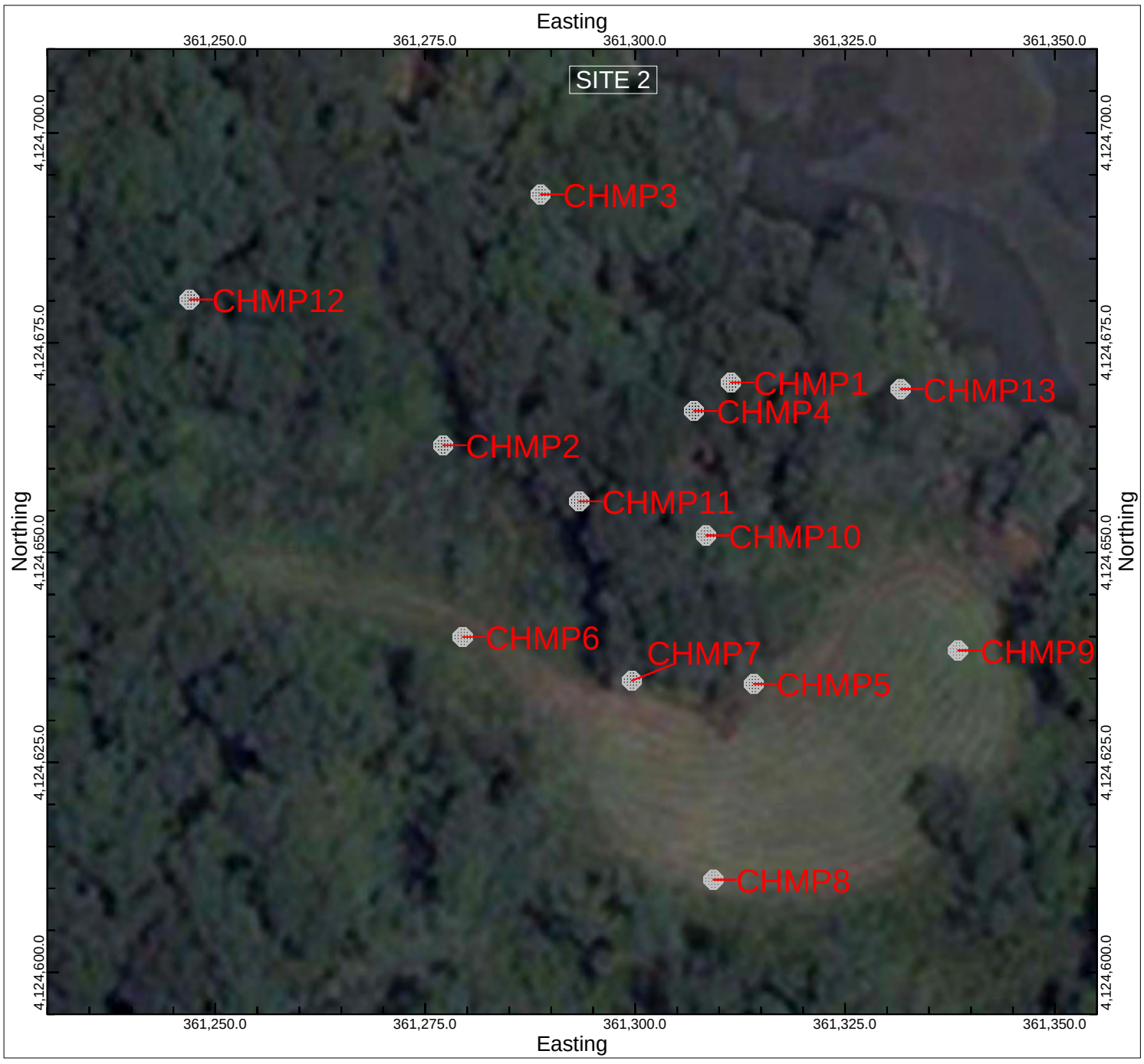


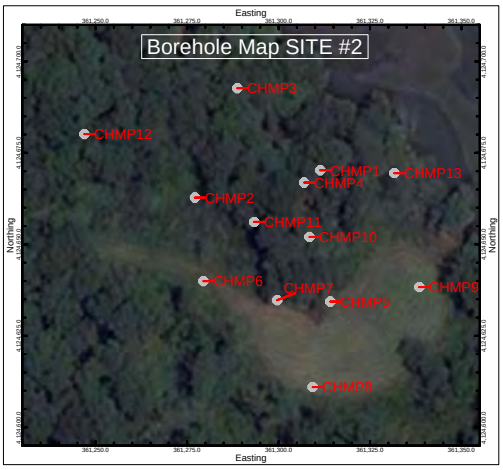
CH2M Hill
NWS Yorktown, VA
SITE 2

MIP Borehole Map

LEGEND

MIP Borehole
GPS=UTM (Northing, Easting)
Distance units = Meters (M)
Depth Units = Feet (ft)



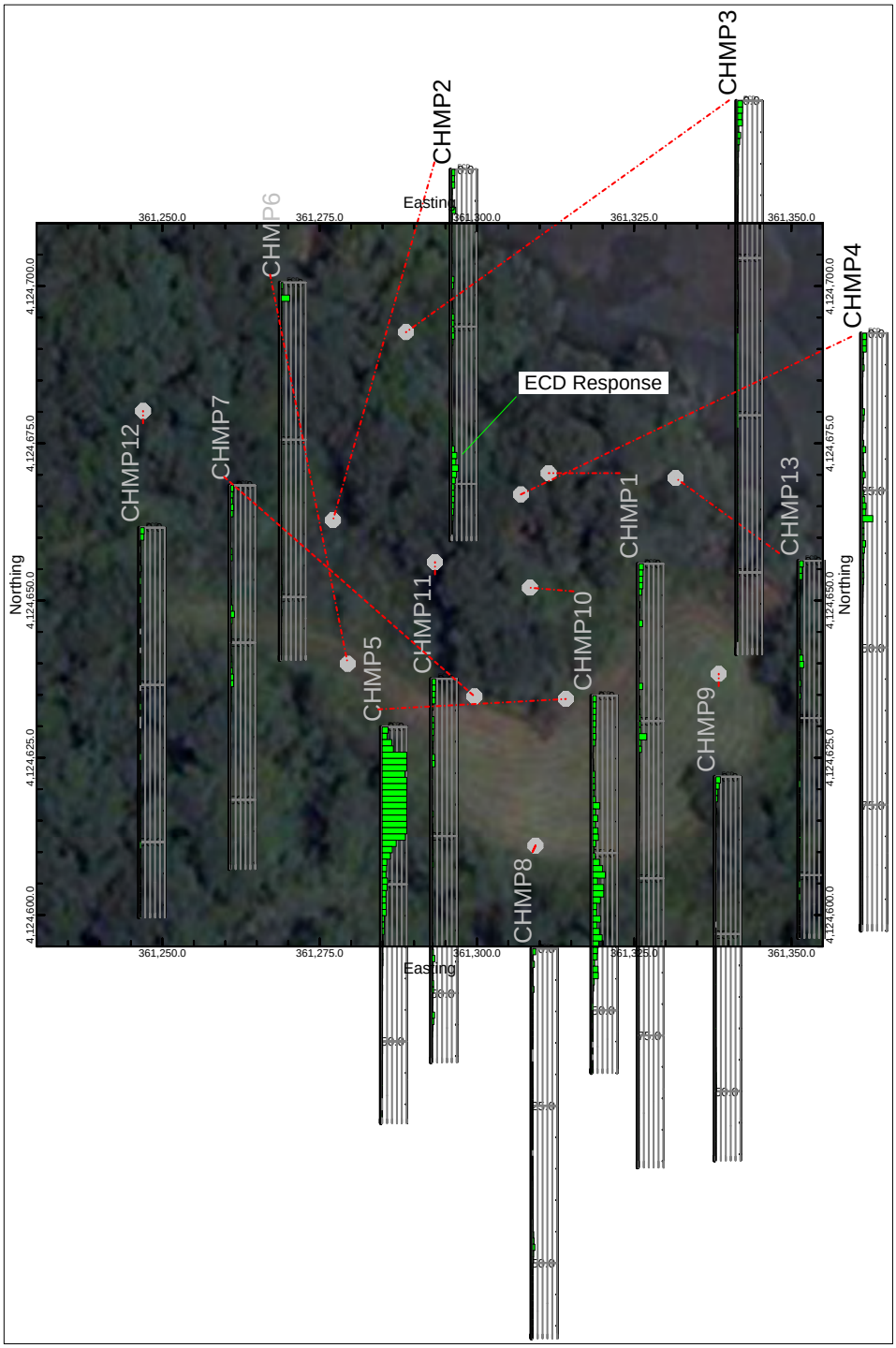


CH2M Hill
NWS Yorktown, VA
SITE 2

ECD Multilog Map

LEGEND

ECD = Electron Capture Detector
PID = Photo Ionization Dectector
ECD/PID Units = Micro Volts (UV)
Distance units = Feet (ft)
Depth Units = Feet (ft)



ZEBRA ENVIRONMENTAL

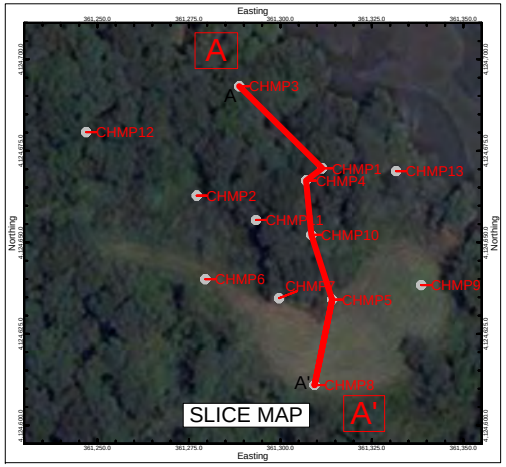
CH2MHILL - NWS YORKTOWN VA

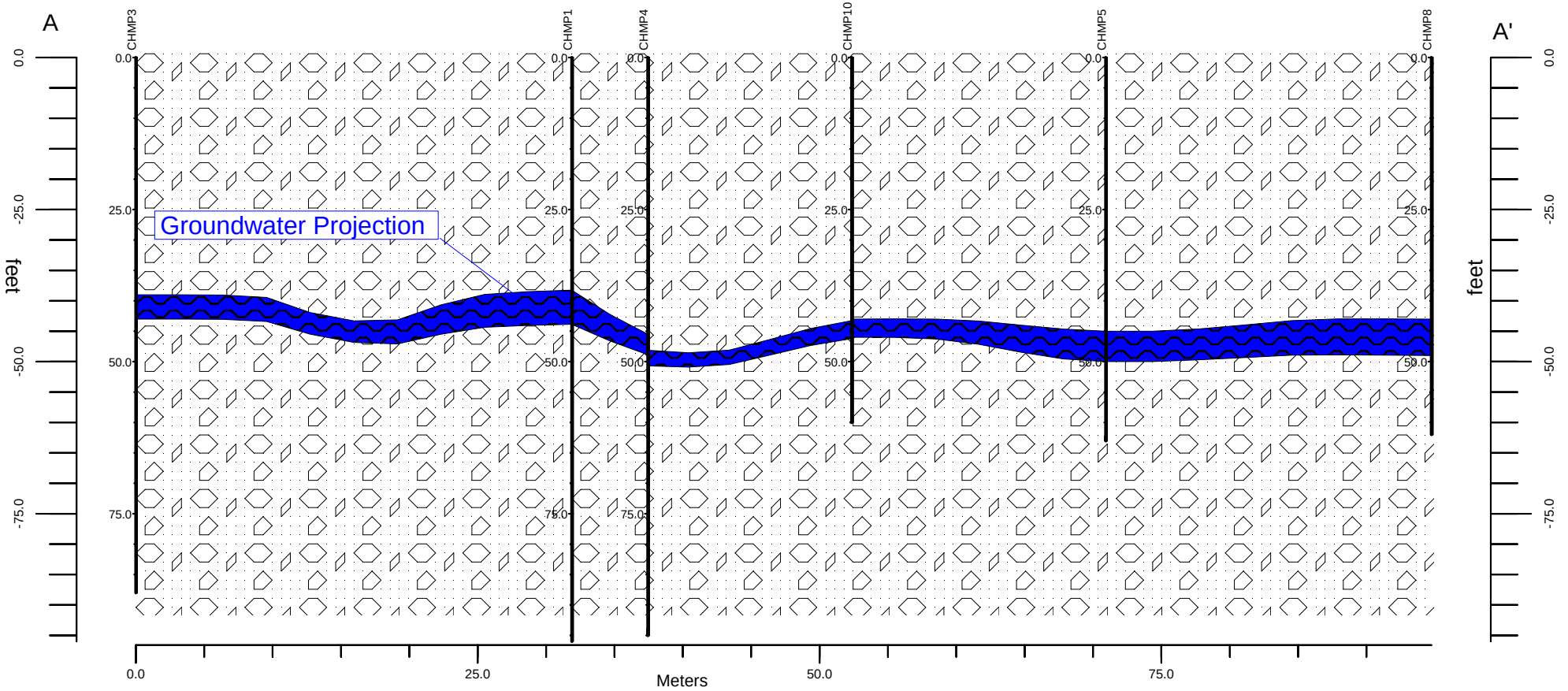
CH2M Hill
NWS Yorktown, VA
SITE 2

Groundwater Cross-Section Report
A to A'

LEGEND

ECD = Electron Capture Detector
PID = Photo Ionization Dectector
ECD/PID Units = Micro Volts (UV)
Distance units = Meters (M)
Depth Units = Feet (ft)



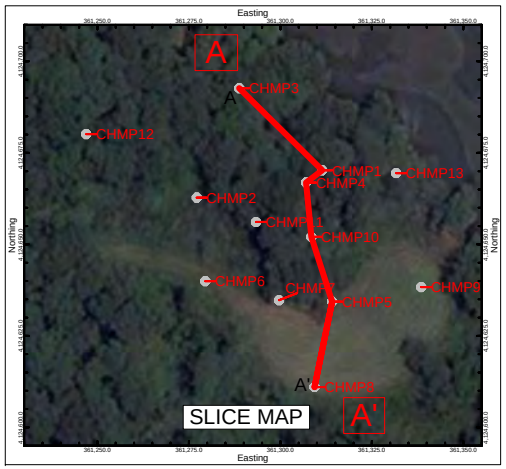


ZEBRA ENVIRONMENTAL

CH2MHILL - NWS YORKTOWN VA

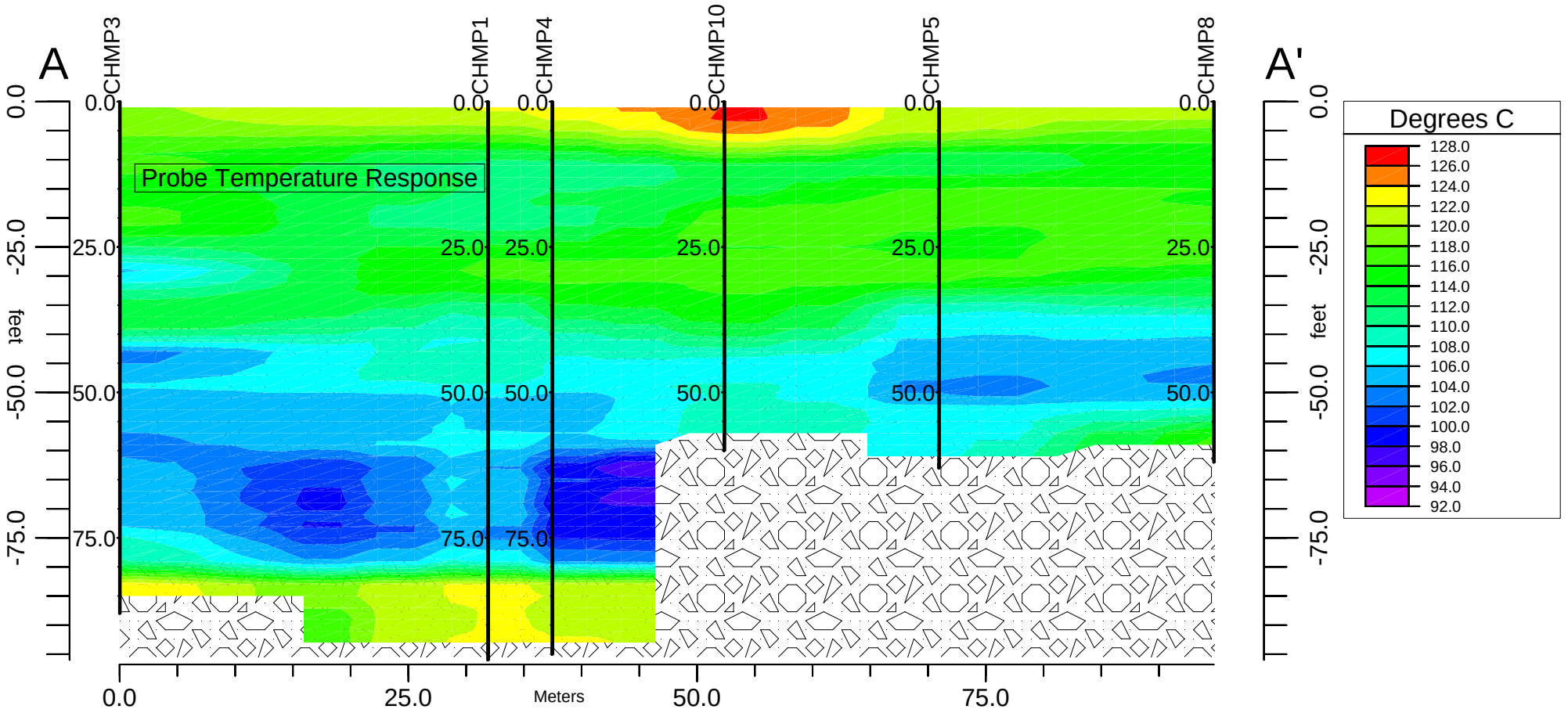
CH2M Hill
NWS Yorktown, VA
SITE 2

Temperature Cross-Section Report
A to A'



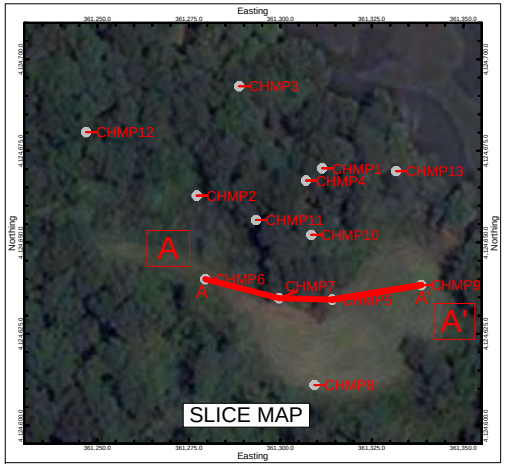
LEGEND

Probe Temperature = Celsius (C)
ECD/PID Units = Micro Volts (UV)
Distance units = Meters (M)
Depth Units = Feet (ft)



ZEBRA ENVIRONMENTAL

CH2MHILL - NWS YORKTOWN VA

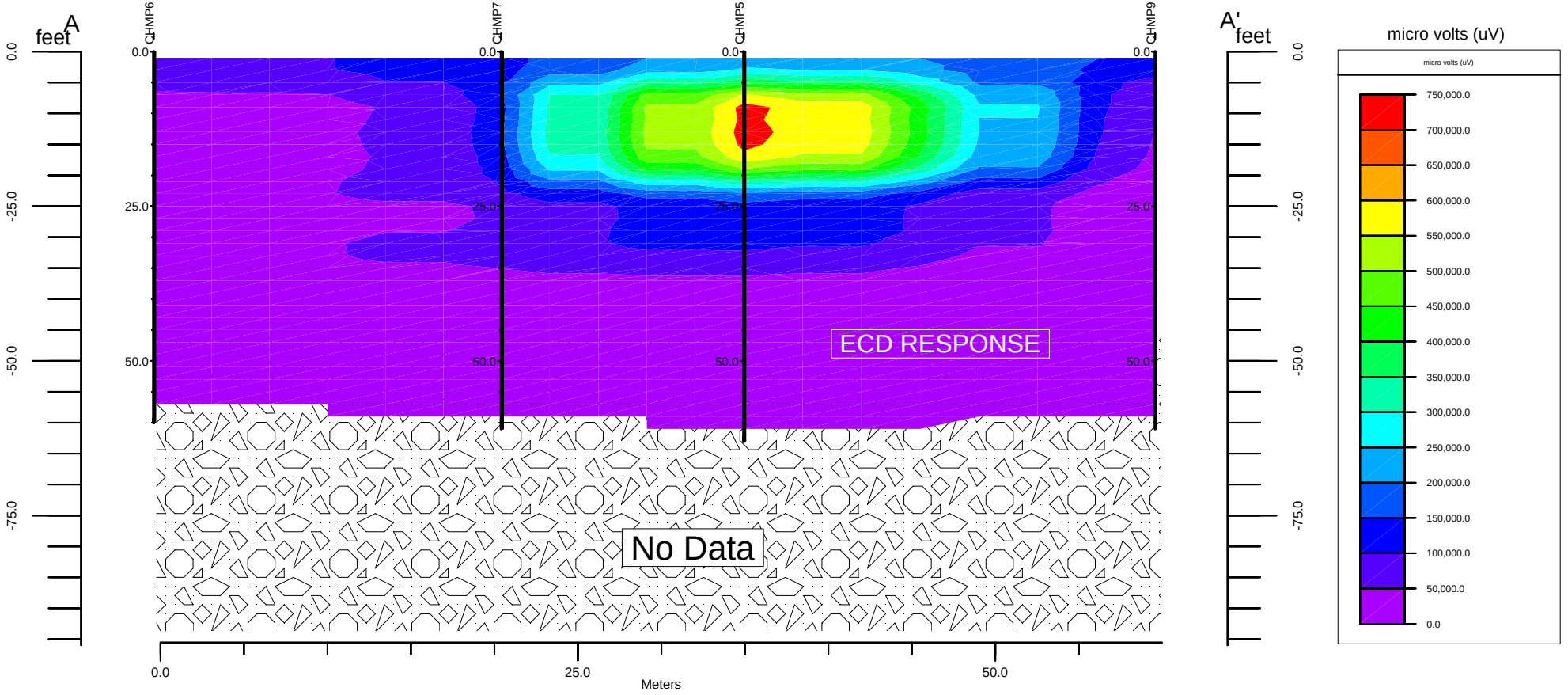


CH2M Hill
NWS Yorktown, VA
SITE 2

ECD Cross-Section Report
A to A'

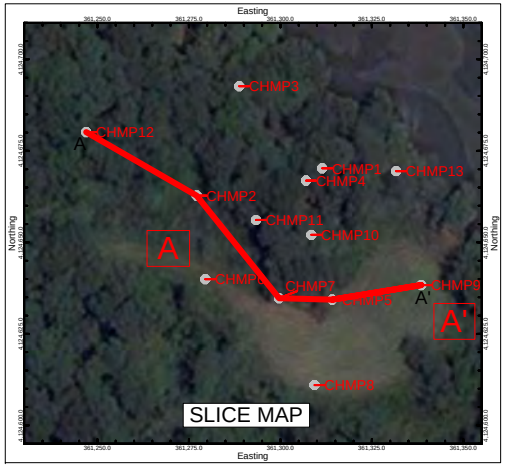
LEGEND

ECD = Electron Capture Detector
PID = Photo Ionization Dectector
ECD/PID Units = Micro Volts (UV)
Distance units = Meters (M)
Depth Units = Feet (ft)



ZEBRA ENVIRONMENTAL

CH2MHILL - NWS YORKTOWN VA

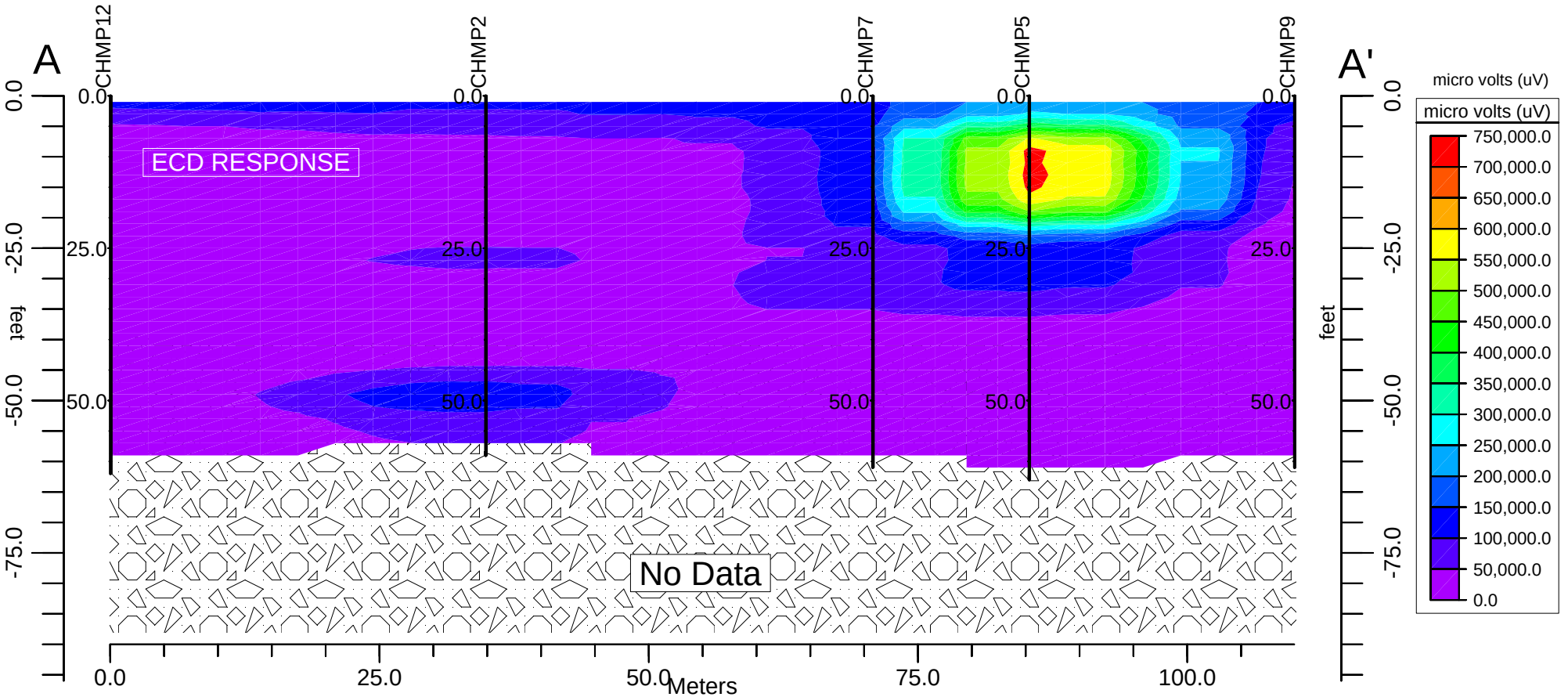


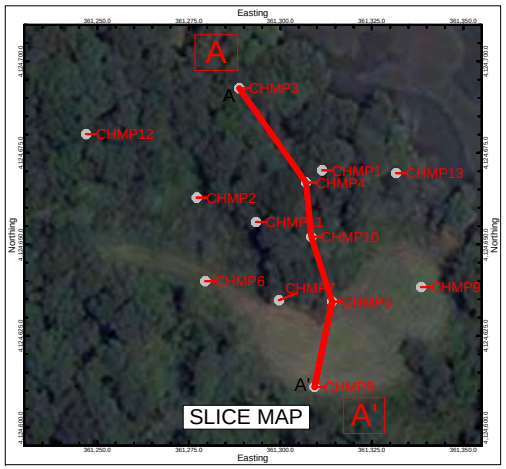
CH2M Hill
NWS Yorktown, VA
SITE 2

ECD Cross-Section Report
A to A'

LEGEND

ECD = Electron Capture Detector
PID = Photo Ionization Dectector
ECD/PID Units = Micro Volts (UV)
Distance units = Meters (M)
Depth Units = Feet (ft)



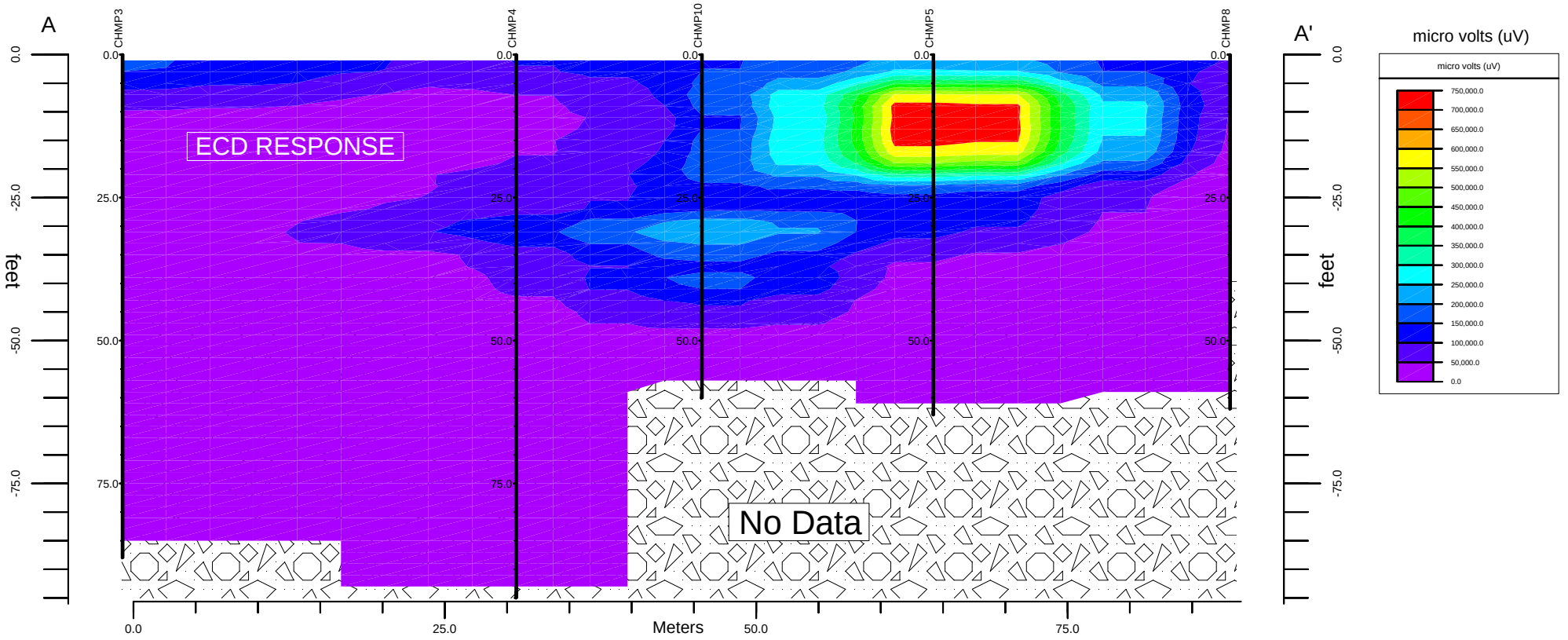


CH2M Hill
NWS Yorktown, VA
SITE 2

ECD Cross-Section Report
A to A'

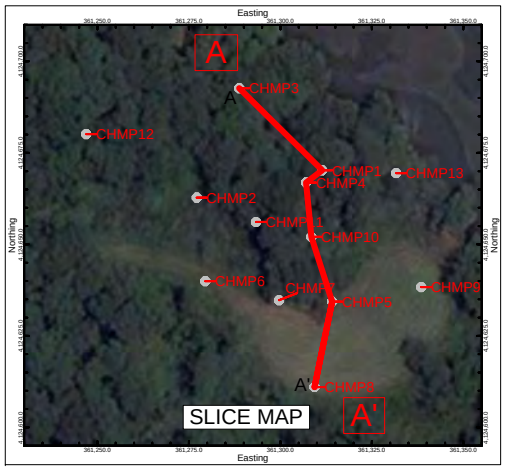
LEGEND

ECD = Electron Capture Detector
PID = Photo Ionization Dectector
ECD/PID Units = Micro Volts (UV)
Distance units = Meters (M)
Depth Units = Feet (ft)



ZEBRA ENVIRONMENTAL

CH2MHILL - NWS YORKTOWN VA

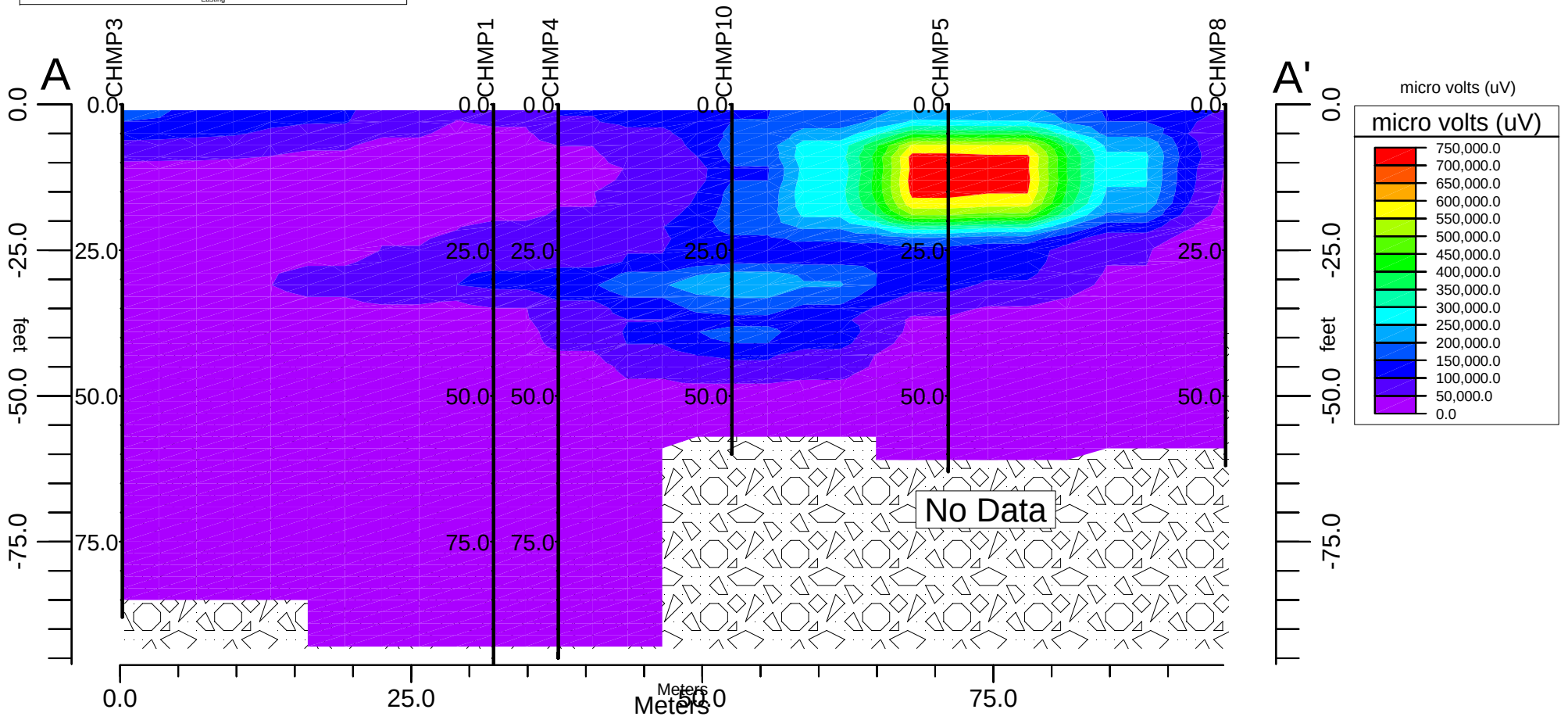


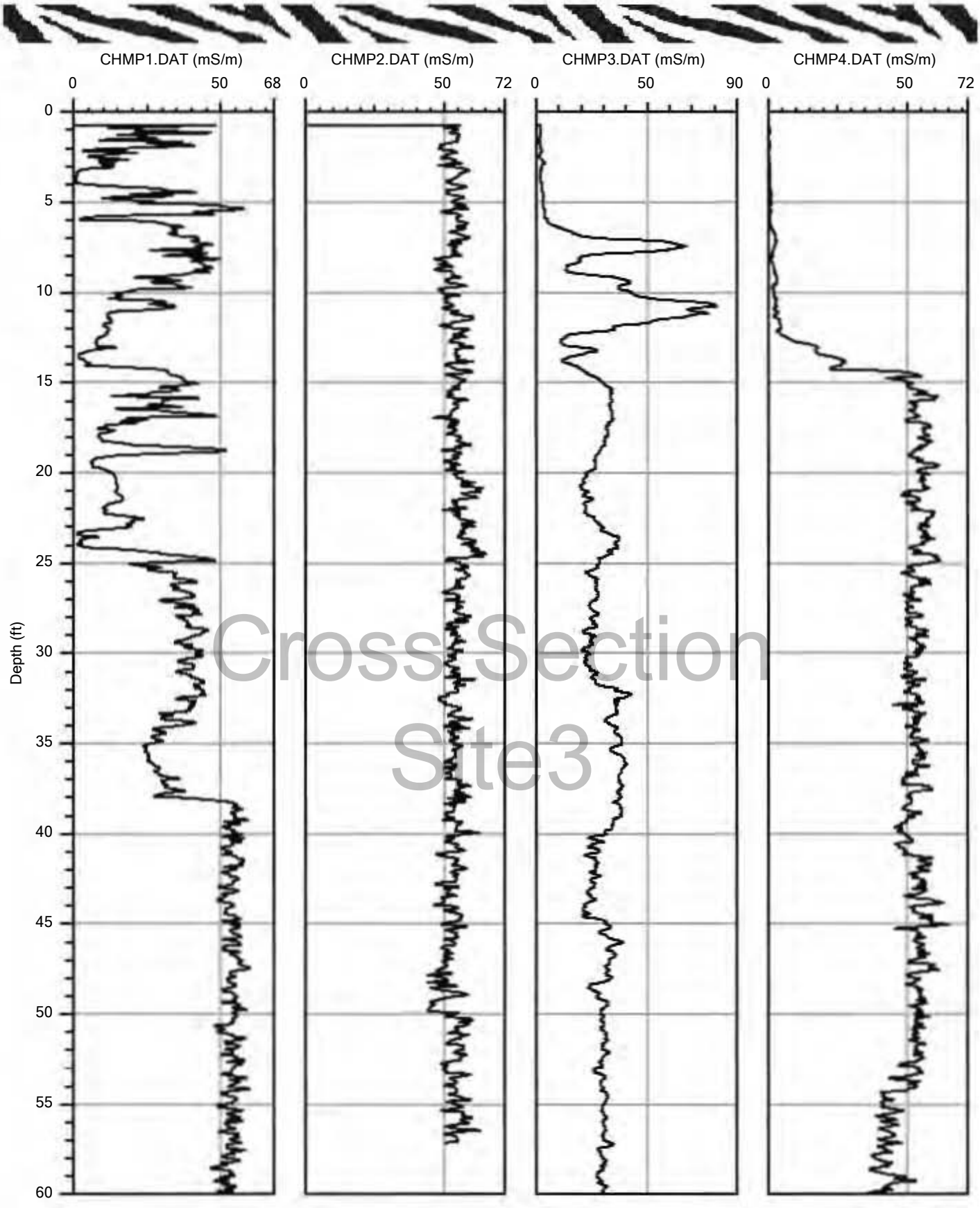
CH2M Hill
NWS Yorktown, VA
SITE 2

ECD Cross-Section Report
A to A'

LEGEND

ECD = Electron Capture Detector
PID = Photo Ionization Dectector
ECD/PID Units = Micro Volts (UV)
Distance units = Meters (M)
Depth Units = Feet (ft)

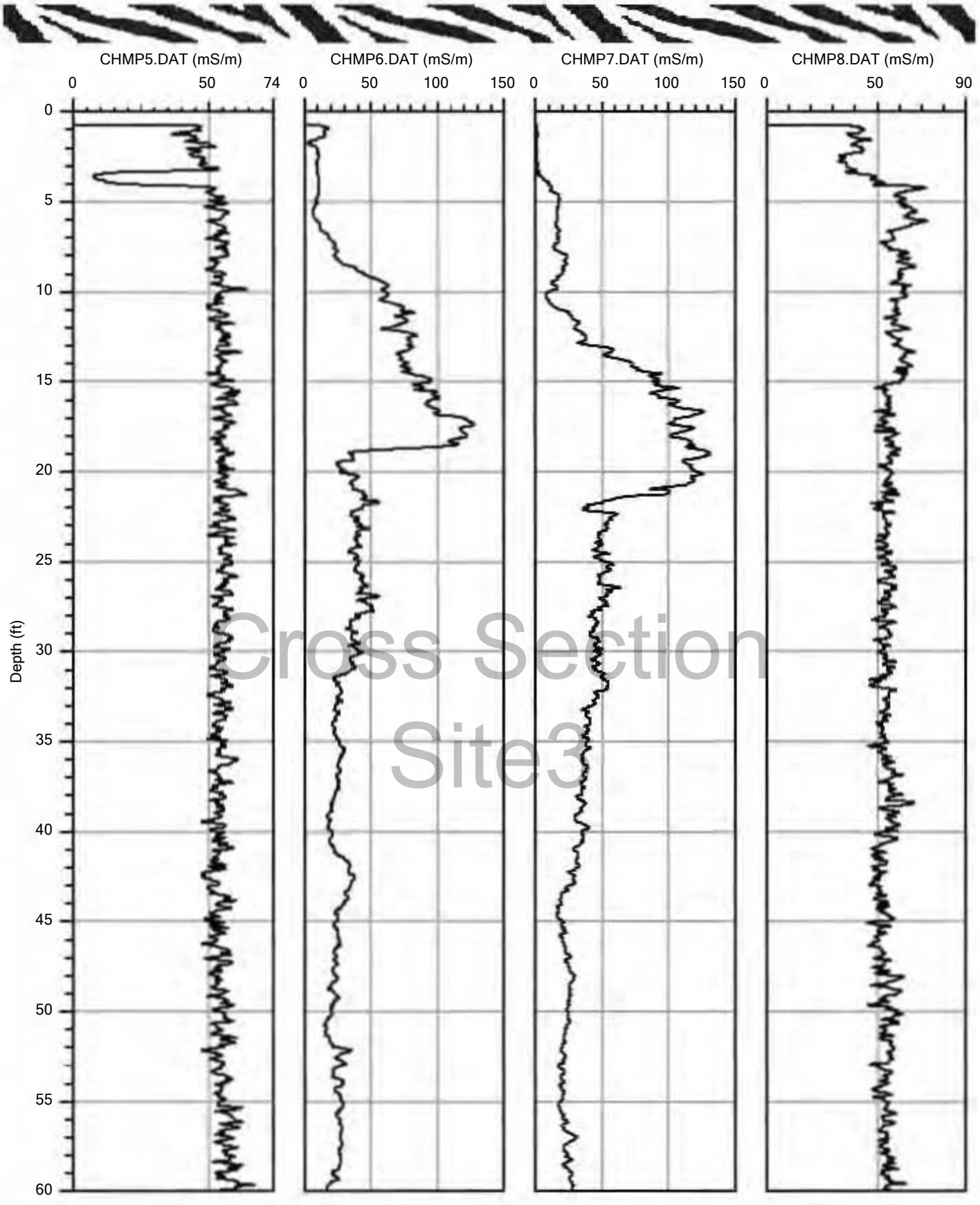




EC

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP1.DAT	1/14/2009
CHMP2.DAT	1/15/2009
CHMP3.DAT	1/15/2009
CHMP4.DAT	1/16/2009



CHMP5.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 50″ W

CHMP6.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

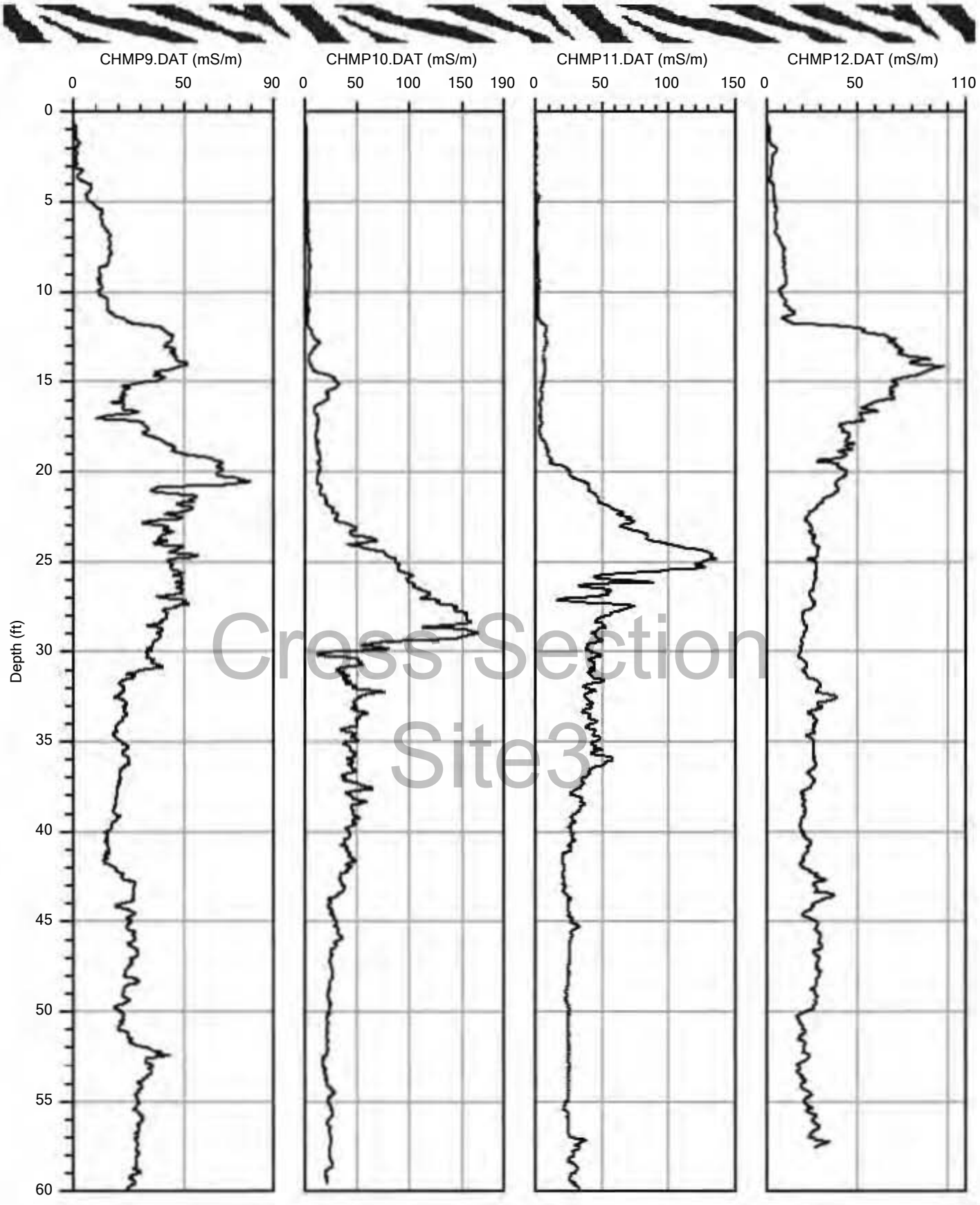
CHMP7.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP8.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 51″ W

EC

CH2MHILL

Company:	Operator:
ZEBRA Environmental	John Diamond
Project ID:	Client:
NWS Yorktown VA	CH2M Hill



CHMP9.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 49″ W

CHMP10.DAT 1/21/2009

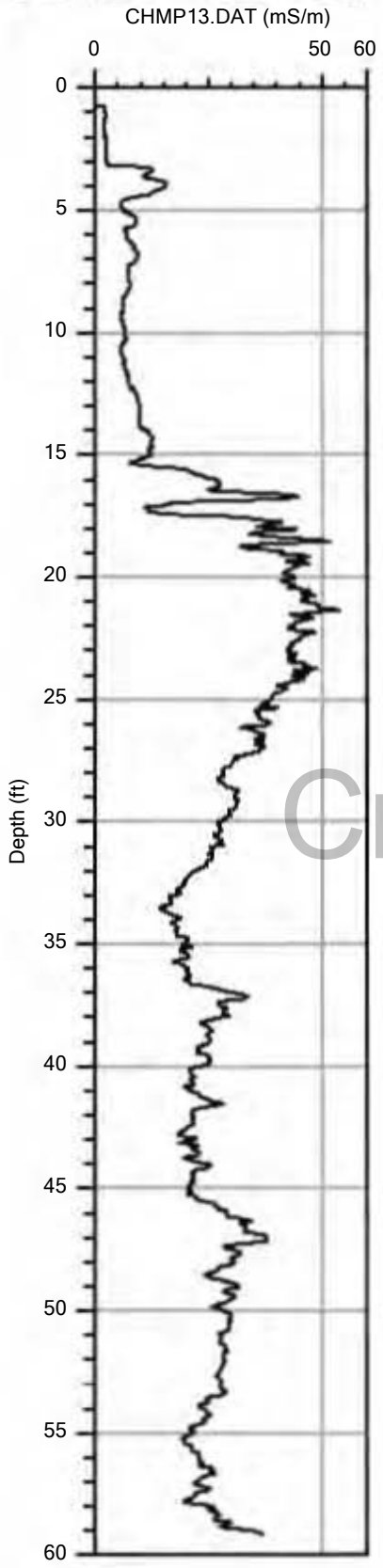
CHMP11.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP12.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

EC

Company:	Operator:
ZEBRA Environmental	John Diamond
Project ID:	Client:
NWS Yorktown VA	CH2M Hill

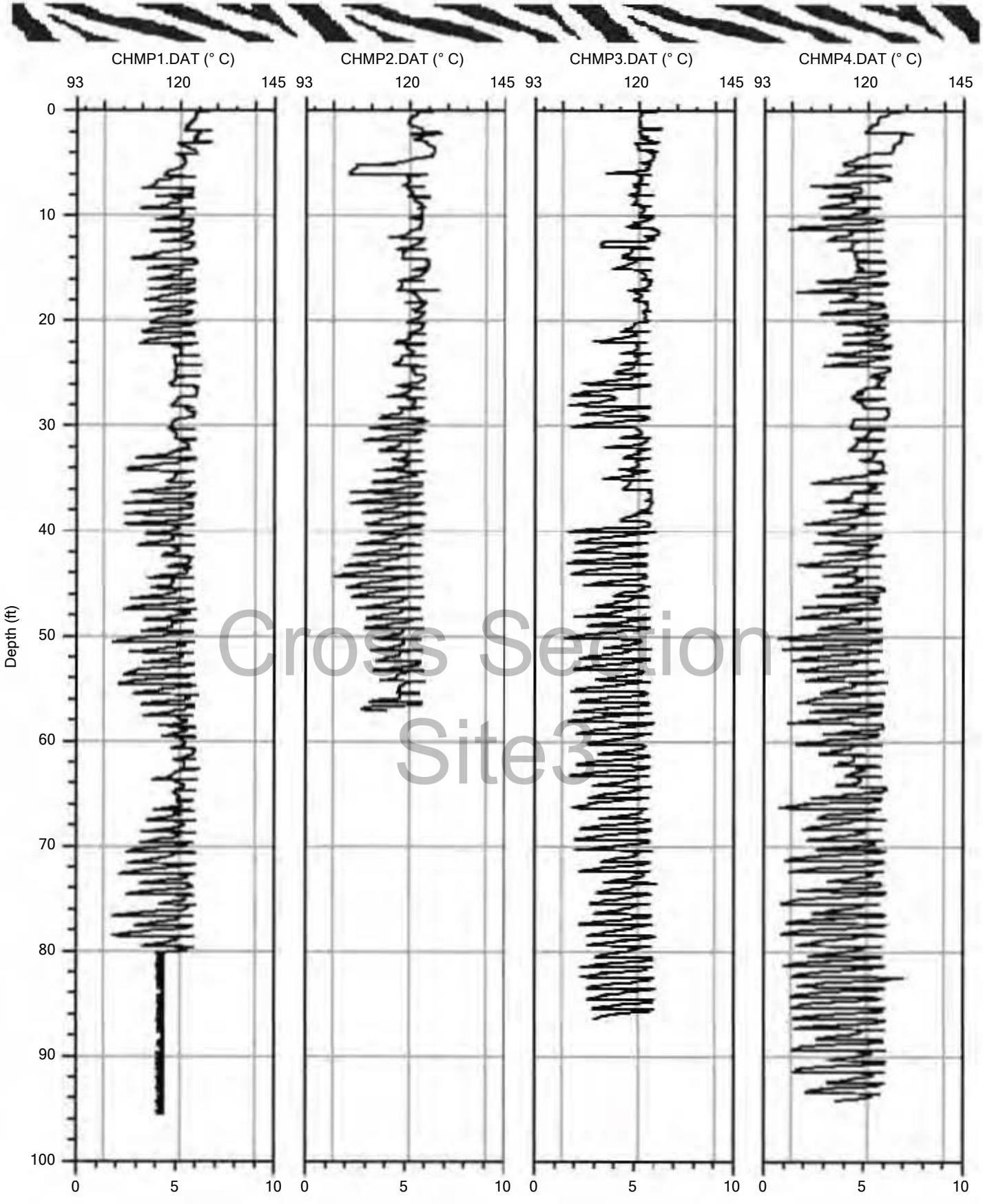
CH2MHILL



Cross Section
Site3

EC

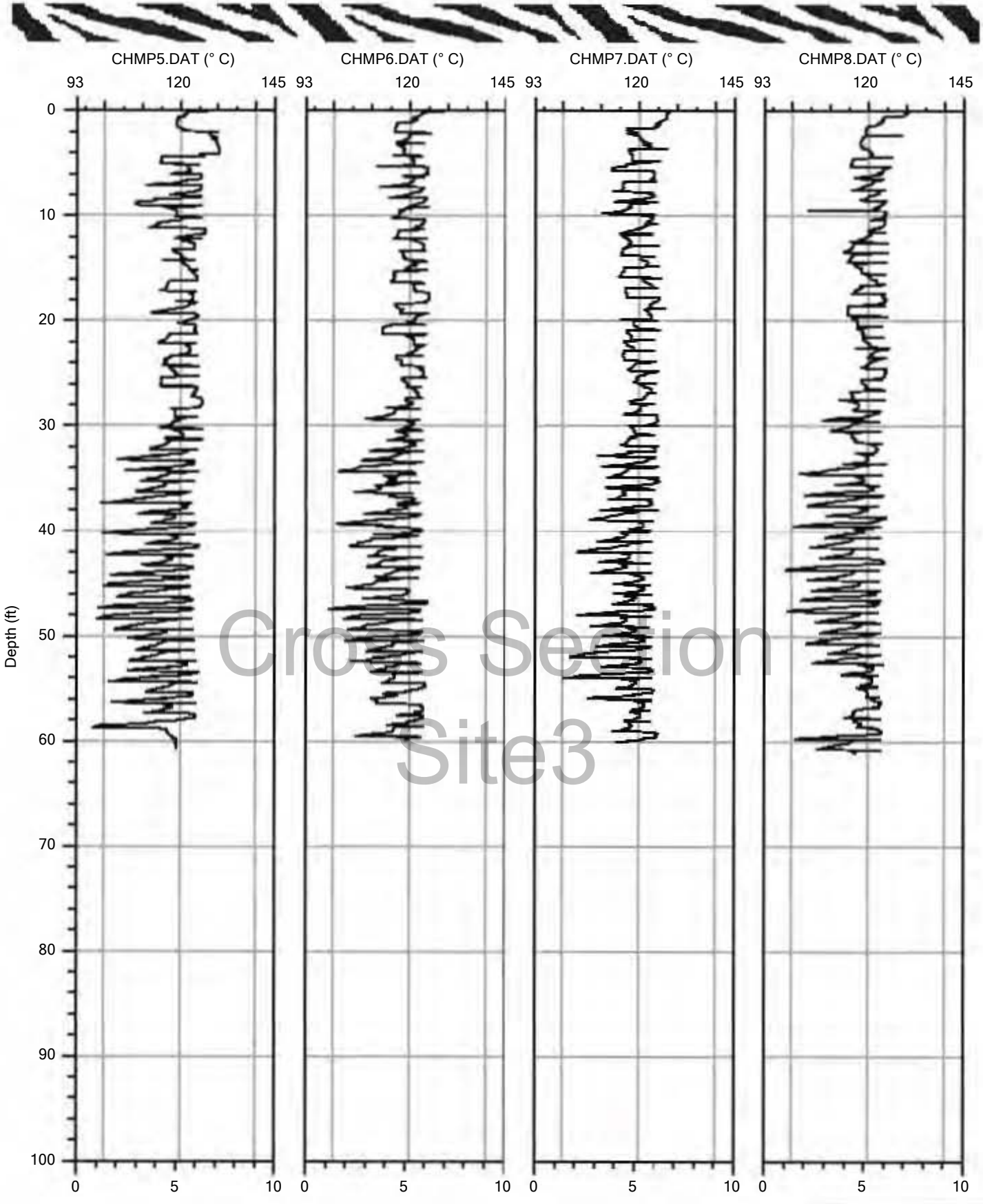
		File: CHMP13.DAT
Company: ZEBRA Environmental	Operator: John Diamond	Date: 1/23/2009
Project ID: NWS Yorktown VA	Client: CH2M Hill	Location: 0° 0′ 0″, 76° 33′ 49″ W



Temp. Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP1.DAT	1/14/2009
CHMP2.DAT	1/15/2009
CHMP3.DAT	1/15/2009
CHMP4.DAT	1/16/2009



Temp. Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

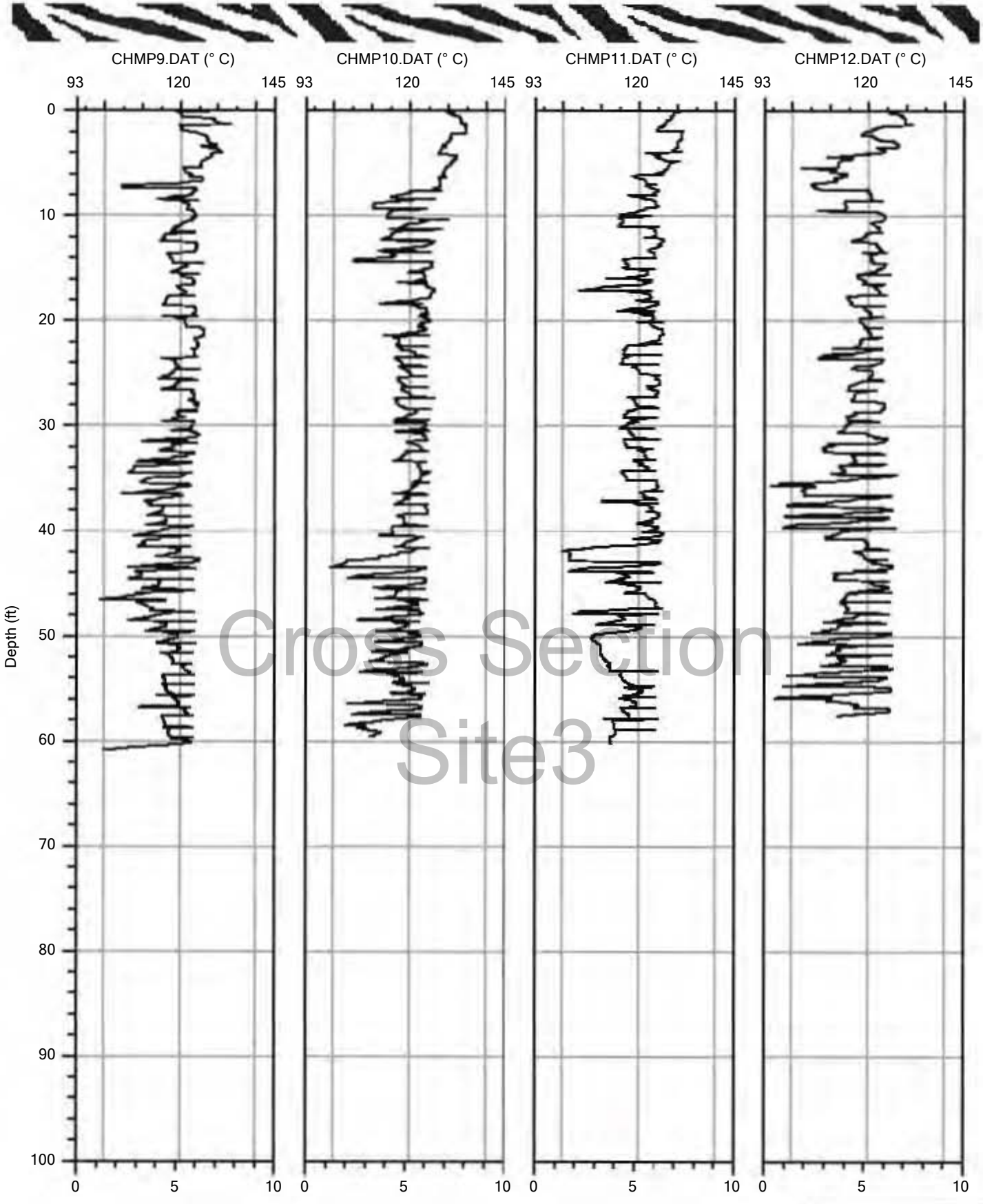
CHMP5.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 50″ W

CHMP6.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP7.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP8.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 51″ W

CH2MHILL



CHMP9.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 49″ W

CHMP10.DAT 1/21/2009

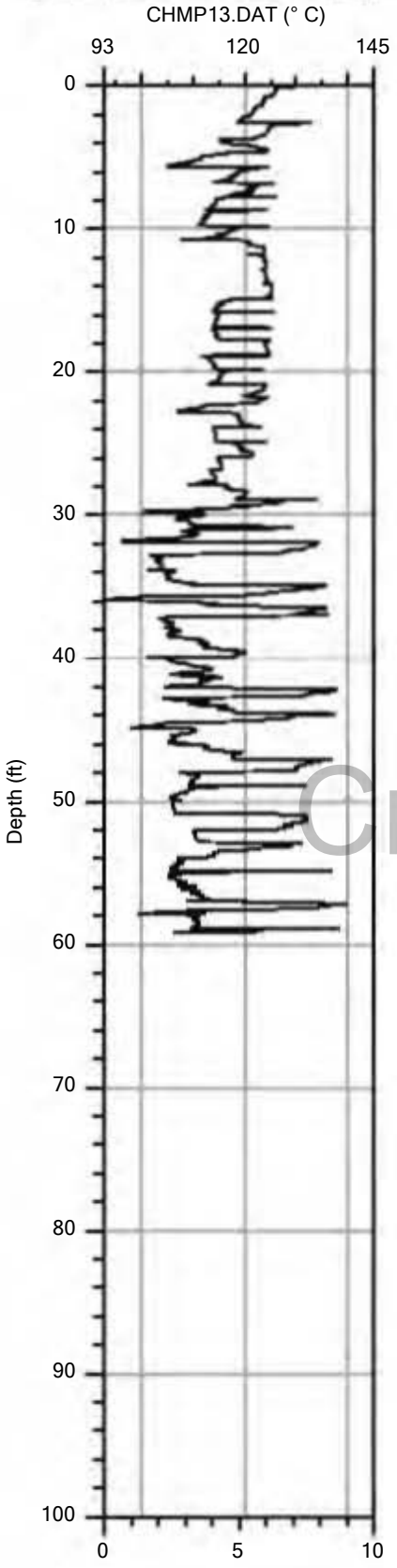
CHMP11.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP12.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

Temp. Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

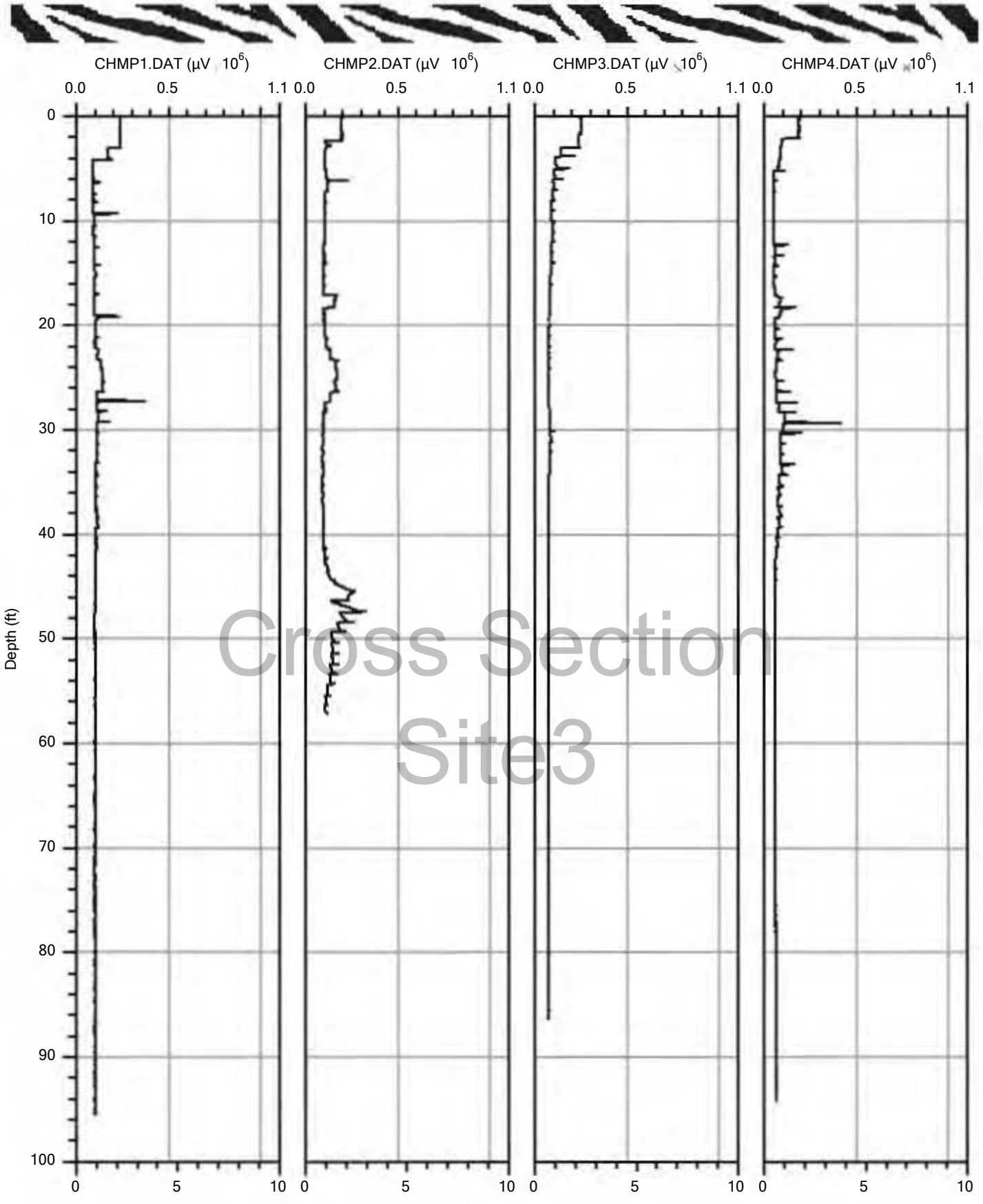
CH2MHILL



Cross Section
Site3

Temp. Max

Company: ZEBRA Environmental	Operator: John Diamond	File: CHMP13.DAT
Project ID: NWS Yorktown VA	Client: CH2M Hill	Date: 1/23/2009
		Location: 0° 0′ 0″, 76° 33′ 49″ W

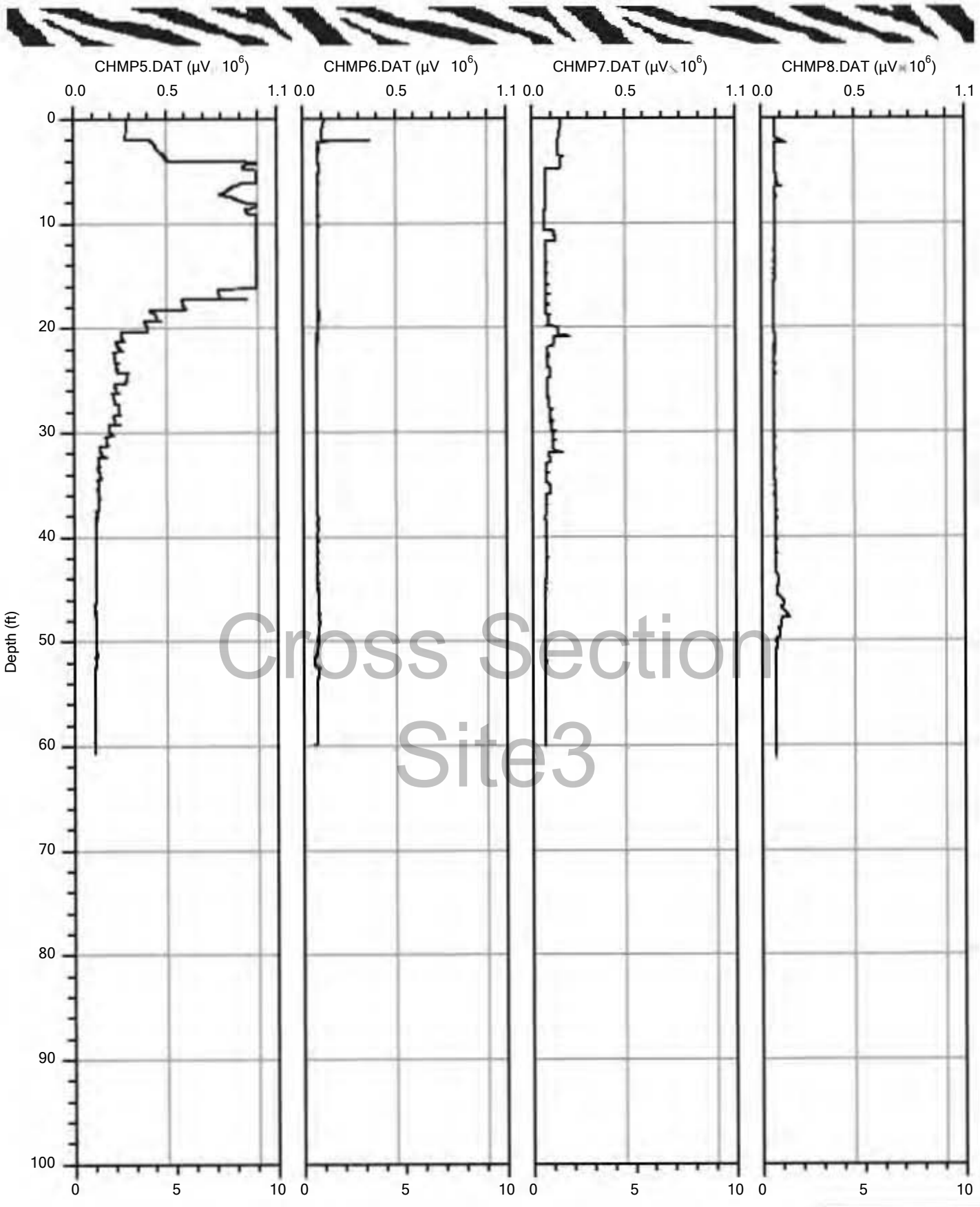


CH2MHILL

ECD Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP1.DAT	1/14/2009
CHMP2.DAT	1/15/2009
CHMP3.DAT	1/15/2009
CHMP4.DAT	1/16/2009



CHMP5.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 50″ W

CHMP6.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

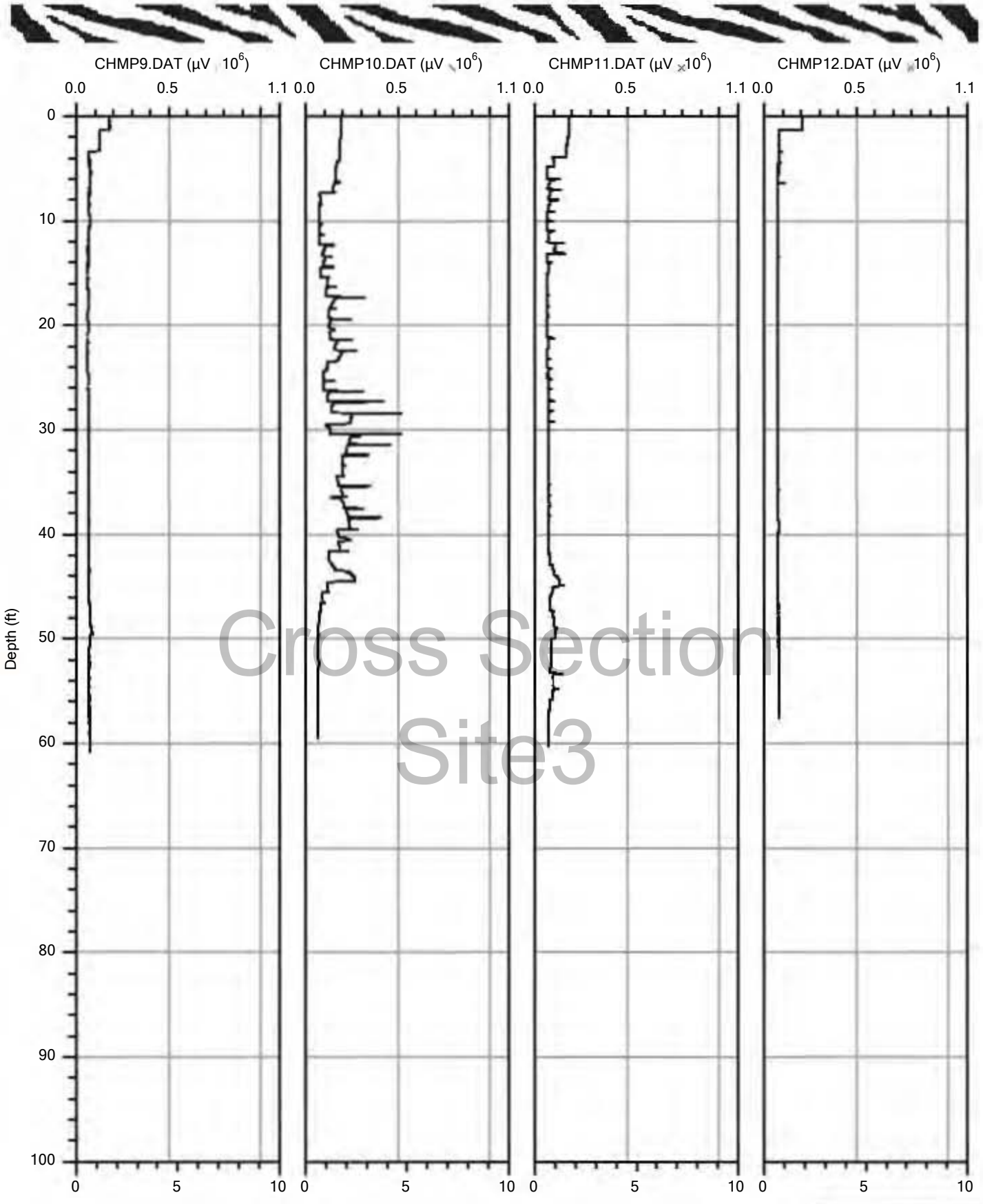
CHMP7.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP8.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 51″ W

CH2MHILL

ECD Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill



CHMP9.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 49″ W

CHMP10.DAT 1/21/2009

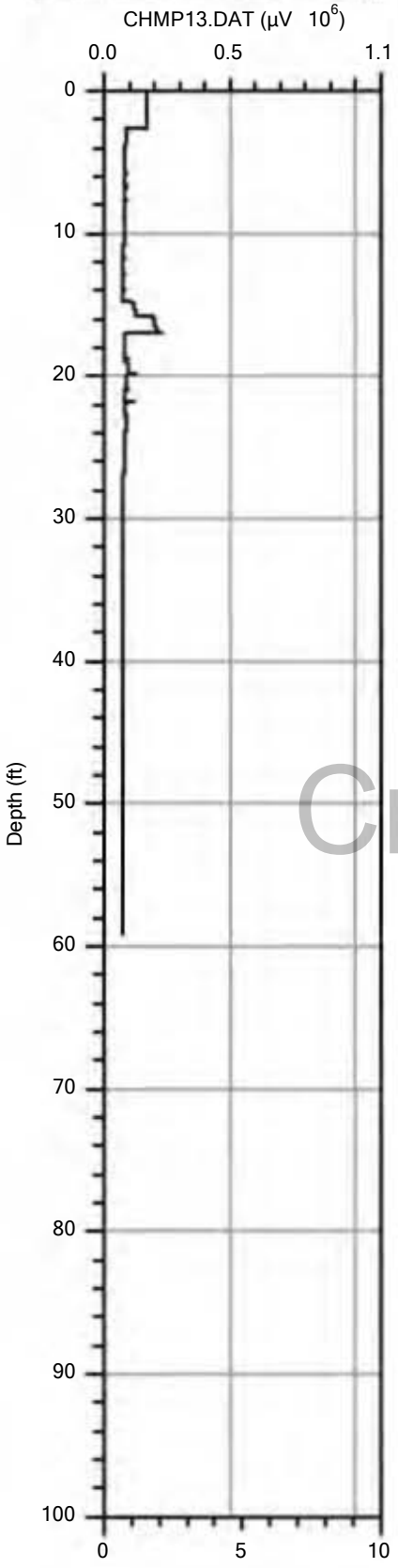
CHMP11.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP12.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

CH2MHILL

ECD Max

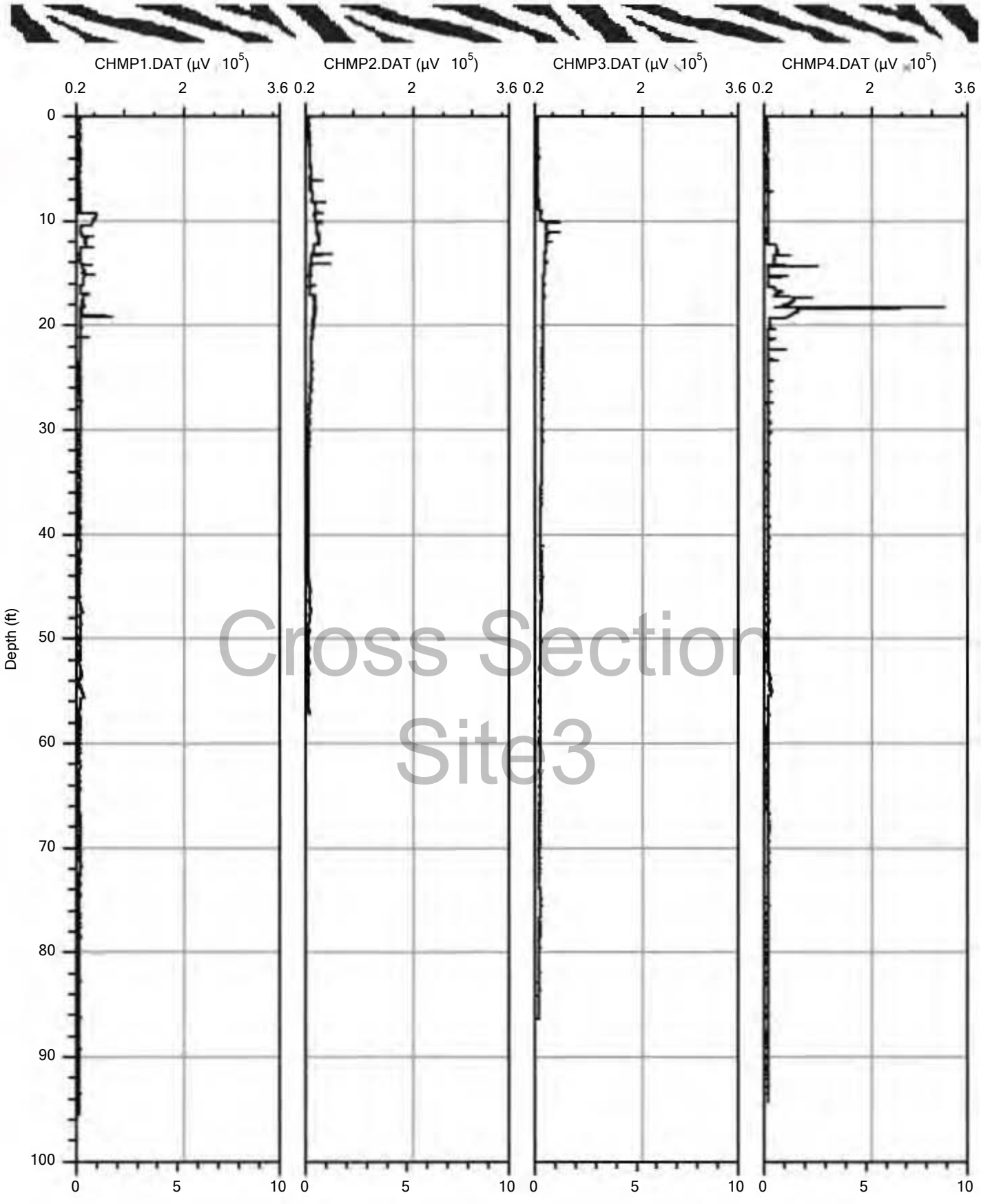
Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill



Cross Section
Site3

ECD Max

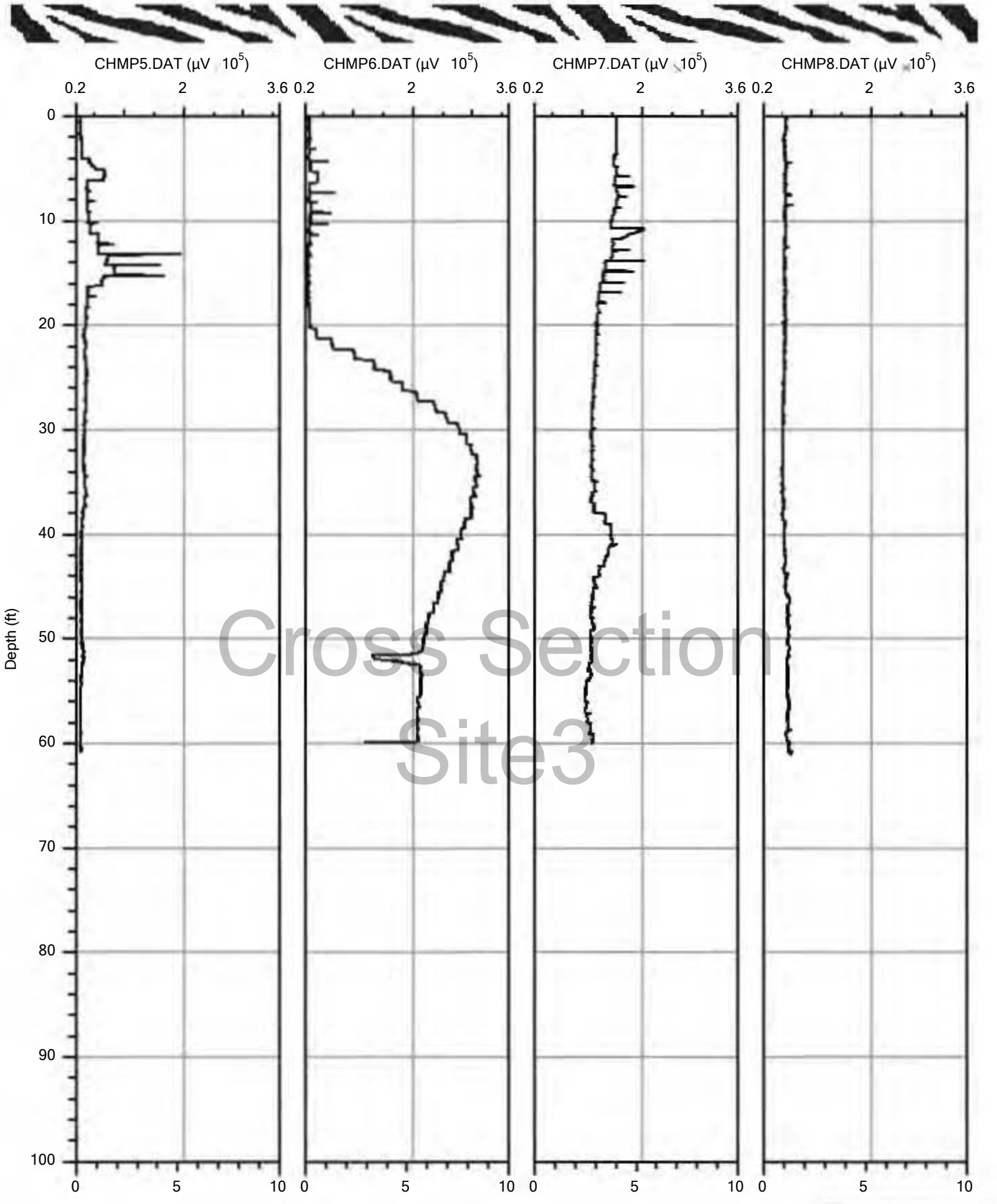
Company: ZEBRA Environmental	Operator: John Diamond	File: CHMP13.DAT
Project ID: NWS Yorktown VA	Client: CH2M Hill	Date: 1/23/2009
		Location: 0° 0′ 0″, 76° 33′ 49″ W



PID Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP1.DAT	1/14/2009
CHMP2.DAT	1/15/2009
CHMP3.DAT	1/15/2009
CHMP4.DAT	1/16/2009



CHMP5.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 50″ W

CHMP6.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

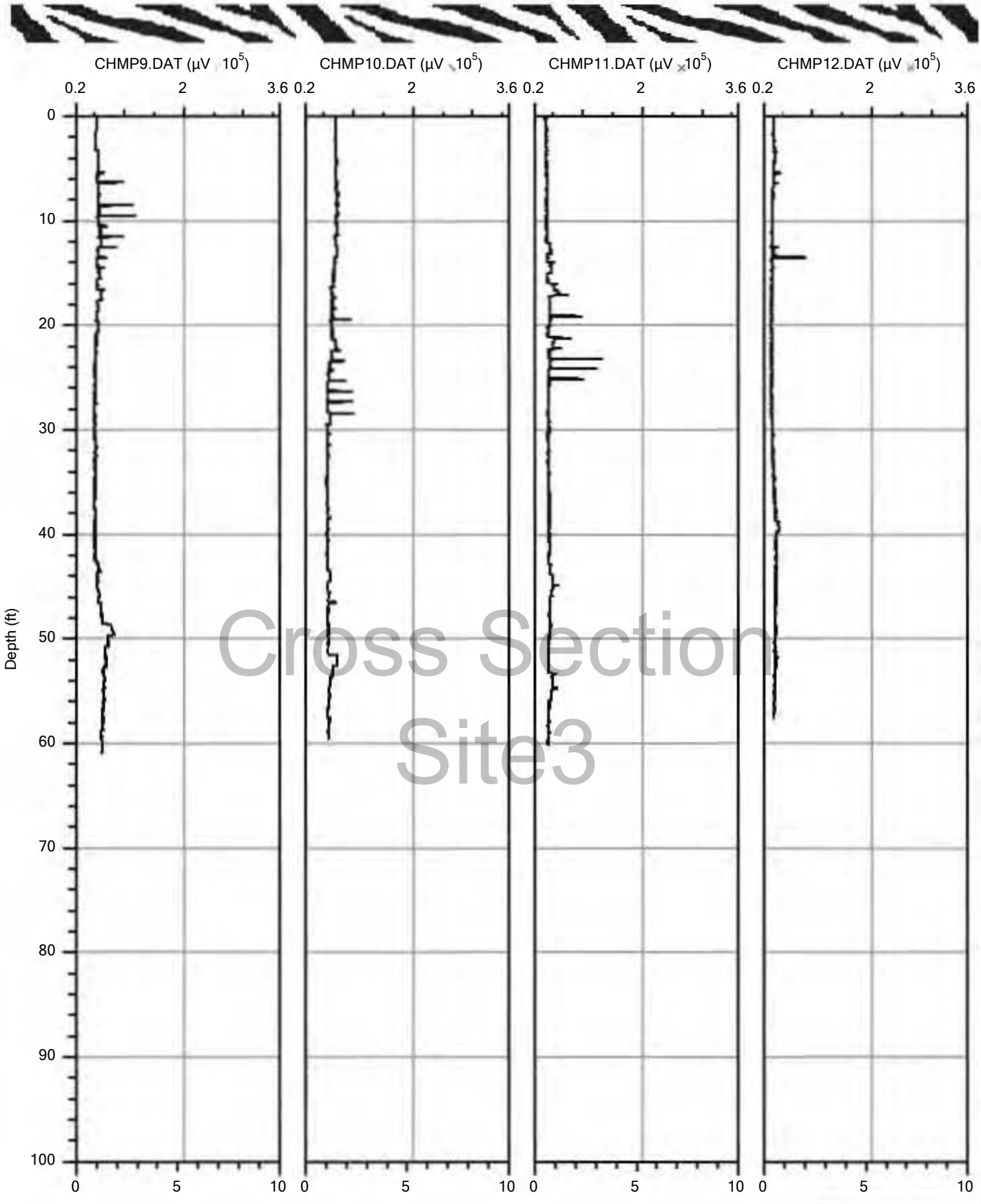
CHMP7.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP8.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 51″ W

PID Max

CH2MHILL

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill



CHMP9.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 49″ W

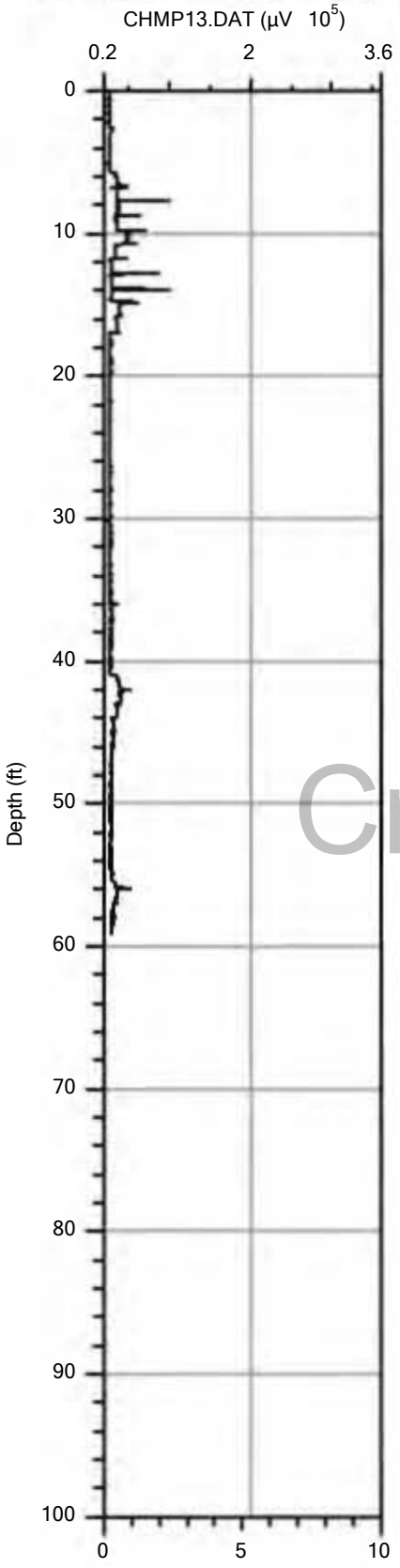
CHMP10.DAT 1/21/2009

CHMP11.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP12.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

PID Max

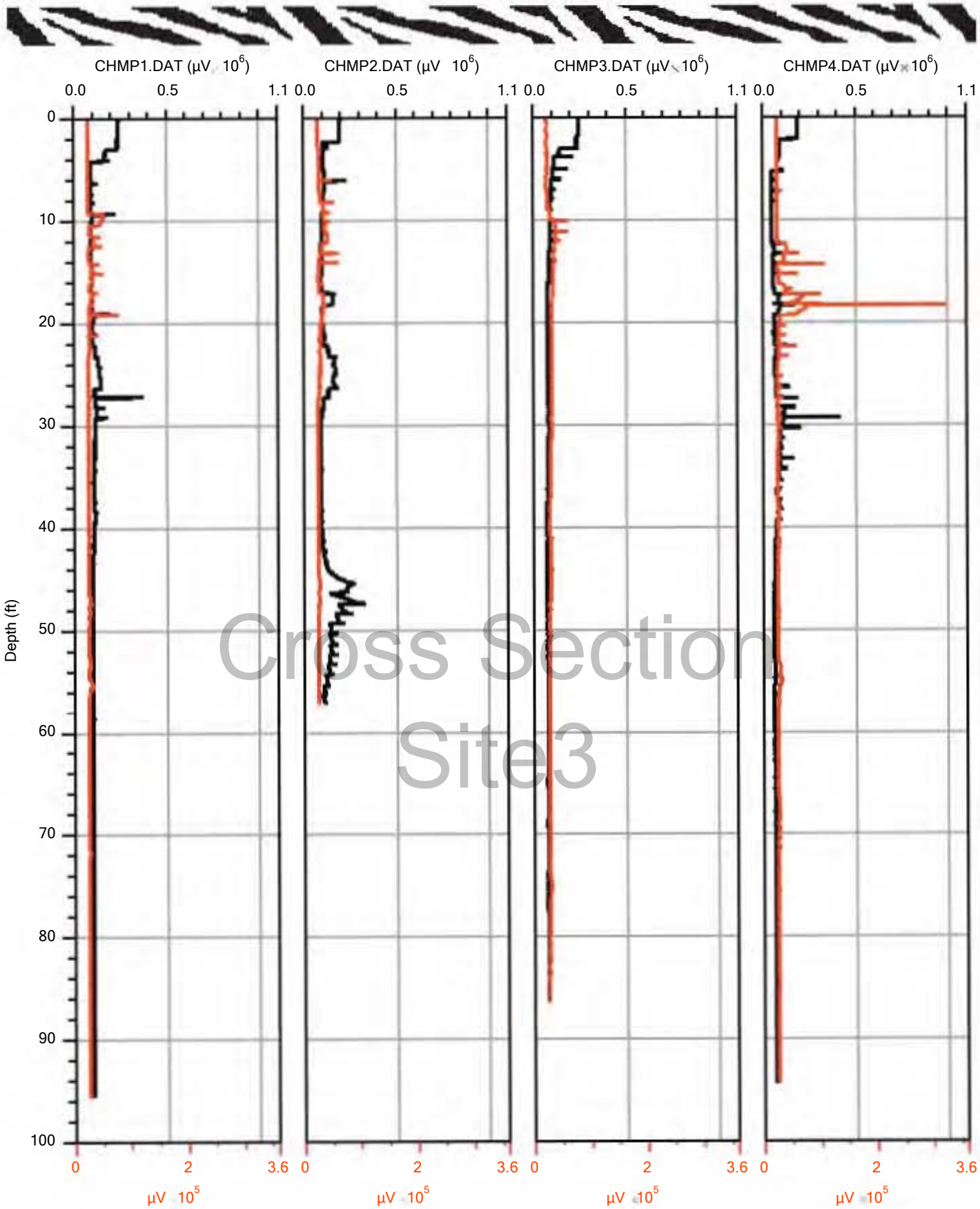
Company:	Operator:
ZEBRA Environmental	John Diamond
Project ID:	Client:
NWS Yorktown VA	CH2M Hill



Cross Section
Site3

PID Max

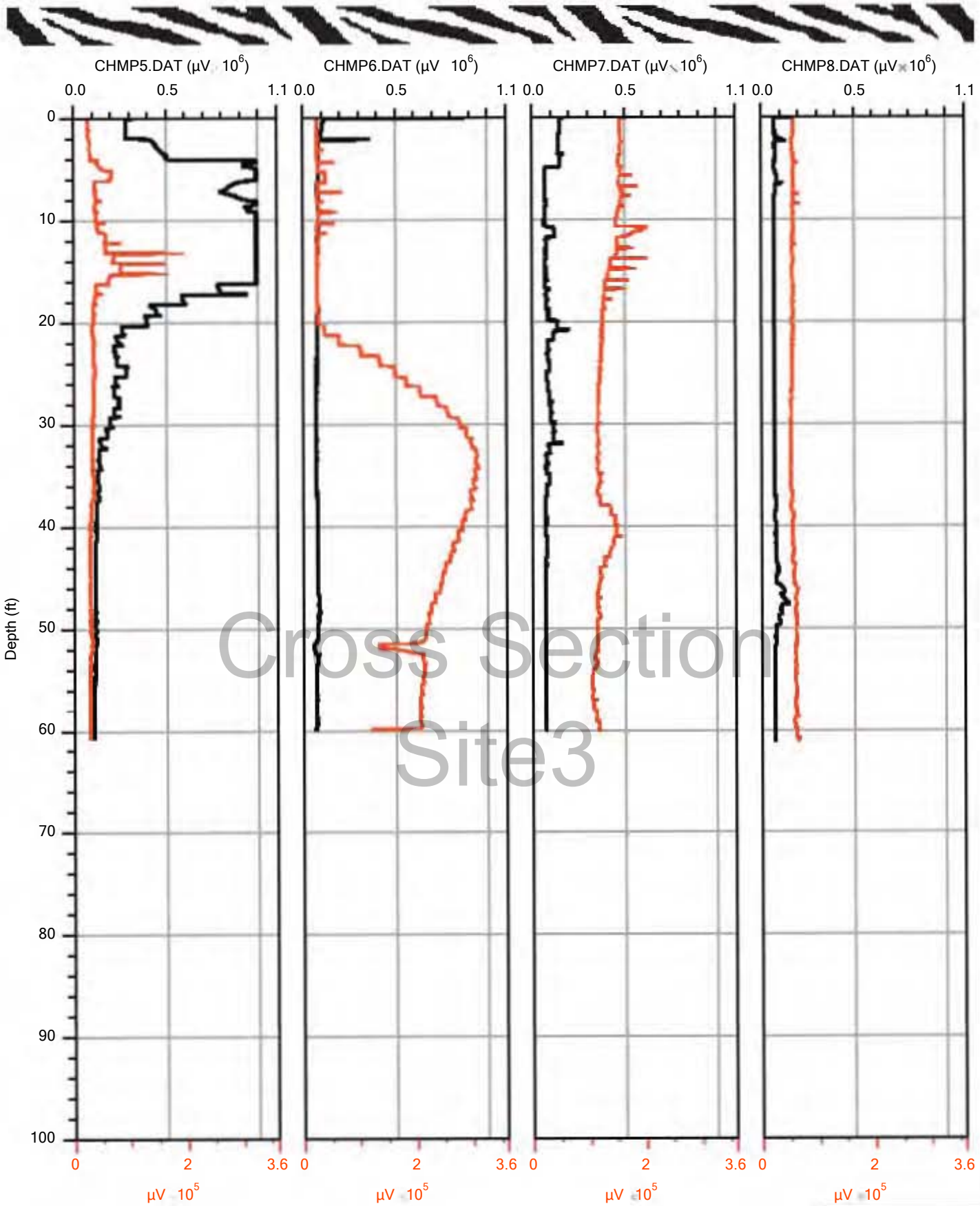
Company: ZEBRA Environmental	Operator: John Diamond	File: CHMP13.DAT
Project ID: NWS Yorktown VA	Client: CH2M Hill	Date: 1/23/2009
		Location: 0° 0′ 0″, 76° 33′ 49″ W



ECD Max / PID Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CHMP1.DAT	1/14/2009
CHMP2.DAT	1/15/2009
CHMP3.DAT	1/15/2009
CHMP4.DAT	1/16/2009

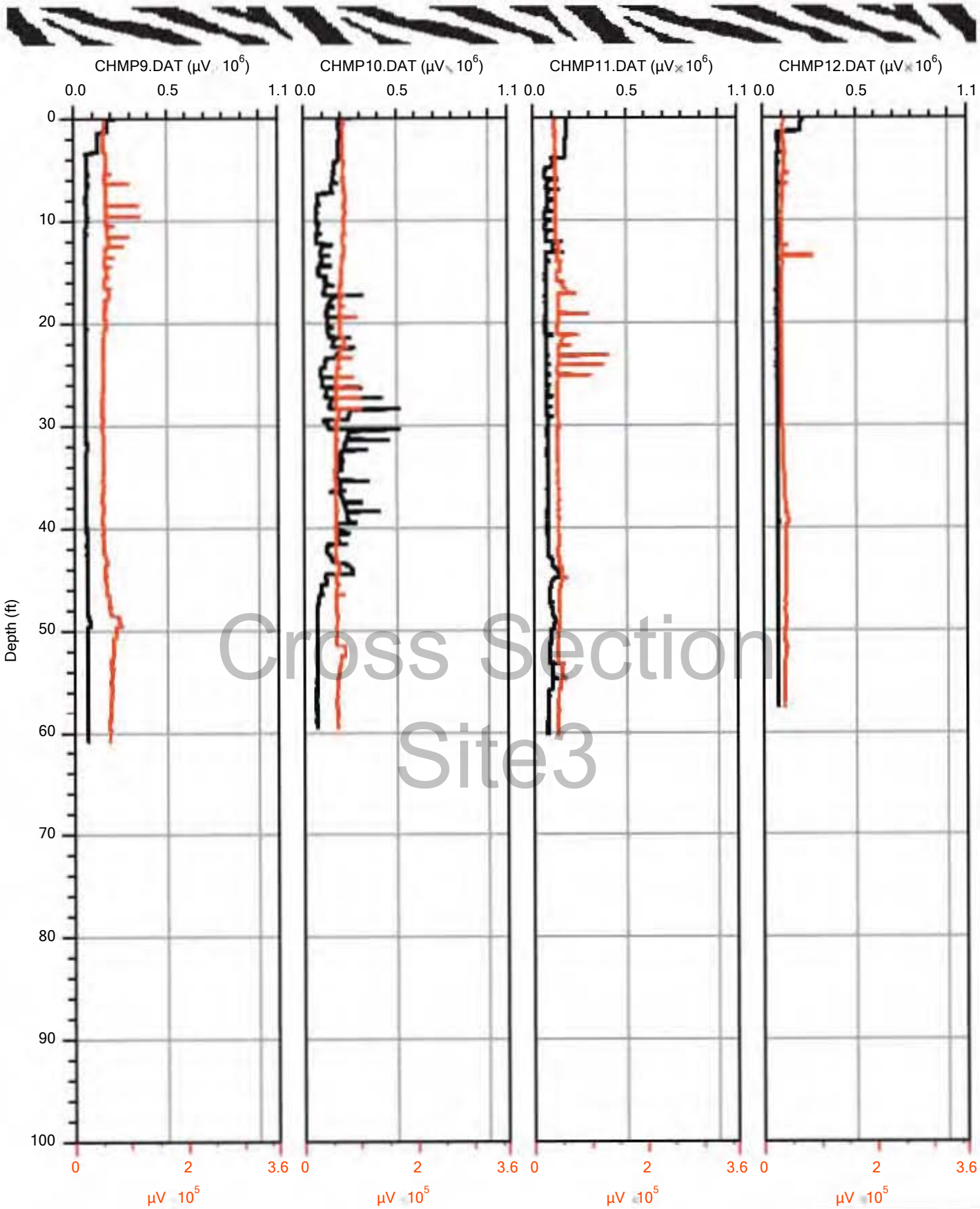


CHMP5.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 50″ W
CHMP6.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W
CHMP7.DAT 1/20/2009
0° 0′ 0″, 76° 33′ 52″ W
CHMP8.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 51″ W

ECD Max / PID Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CH2MHILL



CHMP9.DAT 1/21/2009
0° 0′ 0″, 76° 33′ 49″ W

CHMP10.DAT 1/21/2009

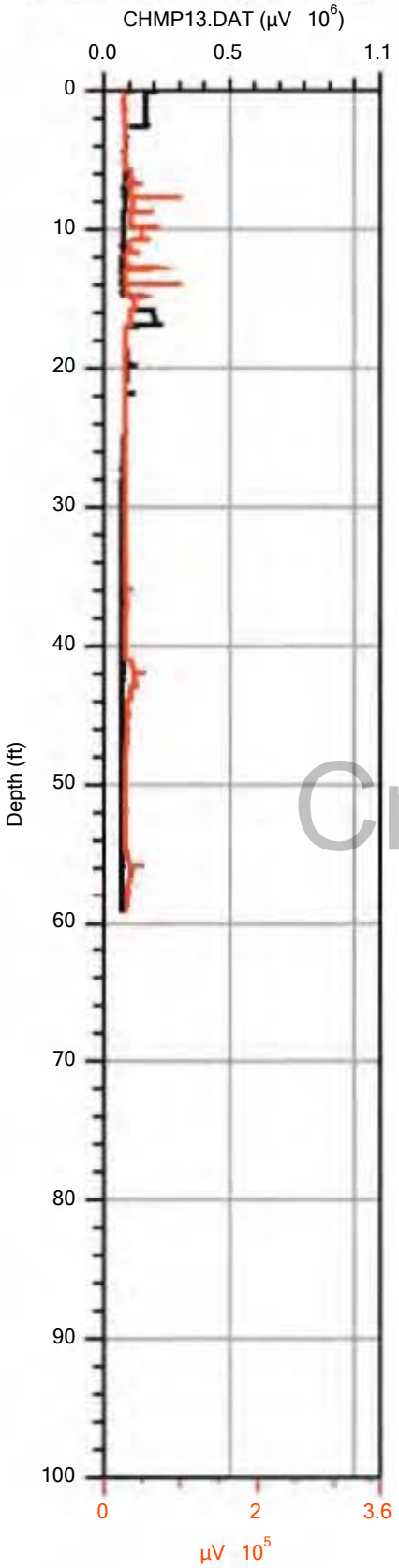
CHMP11.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

CHMP12.DAT 1/22/2009
0° 0′ 0″, 76° 33′ 52″ W

ECD Max / PID Max

Company: ZEBRA Environmental	Operator: John Diamond
Project ID: NWS Yorktown VA	Client: CH2M Hill

CH2MHILL



Cross Section
Site3

CH2MHILL

ECD Max / PID Max

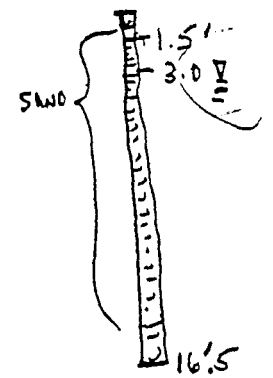
Company: ZEBRA Environmental	Operator: John Diamond	File: CHMP13.DAT
Project ID: NWS Yorktown VA	Client: CH2M Hill	Date: 1/23/2009
		Location: 0° 0′ 0″, 76° 33′ 49″ W

Appendix B
Boring Logs and Well Diagrams

Site 1

Dames & Moore

LOCATION OF BORING



DATUM ELEVATION

JOB NO.	CLIENT	LOCATION
13542	LANTDIV - US NAVY	NWS - Yorktown VA

DRILLING METHOD: Acker AN MC 55 7¾" HSA

BORING NO. 1GW04

SHEET 1 OF 1

SAMPLING METHOD: 2" split spoon

DRILLING

				START	FINISH
WATER LEVEL	3.3.5'			TIME 14:15	TIME 16:30
TIME	16:00				
DATE	1-7-86			DATE 1-7-86	DATE 1-7-86
CASING DEPTH					

DRILLING CONTR. _____ BY _____ DATE _____ CHK'D BY _____

No. 28408

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS:
				1		0		clean poorly sorted (well graded) fine to coarse sand, LOOSE
				2 2 (4)		1		
				1 1		2	SP	Brown silty well graded fine to med sand
				1 2 (3)		3		saturated
				1 1 (1)		4		silty poorly sorted fine to med sands, LOOSE
						5	SM	
						6		
						7		
						8		
						9		
				4 4 (9)		10	SC	grey-green clayey fine sand, LOOSE
				5		11		
						12		
						13		
						14		
				4 5 (13)		15		
				7		16	SP	grey-green shelly med and fine sand MEDIUM DENSE
						17		
						18		
						19		
						20		

888.1 (3) (REV. 11-85)

Baker

Baker Environmental

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation,
PROJ. NO.: CTO 102 BORING NO.: 1GW04A
COORDINATES: EAST: 2562919.6 NORTH: 342881.34
ELEVATION: SURFACE: TOP OF PVC CASING 9.36

Rig: BLF-150 MiniSonic	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	--	8"	--	--	05/11/2000	18		
Length	--	--	--	--	05/12/2000	24		
Type	--	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks: (1) Based on log for 1GW04, lithology known and boring advanced without split spoon sampling, except when determining where to set the 10" steel casing.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

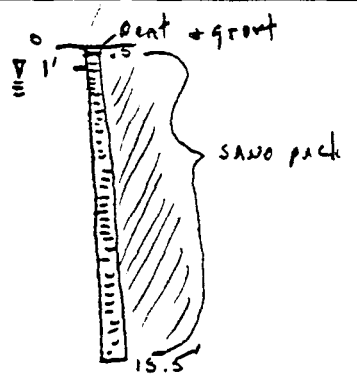
Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC riser	2 in	0	32 ft
Sch 40 .010 Slot Screen	2 in	32 ft	42 ft

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1		(1)			BKG= 0.0ppm			-1.00
2					0		cement bentonite grout	
3								
4								
5	A-N							
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: Parrot Wolfe BAKER RE Dave Martin
DRILLER: Jim Lansing BORING N 1GW04A SHEET 1 OF 3

Dames & Moore

LOCATION OF BORING



JOB NO.	CLIENT	LOCATION
13542	LANTDIV - US. NAVY	NWS - Yorktown VA

DRILLING METHOD: NC 45 7¾ H.S.A. NW

BORING NO. 1GW05

SHEET 1 OF 1

SAMPLING METHOD: 24" split spoon

DRILLING

					START	FINISH
WATER LEVEL	1.0'				TIME 13:15	TIME 14:20
TIME	14:00				DATE 12-11-85	DATE 12-11-85
DATE	12-11-85					
CASING DEPTH	15'5"					

DATUM ELEVATION

DRILLING CONTR. No. 28451

BY DATE CHK'D BY

SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
				3 4 4 (8)		0	
				5 6 6 (12)		2	SP
				4 3 3 (6)		4	
				2 2 3 (5)		10	ML/SM
				3 3 5 (8)		15	ML

TAN silty uniform med SAND - saturated, LOOSE

white-grey fine SAND - V. UNIFORM - dark mineral heavy present - saturated, MEDIUM DENSE

orange to brown, uniform fine SAND w/ dark heavy minerals present, LOOSE

dk green-grey clayey silt to fine SAND, MEDIUM STIFF

grey green w/ brown mottling clayey SILT, STIFF

Baker

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TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Yorktown Naval Weapon Station - Well Installation,
PROJ. NO.: CTO 102 BORING NO.: 1GW05A
COORDINATES: EAST: 2563183.6 NORTH: 343041.69
ELEVATION: SURFACE: TOP OF PVC CASING: 37.83

Rig: BLF-150 MiniSonic	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	--	8"	--	--	05/10/2000	22		
Length	--	--	--	--	05/11/2000	50		
Type	--	--	--	--				
Hammer Wt.	--	--	--	--				
Fall	--	--	--	--				

Remarks: (1) Based on log for 1GW05, lithology known and boring advanced without split spoon sampling, except when determining where to set the 10" steel casing.

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Diam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Schedule 40 PVC riser	2 in	0	62 ft
Sch 40 .010 Slot Screen	2 in	62 ft	72 ft

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								-1.00
2	A-N						cement bentonite grout	
3								
4							10-inch steel casing	
5								
6	S-1		2 3			Orange, moist to wet, medium SAND, little silt		
7			2 1					
8								
9								
10								
	S-2		2			Match to Sheet 2		

DRILLING CO.: Parrot Wolfe BAKER REP.: Marlene Ivester (first 22') and Dave Martin (<22')
DRILLER: Jim Lansing BORING NO.: 1GW05A SHEET 1 OF 5

Borehole Location Data **ROY F. WESTON, Inc.**

BOREHOLE ID : 1GW12 SITE NAME/NO: WPNSTA YORKTOWN
BEGIN DATE : 06/10/92 END DATE : 06/10/92

LOGGER/COMPANY : W. BREW

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) :

TOTAL DEPTH : 14.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA FLUID :
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : HARDIN-HUBER
DRILLER : ROYCE KEENAN
DRILL RIG TYPE : B-61

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	42.500
N. COORDINATE :	0.0000	343136.0000
E. COORDINATE :	0.0000	2562505.0000

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N TYPE DEPTH
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: Y
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

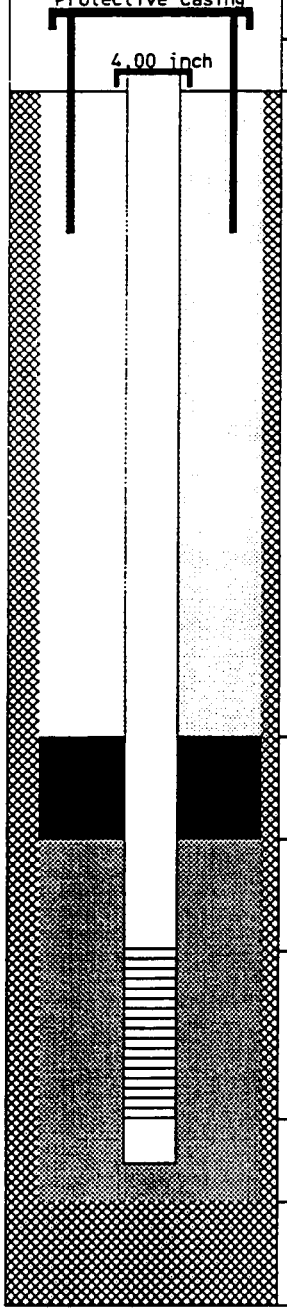
NWS-00313-03.13-07/01/93

Well Completion Summary — *ROY F. WESTON, Inc.*

CLIENT	WPNSTA YORKTOWN	*DRILLING FIRM*	HARDIN-HUBER
SITE NAME	WPNSTA YORKTOWN	*INSPECTOR*	W. BREW

WELL ID	1GW12
START DATE	06/10/92
COMPLETION DATE	06/10/92

WATER LEVELS
6.20 FT (TOC) ON 07/15/92



DEPTH		*ELEV.*
2.50	*TC*	45.00
0.00	*GS*	42.50
2.00	*BN*	40.50
3.00	*SP*	39.50
4.00	*SC*	38.50
14.00	*BS*	28.50
14.00	*TD*	28.50

DRILLING SUMMARY

Driller ROYCE KEENAN
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 4.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.50 *ft.* *Protective Casing:* 0.00 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 2.00 *ft.*

Seal Type: BENTONITE PELLETS *Interval:* 2.00 to 3.00 *ft.*

Sand Pack Type : #2 SAND *Interval:* 3.00 to 14.00 *ft.*
Grain Size : UNIFORM *Median Diameter:*
Screen Diameter: 4.00 *Interval:* 4.00 to 14.00 *ft.*
Type : PVC *Slots:* .020 *inches*

Silt Trap Interval: 0.00 to 0.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date / /
Method
Yield *Purged Volume*

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

01/06/93

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT	:	WPNSTA YORKTOWN	TOTAL DEPTH	:	14.00
SITE NAME	:	WPNSTA YORKTOWN	LOGGER	:	W. BREW
WELL ID	:	1GW12	DRILLING COMPANY	:	HARDIN-HUBER
NORTHING	:	343136.0000 surveyed	DRILLING RIG	:	B-61
EASTING	:	2562505.0000 surveyed	DATE STARTED	:	06/10/92
ELEVATION	:	42.500 surveyed	DATE COMPLETED	:	06/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			65	Fill	DK YLLWISH BRN	SFT	MST	2 1 1 1	OVA 0.0	
41	1									
40	2		10	Fill	DK YLLWISH BRN	SFT	MST	3 3 4 3	OVA 0.0	
39	3									
38	4		60	Fill	BROWNISH YELLOW	LSE	MST	2 4 3 6	OVA 0.0	0.2' piece of wood in spoon OVA = 3 units.
37	5									
36	6		85	Fill	BROWNISH YELLOW	LSE	MST	5 7 9 8	OVA 0.0	
35	7			Silty sand, SM	YLLWISH BROWN	SFT	WET		OVA 0.0	
34	8		75	Silty sand, SM	YELLOWISH BROWN	SFT	WET	3 6 4 4	OVA 0.0	
33	9			Poorly graded sand with silt, SP-SM	LT GRAY	SFT	WET		OVA 0.0	
32	10		80	Poorly graded sand with silt, SP-SM	LT GRAY	SFT	WET	1 3 2 2	OVA 0.0	

Borehole Log

ROY F. WESTON, Inc.

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	14.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	W. BREW
WELL ID :	1GW12	DRILLING COMPANY :	HARDIN-HUBER
NORTHING :	343136.0000 surveyed	DRILLING RIG :	B-61
EASTING :	2562505.0000 surveyed	DATE STARTED :	06/10/92
ELEVATION :	42.500 surveyed	DATE COMPLETED :	06/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	LT GRAY	SFT	WET		OVA 0.0	
31	11			Silty sand, SM		SFT	WET		OVA 18.2	
30	12		95	Silty sand, SM		SFT	WET	2 3 4 6	OVA 0.0	
29	13			Silty sand, SM		FRM	WET		OVA 0.0	
28	14		90	Silty sand, SM		FRM	WET	3 4 WOH 4		
27	15			Sandy lean clay, CL		FRM	MST		OVA 0.0	
26	16									
25	17									
24	18									
23	19									
22	20									

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
1GW12	1	1	0.00	2.00	SPS		0	F	40	50	10	0		MOD	POR	SFT	MST	
1GW12	2	1	2.00	4.00	SPS		0	F	40	50	10	0		MOD	POR	SFT	MST	
1GW12	3	1	4.00	6.00	SPS		0	F	90	10	0	0			MOD	LSE	MST	
1GW12	4	1	6.00	7.10	SPS		0	F	90	10	0	0			MOD	LSE	MST	
1GW12	4	2	7.10	8.00	SPS		0	F	80	20	0	0			MOD	SFT	WET	
1GW12	5	1	8.00	9.00	SPS		0	F	80	20	0	0			MOD	SFT	WET	
1GW12	5	2	9.00	10.00	SPS		0	F	90	10	0	0			MOD	SFT	WET	
1GW12	6	1	10.00	10.70	SPS		0	F	90	10	0	0			MOD	SFT	WET	
1GW12	6	2	10.70	12.00	SPS		0	F	85	15	0	0			MOD	SFT	WET	
1GW12	7	1	12.00	12.80	SPS		0	F	85	15	0	0			MOD	SFT	WET	
1GW12	7	2	12.80	14.00	SPS		0	F	50	50	0	0		MOD		FRM	WET	
1GW12	8	1	14.00	14.80	SPS		0	F	50	50	0	0		MOD		FRM	WET	
1GW12	8	2	14.80	16.00	SPS		0		40	20	40	0		MOD		FRM	MST	

NWS-00313-03.13-07/01/93

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB12A
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 41.4 TOP OF PVC CASING: 43.34

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)		10"			1-24-96	13ft	Rain 65°	3	1620
LENGTH		13'			1-26-96	52ft	Cold 30°		
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	2"	PVC	+2.5	49.5
Screen	2"	PVC 0.01"	49.5	64.5

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	S-00 / 1					(* SAMPLE 1SB12A-00 collected)	Locking cover	Protective
2	S-1 / 3	1.0 / 50%	1 1 2 2		0.4	(*SAMPLE 1SB12A-01, MS/MSD and dup. collected. SAND, fine to coarse little SILT, brown to		Cement / Bent grout
3								
4	S-2 / 5	1.0 / 50%	3 3 6 7		0.4	Dark Brown, moist wet at 3ft.		Sch 40 PVC Riser
5								
6	S-3 / 7	1.0 / 50%	3 4 5 7		0.5	SAND, fine to medium, trace SILT, lt. Brown stained orange, wet		
7								10" Casing
8	S-4 / 9	1.0 / 50%	4 5 7 5		0.5	Color change to Gray.		
9								
10	S-5 / 11	2.0 / 100%	1 2 1 2		0.4	CLAY and SILT Lt. Brown, damp		

Match to Sheet 2

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB12A SHEET 1 OF 2

Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: ISB12A

SAMPLE TYPE
S = Split Spoon, T = Shelby Tube, R = Air Rotary, D = Denison, N = No Sample
A = Auger, W = Wash, C = Core, P = Piston

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11	11					Continued from Sheet 1		
12	S-6	2.0 100%	2 WOH WOH		0.3	CLAY and SILT, Lt. Brown, damp	10" Casing	
13	13		3					
14	S-7	1.5 75%	2 3 6 6		0.2	SILT and CLAY, trace fine SAND, Grayish Blue, damp,	Cement/Bent grout	
15	15							
16	S-8	1.5 75%	WOH WOH 3 6		0.2		Sch 40 Riser	
17	17							
18	S-9	1.5 75%	4 6 7 8		0.2			
19	19							
20	S-10	1.5 75%	3 3 4 5		0.2			
21	21							
22	S-11	1.75 75%	4 4 5 4		0.2	SILT and CLAY, trace fine SAND, 2" shell hash layer, Gray with brown organics, dry		
23	23							
24	S-12	1.5 75%	WOH WOH 7 6		0.2			
25	25							
26	S-13	1.75 85%	4 4 4 8		0.2	SILT Some CLAY, little Shell fragments, trace fine SAND, Light brown moist Gravel		
27	27							
28	S-14	0.5 25%	3 WOH WOH WOH		0.2			
29	29							
30	31	S-15	2.0 100%	4 4 4 5		0.2		

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: ISB12A SHEET 2 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB12A

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description
31						Continued from Sheet 1
31						
2	S-16	1.0		WOH WOH 5 4	0.2	SILT some CLAY, trace fine SAND, little Shell fragments, lt. Gray/wet
33		50%				
4	S-17	1.5		WOH WOH 4 5	0.2	
35		75%				
6	S-18	1.75		WOH WOH 4 6	0.2	
37		85%				
8	S-19	1.75		4 6 11 12	0.2	
39		85%				
40	S-20	1.5		WOH 10 11 13	0.2	
41		75%				
2	S-21	1.5			0.2	
43		75%				
4	S-22	1.5		9 9 11 12	0.2	
45		75%				
6	S-23	1.0		13 22 32	0.2	
47		50%				
8	S-24	1.5		12 23 32 36	0.2	
49		75%				
50	S-25	1.5		22 32	0.2	
51		75%				

Well Installation Detail: Cement/Bentonite grout; Bent Slurry Seal; sch 40 PVC Riser; 0.01 SLOT pvc screen

Elevation (ft. MSL)

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB12A SHEET 3 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB12A

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
51						Continued from Sheet 1		
2	S-26	1.5	12 17		0.2	SILT some CLAY trace fine SAND, little Shell fragments, Lt Gray, wet		
3	53	75%	17 23					
4	S-27	1.5	29 22		0.2			
5	55	75%	27 26					
6	S-28	1.0	10 15		0.2	SILT and SAND, fine to medium, trace Shell fragments, Gray to Brown wet		
7	57	75%	24 18					
8	S-29	2.0	26 28		0.2		Silica Sand Pack	
9	59	100%	36 28					
60	S-30	1.5	17 16		0.1			
1	61	75%	15 12				0.01" Slot PVC Screen	
2	S-31	1.5	7 9		0.1			
3	63	75%	9			SILT some fine SAND, trace CLAY, trace Shell fragments, Dark Gray damp		
4	S-32	2.0	Shelby Tube collected.					
5	65	100%					Caved Soil	
6								
7								
8								
9								
70								

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB12A SHEET 4 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB12B
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: 40.70 TOP OF PVC CASING: 41.48

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)		10"			1-27-96	13	Rain 60°		
LENGTH		13'			1-29-96	25			
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	2"	Sch 40	+2.5	28
Screen	2"	0.01" SLOT	28	38

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1						(* See 1SB12A log for soil descriptions)	Locking Protective Cover	
2							10" casing	
3								
4							Sch 40 PVC Riser	
5								
6								
7								
8								
9								
10								

Match to Sheet 2

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB12B SHEET 1 OF 2

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB12B

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11						Continued from Sheet 1		
12							10" Casing	
13								
14								
15								
16								
17								
18								
19								
20								
21							Cement/Be grout	
22								
23								
24							Bent Slurry Seal	
25								
26							Sch 40 PVC Riser	
27								
28								
29							0.01" SLOT Screen	
30								

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB12B SHEET 2 OF

Baker
Baker Environmental, Inc.

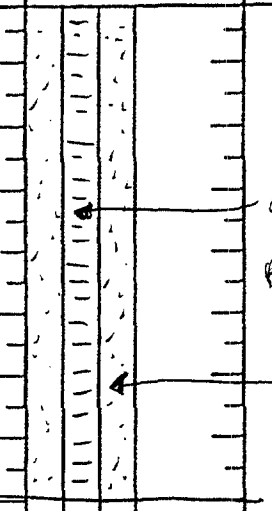
TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB12B

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
31						Continued from Sheet 1		
2								
3								
4								
5								
6								
7								
8								
9						END OF BORING at 38 ft.		
40								
1								
2								
3								
4								
5								
6								
7								
8								
9								
50								



DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB12B SHEET 3 OF

Borehole Location Data **ROY F. WESTON, Inc.**

BOREHOLE ID : 1GW13 SITE NAME/NO: WPNSTA YORKTOWN
BEGIN DATE : 06/10/92 END DATE : 06/10/92

LOGGER/COMPANY : W. BREW

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : HARDIN-HUBER
DRILLER : ROYCE KEENAN
DRILL RIG TYPE : B61

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	40.700
N. COORDINATE :	0.0000	343392.0000
E. COORDINATE :	0.0000	2563140.0000

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N TYPE DEPTH
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: Y
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

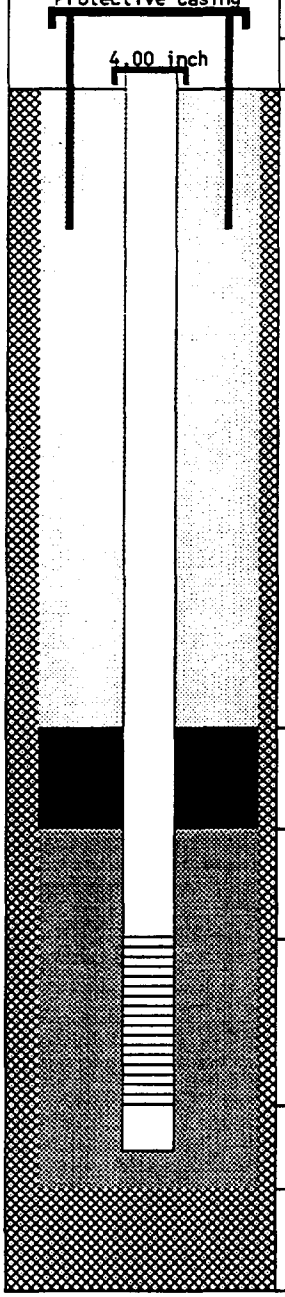
NWS-00313-03.13-07/01/93

Well Completion Summary — *ROY F. WESTON, Inc.*

CLIENT	WPNSTA YORKTOWN	*DRILLING FIRM*	HARDIN-HUBER
SITE NAME	WPNSTA YORKTOWN	*INSPECTOR*	W. BREW

WELL ID	1GW13
START DATE	06/10/92
COMPLETION DATE	06/10/92

WATER LEVELS



DEPTH		*ELEV.*
2.50	*TC*	43.20
0.00	*GS*	40.70
2.00	*BN*	38.70
3.00	*SP*	37.70
4.00	*SC*	36.70
14.00	*BS*	26.70
14.00	*TD*	26.70

DRILLING SUMMARY

Driller ROYCE KEENAN
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 4.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.50 *ft.* *Protective Casing:* 0.00 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 2.00 *ft.*

Seal Type: BENTONITE *Interval:* 2.00 to 3.00 *ft.*

Sand Pack Type : #2 *Interval:* 3.00 to 14.00 *ft.*
Grain Size : UNIFORM *Median Diameter:* 2-3
Screen Diameter: 4.00 *Interval:* 4.00 to 14.00 *ft.*
Type : PVC *Slots:* .020 *inches*

Silt Trap Interval: 0.00 to 0.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date / /
Method
Yield *Purged Volume*

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

01/06/93

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH	: 16.00
SITE NAME : WPNSTA YORKTOWN		LOGGER	: W. BREW
WELL ID : 1GW13		DRILLING COMPANY	: HARDIN-HUBER
NORTHING : 343392.0000 surveyed		DRILLING RIG	: B61
EASTING : 2563140.0000 surveyed		DATE STARTED	: 06/10/92
ELEVATION : 40.700 surveyed		DATE COMPLETED	: 06/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			65	Silty sand, SM	YELLOWISH BROWN	SFT	MST	2 2 5		
39	1									
38	2		90	Silty sand, SM	YELLOWISH BROWN	SFT	MST	4 6 6 5		
37	3									
36	4		70	Silty sand, SM	YELLOWISH BROWN	SFT	MST	2 5 6 6		
35	5			Poorly graded sand, SP	PALE BROWN	SFT	WET			
34	6		85	Poorly graded sand, SP	PALE BROWN	SFT	WET	4 5 5 4		
				Silty sand, SM	YELLOWISH BROWN	LSE	WET			
33	7									
32	8		80	Silty sand, SM	YELLOWISH BROWN	LSE	WET	2 2 2 2		
31	9			Silty sand, SM	PALE BROWN	FRM	WET			
30	10		85	Silty sand, SM	PALE BROWN	FRM	WET	1 2 1 1		

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	16.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	W. BREW
WELL ID :	1GW13	DRILLING COMPANY :	HARDIN-HUBER
NORTHING :	343392.0000 surveyed	DRILLING RIG :	B61
EASTING :	2563140.0000 surveyed	DATE STARTED :	06/10/92
ELEVATION :	40.700 surveyed	DATE COMPLETED :	06/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	PALE BROWN	FRM	WET			
29	11									
				Silty sand, SM		FRM	WET			
28	12		90	Silty sand, SM		FRM	WET	1 2 3 3		
27	13									
26	14		90	Sandy lean clay, CL		FRM	MST	2 3 3 2	OVA 0.0	Same lith unit as above except gradational changes with depth.
25	15									
24	16									
23	17									
22	18									
21	19									
20	20									

DATE: 12/08/92 **** LITHOLOGICAL DATA FOR - CLIENT ID: BAKER *** PAGE: 15

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
1GW13	1	1	0.00	2.00	SPS		0	F	85	15	0	0			MOD	SFT	MST	
1GW13	2	1	2.00	4.00	SPS		0	F	85	15	0	0			MOD	SFT	MST	
1GW13	3	1	4.00	5.00	SPS		0	F	85	15	0	0			MOD	SFT	MST	
1GW13	3	2	5.00	6.00	SPS		0	F	95	5	0	0			MOD	SFT	WET	
1GW13	4	1	6.00	6.20	SPS		0	F	95	5	0	0			MOD	SFT	WET	
1GW13	4	2	6.20	8.00	SPS		0	F	75	25	0	0			MOD	LSE	WET	
1GW13	5	1	8.00	9.10	SPS		0	F	75	25	0	0			MOD	LSE	WET	
1GW13	5	2	9.10	10.00	SPS		0	F	85	15	0	0		LOW		FRM	WET	
1GW13	6	1	10.00	11.80	SPS		0	F	85	15	0	0		LOW		FRM	WET	
1GW13	6	2	11.80	12.00	SPS		0	F	60	35	5	0		LOW		FRM	WET	
1GW13	7	1	12.00	14.00	SPS		0	F	60	35	5	0		LOW		FRM	WET	
1GW13	8	1	14.00	16.00	SPS		0	F	30	30	40	0		MOD		FRM	MST	

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB13A
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)		10"			1-25-96	13 ft	Rain 60	4-5	1030
LENGTH		13'			1-28-96	62	Clear 50		
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS: * No HNu due to rain

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	2"	Sch 40 PVC	+2.5	60
Screen	2"	0.01" slot	60	75

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	S-00					(* SAMPLE COLLECTED 1SB13A-00)	Locking Protective Cover	
2	S-1	2.0 100%	5 7 9 9		0.3	(* SAMPLE COLLECTED 1SB13A-01) SAND, fine to coarse little SILT, dark brown, moist	Sch 40 PVC Riser	
3						wet at 4 ft.		
4	S-2	2.0 100%	5 5 7 7		0.3		Cement/Bentonite Grout	
5								
6	S-3	2.0 100%	8 11 11 13		0.3	SAND, fine to coarse, some SILT, brown, wet		
7								
8	S-4	2.0 100%	7 8 11 13		0.3			
9								
10	S-5	2.0 100%	WOH 1 2 WOH		0.3			

Match to Sheet 2

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB13A SHEET 1 OF 2

Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB13A

SAMPLE TYPE
S = Split Spoon, T = Shelby Tube, R = Air Rotary, D = Denison, N = No Sample
A = Auger, W = Wash, C = Core, P = Piston

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11						Continued from Sheet 1		
12	S-06	2.0				SILT little SAND, trace CLAY, gray, moist		10" Casing
13	13	100%				Shelby Tube collected		Sch 40 PVC Riser
14	S-07	2.0	WOH		*	SILT, some fine SAND, some CLAY, Brown to Gray, moist		
15	15	100%						Cement/Bentonite
16	S-08	2.0	WOH					
17	17	80%						
18	S-09	1.75	WOH					
19	19	85%						
20	S-10	1.75	WOH			CLAY trace SILT, trace fine SAND, Gray to dark Brown, damp		
21	21	85%						
22	S-11	1.75	WOH					
23	23	85%						
24	S-12	1.75	WOH					
25	25	85%				SILT some to little CLAY trace fine SAND, dark gray, moist		
26	S-13	2.0	WOH			SILT little CLAY, Dark Gray, damp to dry		
27	27	100%						
28	S-14	2.0	WOH					
29	29	100%				SILT some Shell fragments, Brownish Red, iron stain, dry		
30	S-15	2.0	4/6/8/8			SILT and shell fragments, trace CLAY, trace fine SAND, Gray to brown wet.		
	31	100%						

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB13A SHEET 2 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB13A

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
31						Continued from Sheet 1		
32 33	S-16	2.0 100%	8 6 10 11		*	SILT and to little Shell fragments trace CLAY, trace fine SAND, trace decomposed shells, Gray, wet		
34 35	S-17	2.0 100%	3 5 7 9		0.0			
36 37	S-18	2.0 100%	7 6 5 6		0.0			
38 39	S-19	2.0 100%	3 4 5 3		0.0			
40 41	S-20	2.0 100%	3 2 3 5		0.0	SILT and fine SAND trace CLAY, trace Shell frags. partially decomposed, Gray, wet		
42 43	S-21	1.0 50%	5 10 12 12		0.0			
44 45	S-22	1.5 75%	8 16 18 26		0.0			
46 47	S-23	1.75 85%	9 14 19 33		*	SILT and fine to medium SAND, trace Shell frags. Gray, wet		
48 49	S-24	1.5 75%	22 31 45 56					
50 51	S-25	1.75 85%	9 12 23			SAND, fine and Silt trace Shells, Gray to dark Gray, wet		

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB13A SHEET 3 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB13A

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
51						Continued from Sheet 1		
2	S-26	1.75	6 9 23 29		*	SAND, fine and SILT trace decomposed Shells, Gray to dark gray, wet		
3 53		85%						
4	S-27	1.75	14 20 17 27				Cement/Bentonite grout	
5 55		85%						
6	S-28	1.75	10 20 19 37				Bent. Slurry Seal	
7 57		85%						
8	S-29	2.0	7 20 42 50				Sch 40 PVC Riser	
9 59		100%						
60	S-30	2.0	15 11 5					
1 61		100%				SILT and fine SAND trace to NO CLAY, trace Shell frags. DK. Gray to Gray damp to wet		
2	S-31	2.0	11 9 11 17					
3 63		50%					Silica Sand Pack	
4	S-32	1.0	3 4 6 7					
5 65		100%					0.010" SLOT PVC Screen	
6	S-33	1.0	6 8 11 14					
7 67		100%						
8	S-34	1.0	7 14 19					
9 69		100%						
70 71	S-35	1.75 85%	6 8 9					

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB13A SHEET 4 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Land fill Site 1
CTO NO.: 318 BORING NO.: ISB13A

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1						Continued from Sheet 1		
2	S-36	1.75 / 85%	12, 14, 20, 22		7	SILT and fine SAND, trace shell fragments dk gray to gray, wet	Silica SAND Pack	
3	73							
4	S-37	1.75 / 85%	15, 25, 50, 30				0.01" SLOT PVC SCREEN	
5	75							
6						END OF BORING @ ± 75 ft.		
7								
8								
9								
0								
1								
2								
3								
4								
5								
6								
7								
8								
9								
0								

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: ISB13A SHEET OF

Borehole Location Data — *ROY F. WESTON, Inc.*

BOREHOLE ID : 1GW14 SITE NAME/NO: WPNSTA YORKTOWN
BEGIN DATE : 06/09/92 END DATE : 06/09/92

LOGGER/COMPANY : W. BREW

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 16.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 16.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : HARDIN-HUBER
DRILLER : ROYCE KEENAN
DRILL RIG TYPE : B61

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	44.800
N. COORDINATE :	0.0000	343412.0000
E. COORDINATE :	0.0000	2562286.0000

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N TYPE DEPTH
PURGE : 0.00
SAMPLE : 0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: Y
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

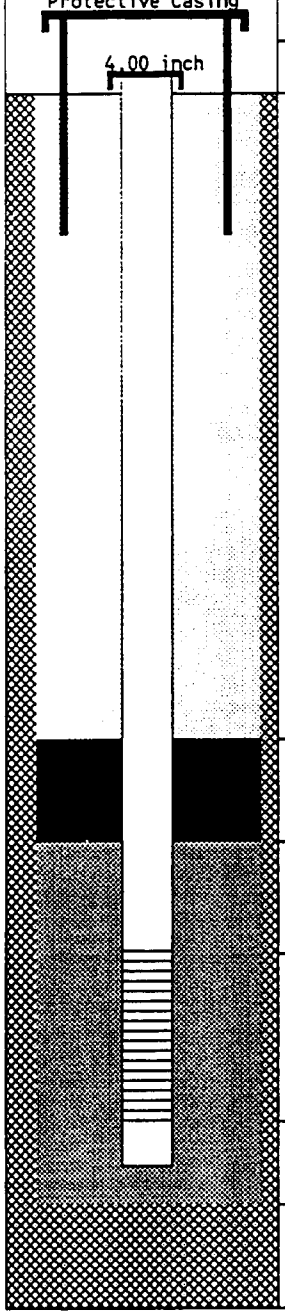
NWS-00313-03.13-07/01/93

Well Completion Summary — *ROY F. WESTON, Inc.*

CLIENT	WPNSTA YORKTOWN	*DRILLING FIRM*	HARDIN-HUBER
SITE NAME	WPNSTA YORKTOWN	*INSPECTOR*	W. BREW

WELL ID	1GW14
START DATE	06/09/92
COMPLETION DATE	06/09/92

WATER LEVELS



DEPTH		*ELEV.*
2.50	*TC*	47.30
0.00	*GS*	44.80
3.00	*BN*	41.80
4.00	*SP*	40.80
5.00	*SC*	39.80
15.00	*BS*	29.80
15.00	*TD*	29.80

DRILLING SUMMARY

Driller ROYCE KEENAN
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 5.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.50 *ft.* *Protective Casing:* 0.00 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 3.00 *ft.*

Seal Type: BENTONITE *Interval:* 3.00 to 4.00 *ft.*

Sand Pack Type : #2 *Interval:* 4.00 to 15.00 *ft.*
Grain Size : UNIFORM *Median Diameter:*
Screen Diameter: 4.00 *Interval:* 5.00 to 15.00 *ft.*
Type : PVC *Slots:* .020 *inches*

Silt Trap Interval: 0.00 to 0.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date / /
Method
Yield *Purged Volume*

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

01/06/93

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	16.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	W. BREW
WELL ID :	1GW14	DRILLING COMPANY :	HARDIN-HUBER
NORTHING :	343412.0000 surveyed	DRILLING RIG :	B61
EASTING :	2562286.0000 surveyed	DATE STARTED :	06/09/92
ELEVATION :	44.800 surveyed	DATE COMPLETED :	06/09/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			90	Silty sand, SM	V. DK BROWN	LSE	MST	2 2 2 2 4	OVA 0.0	
				Silty sand, SM	YELLOWISH BROWN	LSE	MST		OVA 0.0	
43	1									
42	2		60	Poorly graded sand, SP	YELLOWISH BROWN	LSE	MST		OVA 0.0	
41	3									
40	4		60	Poorly graded sand, SP	YELLOWISH BROWN	LSE	MST	5 8 10 9	OVA 0.0	
39	5									
38	6		65	Poorly graded sand, SP	YELLOWISH BROWN	LSE	MST	6	OVA 0.0	
				Poorly graded sand, SP	PALE BROWN	LSE	WET	7 7 9	OVA 0.0	
37	7									
36	8			No Sample Recovered				3 3 3 3		
35	9									
34	10		75	Poorly graded sand with silt, SP-SM	PALE BROWN	LSE	WET	2 4 5 5	OVA 0.0	

Borehole Log

ROY F. WESTON, Inc.

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH : 16.00	
SITE NAME : WPNSTA YORKTOWN		LOGGER : W. BREW	
WELL ID : 1GW14		DRILLING COMPANY : HARDIN-HUBER	
NORTHING : 343412.0000 surveyed		DRILLING RIG : B61	
EASTING : 2562286.0000 surveyed		DATE STARTED : 06/09/92	
ELEVATION : 44.800 surveyed		DATE COMPLETED : 06/09/92	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	PALE BROWN	LSE	WET		OVA 0.0	
33	11			Poorly graded sand with silt, SP-SM	V. DK GRYSH BRN	SFT	WET		OVA 0.0	
32	12		85	Poorly graded sand with silt, SP-SM	V DK GRYSH BRN	SFT	WET	3 2 1 2	OVA 0.0	
31	13									
30	14		95	Poorly graded sand with silt, SP-SM	V DK GRYSH BRN	SFT	WET	1 2 2 3	OVA 0.0	
29	15			Lean clay, CL	V DK GRYSH BRN	FRM	DRY		OVA 0.0	
28	16									
27	17									
26	18									
25	19									
24	20									

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
1GW14	1	1	0.00	0.50	SPS		0	F	80	0	0	20			MOD	LSE	MST	
1GW14	1	2	0.50	2.00	SPS		0	MF	90	0	0	20			MOD	LSE	MST	
1GW14	2	1	2.00	4.00	SPS		0	MF	90	0	0	0			MOD	LSE	MST	
1GW14	3	1	4.00	6.00	SPS		0	MF	90	0	0	0			MOD	LSE	MST	
1GW14	4	1	6.00	6.10	SPS		0	MF	90	0	0	0			MOD	LSE	MST	
1GW14	4	2	6.10	8.00	SPS	F	10	MF	85	5	0	0			MOD	LSE	WET	
1GW14	5	1	8.00	10.00	SPS		0		0	0	0	0						
1GW14	6	1	10.00	11.00	SPS		0	F	90	10	0	0			MOD	LSE	WET	
1GW14	6	2	11.00	12.00	SPS		0	F	90	10	0	0			MOD	SFT	WET	
1GW14	7	1	12.00	14.00	SPS		0	F	90	10	0	0			MOD	SFT	WET	
1GW14	8	1	14.00	15.00	SPS		0	F	90	10	0	0			MOD	SFT	WET	
1GW14	8	2	15.00	16.00	SPS		0	VF	5	5	90	0		MOD		FRM	DRY	

NWS-00313-03.13-07/01/93

Borehole Location Data — *ROY F. WESTON, Inc.*

BOREHOLE ID : 1GW17 SITE NAME/NO: WPNSTA YORKTOWN
BEGIN DATE : 06/10/92 END DATE : 06/10/92

LOGGER/COMPANY : W. BREW

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 14.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 14.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : HARDIN-HUBER
DRILLER : ROYCE KEENEN
DRILL RIG TYPE : B61

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	38.900
N. COORDINATE :	0.0000	343645.0000
E. COORDINATE :	0.0000	2652670.0000

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: Y
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

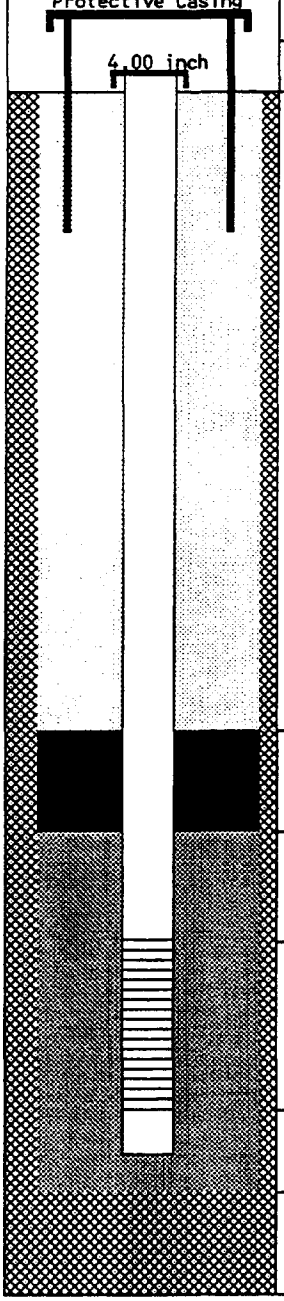
COMMENTS :

Well Completion Summary **ROY F. WESTON, Inc.**

CLIENT	WPNSTA YORKTOWN	*DRILLING FIRM*	HARDIN-HUBER
SITE NAME	WPNSTA YORKTOWN	*INSPECTOR*	W. BREW

WELL ID	1GW17
START DATE	06/10/92
COMPLETION DATE	06/10/92

WATER LEVELS



DEPTH		*ELEV.*
2.50	*TC*	41.40
0.00	*GS*	38.90
0.50	*BN*	38.40
1.00	*SP*	37.90
2.00	*SC*	36.90
12.00	*BS*	26.90
12.00	*TD*	26.90

DRILLING SUMMARY

Driller ROYCE KEENAN
Drilling Fluid NONE
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 2.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.50 *ft.* *Protective Casing:* 0.00 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 0.50 *ft.*

Seal Type: BENTONITE *Interval:* 0.50 to 1.00 *ft.*

Sand Pack Type : #2 *Interval:* 1.00 to 12.00 *ft.*
Grain Size : UNIFORM *Median Diameter:* 2.3
Screen Diameter: 4.00 *Interval:* 2.00 to 12.00 *ft.*
Type : PVC *Slots:* .020 *inches*

Silt Trap Interval: 0.00 to 0.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date / /
Method
Yield *Purged Volume*

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

01/06/93

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH	: 14.00
SITE NAME : WPNSTA YORKTOWN		LOGGER	: W. BREW
WELL ID : 1GW17		DRILLING COMPANY	: HARDIN-HUBER
NORTHING : 343645.0000 surveyed		DRILLING RIG	: B61
EASTING : 2652670.0000 surveyed		DATE STARTED	: 06/10/92
ELEVATION : 38.900 surveyed		DATE COMPLETED	: 06/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
			80	Poorly graded sand with silt, SP-SM	DK REDDISH BRN	SFT	MST	3 2 2 2	OVA 0.0	
37	1									
36	2		85	Poorly graded sand with silt, SP-SM	DK REDDISH BRN	SFT	MST	3 6 7 1	OVA 0.0	
35	3			Poorly graded sand with silt, SP-SM	DK REDDISH BRN	SFT	WET		OVA 0.0	Ion stained
				Poorly graded sand with silt, SP-SM	PALE BROWN	LSE	WET		OVA 0.0	
34	4		80	Poorly graded sand with silt, SP-SM	PALE BROWN	LSE	WET	2 3 3 2	OVA 0.0	
33	5			Silty sand, SM	PALE BROWN	LSE	WET		OVA 0.0	
32	6		75	Silty sand, SM	PALE BROWN	LSE	WET	3 6 3 4	OVA 0.0	
				Poorly graded sand, SP	V. DK GRAY	LSE	WET		OVA 0.0	
31	7									
30	8		90	Poorly graded sand, SP	V. DK GRAY	LSE	WET	3 3 4 3	OVA 0.0	
29	9			Silty sand, SM	V. DK GRAY	SFT	WET		OVA 0.0	
28	10		90	Silty sand, SM	V. DK GRAY	SFT	WET	2 2 2 1	OVA 0.0	

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	14.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	W. BREW
WELL ID :	1GW17	DRILLING COMPANY :	HARDIN-HUBER
NORTHING :	343645.0000 surveyed	DRILLING RIG :	B61
EASTING :	2652670.0000 surveyed	DATE STARTED :	06/10/92
ELEVATION :	38.900 surveyed	DATE COMPLETED :	06/10/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	V. DK GRAY	SFT	WET		OVA 0.0	
27	11									
				Lean clay, CL	DK OLIVE	FRM	MST			
26	12		95	Lean clay, CL	DK OLIVE	FRM	MST	1 2 2		
25	13									
24	14									
23	15									
22	16									
21	17									
20	18									
19	19									
18	20									

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
1GW17	1	1	0.00	2.00	SPS		0	MF	90	10	0	0			MOD	SFT	MST	
1GW17	2	1	2.00	3.20	SPS		0	MF	90	10	0	0			MOD	SFT	MST	
1GW17	2	2	3.20	3.80	SPS		0	F	90	10	0	0			MOD	SFT	WET	
1GW17	2	3	3.80	4.00	SPS		0	F	90	10	0	0			MOD	LSE	WET	
1GW17	3	1	4.00	5.00	SPS		0	F	90	10	0	0			MOD	LSE	WET	
1GW17	3	2	5.00	6.00	SPS		0	F	85	15	0	0			MOD	LSE	WET	
1GW17	4	1	6.00	6.20	SPS		0	F	85	15	0	0			MOD	LSE	WET	
1GW17	4	2	6.20	8.00	SPS		0	F	95	5	0	0			MOD	LSE	WET	
1GW17	5	1	8.00	9.00	SPS		0	F	95	5	0	0			MOD	LSE	WET	
1GW17	5	2	9.00	10.00	SPS		0	F	85	15	0	0			MOD	SFT	WET	
1GW17	6	1	10.00	11.70	SPS		0	F	85	15	0	0			MOD	SFT	WET	
1GW17	6	2	11.70	12.00	SPS		0		0	5	85	10		MOD		FRM	MST	
1GW17	7	1	12.00	14.00	SPS		0		0	5	85	10		MOD		FRM	MST	

NWS-00313-03.13-07/01/93

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Duddy Road Land fill Site 1
CTO NO.: 318 BORING NO.: 1SB18
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)					1-24-96	18	Rain 65°	4.0	1415
LENGTH									
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS: * No HNu readings due to Rain

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
N = No Sample
A = Auger
W = Wash
C = Core
P = Piston

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
PVC Riser	2"	Sch 40 PVC	+2.5	3
PVC Screen	2"	0.01" slotted	3	18

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
0.5	S-00					(* SAMPLE 1SB18-00 collected)		
1	AN							
2	S-01	2.0 100%	11 17 a 0		*	(* SAMPLE 1SB18-01 collected) SAND, fine to medium, little SILT, trace Gravel;		
3								
4	S-02	2.0 100%	2 2 2 4		*	Dark Brown, trace Organics, moist, wet at 4ft		
5								
6	S-03	1.0 50%	3 6 12 10		*			
7								
8	S-04	0.2 10%	7 7 9 7		*			
9								
10	S-05	2.0 100%	2 2 2 2		*	SAND, fine to medium trace SILT; trace Organics, Brown wet		

Match to Sheet 2

DRILLING CO.: Parratt-Wolff BAKER REP.: Matt Lewis
DRILLER: BORING NO.: 1SB18 SHEET 1 O

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Duddy Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB18

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft, & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11						Continued from Sheet 1		
12	S-07	2.0 / 100%	3 3 5 6		*	SAND, fine trace SILT, Light Gray, wet		
13								
14	S-08	2.0 / 100%	3 4 5 5		*			
15								
16	S-09	2.0 / 100%	2 3 3 4		*			
17								
18	S-10	1.0 / 50%	5 5 4 4		*	CLAY and SILT Grayish Blue, moist organic odor.		
19						END OF BOORING 19 feet.		
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: BORING NO.: 1SB18 SHEET 2 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Duddy Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB19
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE (96)	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)	2"				1-28	15 ft	Foggy 30°	4.5	1230
LENGTH	2'								
TYPE	S.S.								
HAMMER WT.	STD								
FALL	STD								
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Riser	2"	Sch 40 PVC	+2.5	3.0
Screen	2"	0.01" slotted PVC	3.0	13.0

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	S-00 / A-N	1'			0.2	*(SAMPLE COLLECTED 1SB19-00)	Locking Protective cover	
2	S-01	1.0 / 50%	1 1 2		0.2	SAND, fine to med; little SILT, trace construction debris. Dk Brown to Brown, moist,	Bent. Chips Seal	
3	3		3				Sch 40 PVC Riser	
4	S-02	1.5 / 75%	11 3 4		0.3	*(Sample Collected 1SB19-02) → Wet at 4.5 ft	SAND PACK	
5	5		6					
6	S-03	1.0 / 50%	6 6 5		0.2		0.01 Slott PVC SCREEN	
7	7		7					
8	S-04	1.0 / 50%	6 5 5		0.2	SAND, fine to coarse, trace SILT, Lt Brown, wet		
9	9		6					
10	S-05	1.75 / 87.5%	3 4 3		0.2	SAND, fine trace SILT, Lt Gray, wet		
	11		4			Match to Sheet 2		

DRILLING CO.: Parratt-Wolff BAKER REP.: Matt Lewis
DRILLER: BORING NO.: 1SB19 SHEET 1 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road LandFill Landfill
CTO NO.: 318 BORING NO.: ISB19

SAMPLE TYPE
S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11						Continued from Sheet 1		
12	S-06	2.0	2		0.2	SAND, fine, little CLAY, trace SILT, Gray, moist	SAND PACK	
13		100%	2 2				0.01 SLOT SCREEN	
14	S-07	2.0	WOH WOH		0.2		Caved Soil	
15		100%	3 3					
16	S-08					END OF BORING 15ft		
17								
18	S-09							
19								
20	S-10							
21								
22	S-11							
23								
24	S-12							
25								
26	S-13							
27								
28	S-14							
29								
30								

DRILLING CO.: Parratt-Wolff BAKER REP.: Matt Lewis
DRILLER: BORING NO.: ISB19 SHEET 2 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB20
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)					1-23-96	13 Ft	Clear 40°	2 Ft	1445
LENGTH									
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS:

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
PVC Riser	2"	Sch. 40	+2.5	5
PVC Screen	2"	0.01 slot	5	10

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
1	S-00 A-N					(* SAMPLE COLLECTED 1SB20-00)	Locking protective cover	
2	S-01	2.0 100%	1 2 3		0.1	* SAMPLE COLLECTED (SB20-01) SAND, fine to medium, little to trace SILT, Brown to dark Brown, damp, wet at 2.0 feet.	Bentonite Chip Seal	
3								
4	S-02	2.0 100%	3 6 9 13		0.1		Sch 40 PVC Riser	
5							Sand Pack	
6	S-03	2.0 100%	4 4 NR		0.1		.01 Slotted PVC Screen	
7								
8	S-04	2.0 100%	10 10 6 6		0.1	SILT and SAND, fine to medium, trace clay, light Brown to Brown		
9								
10	S-05	2.0 100%	5 5 5 6		0.1	CLAY, trace SILT, Brown, Moist, Match to Sheet 2	Caved Soil	

DRILLING CO.: Parratt Wolff Inc BAKER REP.: Matt Lewis
DRILLER: BORING NO.: 1SB20 SHEET 1 O

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudely Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB20

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11	11					Continued from Sheet 1		
12	S-06	1.0 / 50%	8 8 9 8			CLAY, trace SILT, Brown to Light Brown, moist	Caved Soil	
13	13							
14						END OF Boring		
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: BORING NO.: 1SB20 SHEET 2 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Duck Road Landfill Site 1
CTO NO.: 318 BORING NO.: 1SB21
COORDINATES: EAST: NORTH:
ELEVATION: SURFACE: TOP OF PVC CASING:

RIG:	SPLIT SPOON	CASING	AUGERS	CORE BARREL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)	TIME
SIZE (DIAM.)		10"			1-24-96	21	Rain 65	20ft	0830
LENGTH		13'							
TYPE									
HAMMER WT.									
FALL									
STICK UP									

REMARKS: * HNu Malfunction during Rain.

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
PVC Riser	2"	Sch 40	+2.5	25
PVC Screen	2"	0.01 Slotted	25	40

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description
	S-00					(*SAMPLE COLLECTED 1SB21-00)
1	1 A-N					
2	S-01	2.0 100%	3 3 2 3		0.1	SAND, fine to medium, trace SILT, Dark Brown to Brown moist
3	3					
4	S-02	2.0 100%	6 7 9 8		0.1	SAND, fine to medium, little CLAY, trace SILT, Lt Brown, Moist
5	5					SILT and CLAY, little fine SAND, Lt. Brown to Gray, damp. trace Organics.
6	S-03	2.0 100%	2 2 3 4		0.1	SILT little CLAY, trace fine SAND, Lt Brown to Gray, moist
7	7					
8	S-04	2.0 100%	4 4 4 4		0.1	
9	9					
10	S-05	2.0 100%	4 3 5 5		*	
	11					

Match to Sheet 2

Well Installation Detail: Locking Protective Cover; Sch 40 PVC Riser; 10" Casing; Bentonite Seal

Elevation (ft. MSL)

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB21 SHEET 1 C

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill Site 1
CTO NO.: 318 BORING NO.: ISB21

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston
N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
11						Continued from Sheet 1		
11						(* SAMPLE COLLECTED ISB21-06)		
12	S-06	2.0	3 3 4 4		0.1	SILT and CLAY, trace fine SAND, Lt. Brown to Gray, moist.		10" Casing
13		100%						
14	S-07	2.0	WOH WOH WOH 2		9.1			Sea Level PVC Riser
15		100%						
16	S-08	2.0	WOH WOH WOH WOH		0.1			
17		100%				Some Iron Staining Color change to Orange		
18	S-09	2.0	3 3 3 3		0.1	(* SAMPLE COLLECTED ISB21-09)		Sea
19		100%						
20	S-10	2.0	2 3 4 4		0.1	SILT and CLAY, little fine SAND, Reddish Brown, moist		
21		100%				SILT and CLAY, trace fine SAND, little Shell fragments, Gray to dark gray, wet		Light Sandy Sea
22	S-11	1.75	3 4 6 4		0.2			
23		87.5%						
24	S-12	1.75	6 6 7 6		0.2			Sand Rock
25		87.5%						
26	S-13	0.5	5 5 3 2		0.2			0.01 Slot Screen
27		25%						
28	S-14	1.0	5 4 3 2		0.2			
29		50%						
30	S-15	1.5 / 75%	WOH WOH 3-6		0.2	SILT and Fine SAND, little Shell fragments, Gray, wet		

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: ISB21 SHEET 2 OF

Baker
Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Dudley Road Landfill
CTO NO.: 318 BORING NO.: 1SB21

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
RQD = Rock Quality Designation (%)
Lab. Class. = USCS (ASTM D-2487) or AASHTO (ASTM D-3282)
Lab. Moist. = Moisture Content (ASTM D-2216) Dry Weight Basis

Depth (ft.)	Samp. Type and No.	Samp. Rec. (ft. & %)	SPT or RQD	Lab Class. or Pen. Rate	PID (ppm)	Visual Description	Well Installation Detail	Elevation (ft. MSL)
31						Continued from Sheet 1		
2	S-16	1.5	7 5			SILT and fine SAND little shell fragments,		
3 33		75%	10 15		0.2	Dark Gray, Wet		
4	S-17	1.5	7 9					
5 35		75%	13 15		0.2		0.01" slot PVC screen	
6	S-18	1.5	9 11					
7 37		75%	13 18		0.2			
8	S-19	1.0	14 17			SILT and fine SAND, trace shell fragments		Sand pack
9 39		50%	22 23		0.2	Dark Gray with Lt. Gray laminations.		
40	S-20	1.5	4 11					
1 41		75%	21 23		0.2			Caved Soil
2						END OF BORING AT 41 ft.		
3								
4								
5								
6								
7								
8								
9								
50								

DRILLING CO.: Parratt Wolff BAKER REP.: Matt Lewis
DRILLER: Doug Toma BORING NO.: 1SB21 SHEET 3 OF 3

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	1GW22	SHEET 1	OF 1

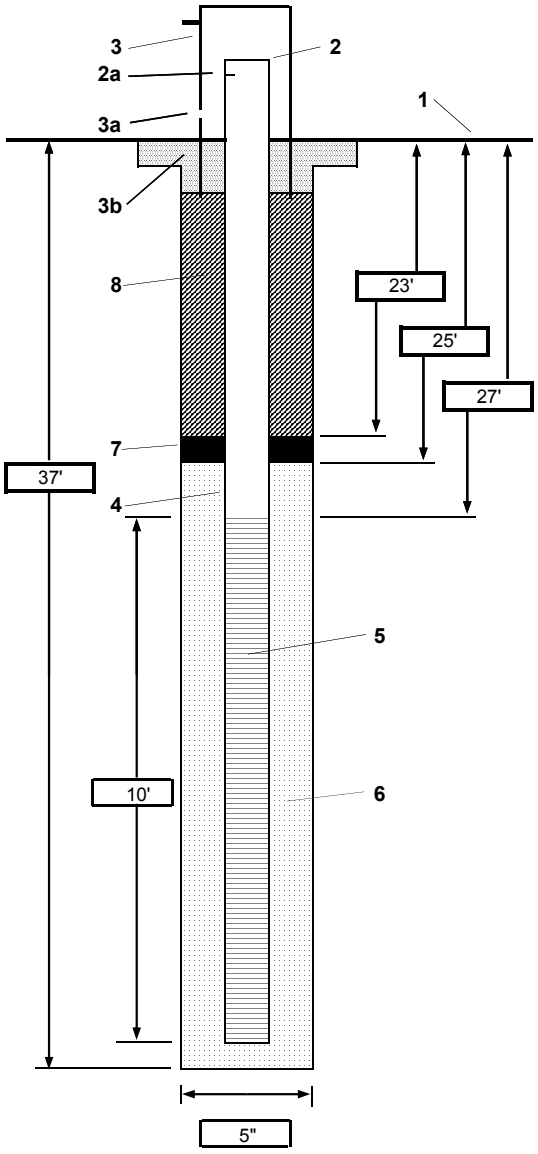
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 1

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on Truck Rig

WATER LEVELS : 30.16 ft (TOC) START : 02/17/2009 END : 02/18/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6.5

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 3.5 hours

Estimated purge volume: 55 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	1GW23	SHEET 1	OF 1

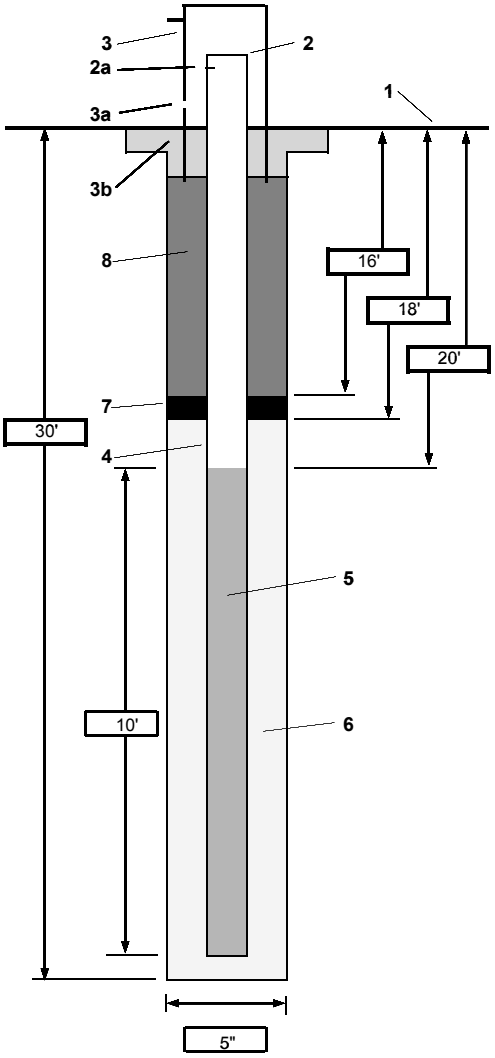
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 1

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 14.45 ft (TOC) START : 02/23/2009 END : 02/23/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	1GW24	SHEET 1	OF 1

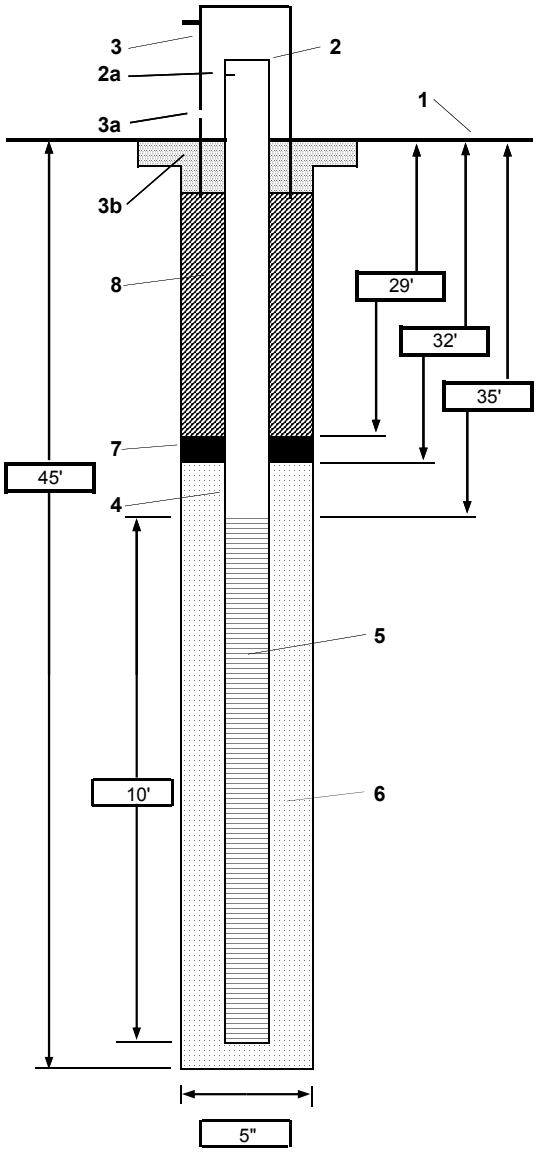
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 1

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 33.73 ft (TOC) START : 02/24/2009 END : 02/24/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	1GW25	SHEET 1	OF 1

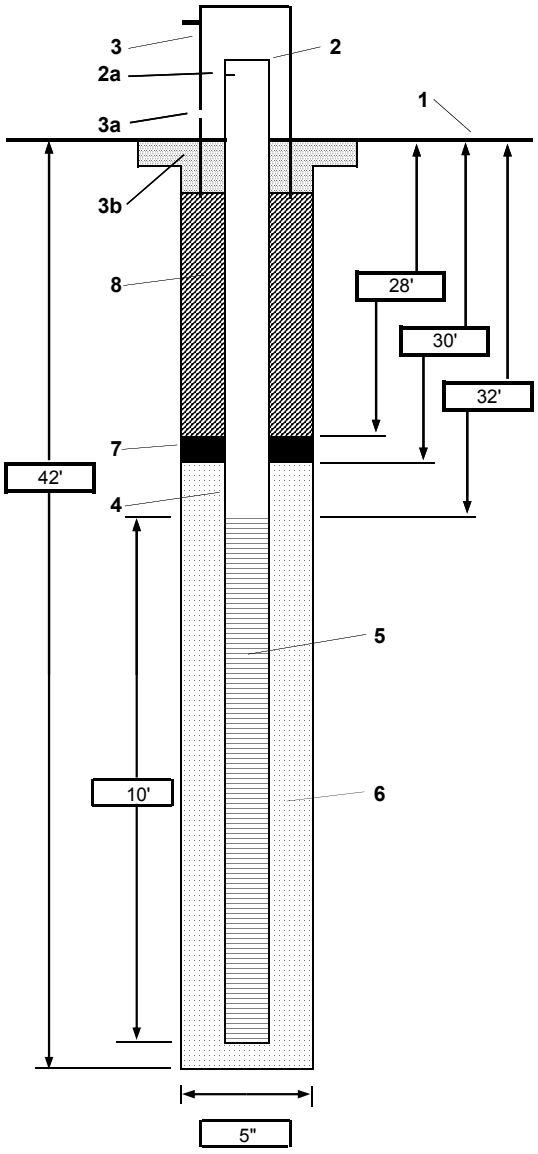
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 1

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 29.96 ft (TOC) START : 02/25/2009 END : 02/25/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS01-GW22	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 — LOCATION : Yorktown NWS

ELEVATION: 39.54 ft msl (TOC) — DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on Truck Rig

WATER LEVELS : 30.16 ft (TOC) — START : 2/17/09 — END : 2/17/09 — LOGGER : Caitlin Lippincott

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	36"/48"	1		silty SAND (SM), brown to tan, moist, loose, fine-medium grained SAND, organics	PID=0.0 ppm
	4'-8'	48"/48"	2		**4'-5':** SAA **5'-8':** silty SAND (SM), greenish grey, moist-wet, fine-medium grained loose SAND	PID=0.0 ppm PID=0.0 ppm
10	8'-12'	24"/48"	3		sandy silty CLAY (CL), greenish gray, moist, soft-medium stiff CLAY, high plasticity	PID=3.7 ppm
15	12'-16'	36"/48"	4		SAA except becoming bluish-green	PID=14.7 ppm
20	16'-20'	24"/48"	5		SAA	PID=44.7 ppm
	20'-24'	48"/48"	6		**20'-22':** SAA **22'-24':** silty CLAY (ML), bluish green, dry-moist, stiff CLAY w/ some sand and shell hash	PID=48 ppm
25	24'-28'	36"/48"	7		**24'-26':** SAA except very stiff and moist-wet **26'-28':** silty clayey SAND (SC), white, moist-wet, loose-medium dense SAND w/ shell hash	PID=23 ppm
30	28'-32'	48"/48"	8		clayey silty SAND (SC), white to yellowish orange, moist-wet, dense SAND w/ shell hash	PID=40 ppm
35	32'-36'	48"/48"	9		**32'-35':** SAA except wet and coarser SANDS **35'-36':** CLAY (CL), greenish gray, moist-wet soft-stiff CLAY w/ silts, sand, and shell hash	PID=20 ppm
40	36'-40'	48"/48"	10		**36'-39':** SAA except CLAY is very soft-soft **39'-40':** silty sandy CLAY (CL), bluish-gray, dry-moist stiff-hard, some shell hash	PID=12 ppm

Well Screened from 27'-37' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS01-GW23	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 16.91 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 14.45 ft (TOC) START : 2/23/09 END : 2/23/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	24"/48"	1		SAND (SW), 10YR6/6 brownish yellow, dry-moist, loose, well graded SAND.	PID=0.0 ppm
	4'-8'	36"/48"	2		sandy CLAY (SC), 10YR5/8 yellowish brown, dry-moist, stiff CLAY w/ sand	PID=13.9ppm
10	8'-12'	48"/48"	3		SAA w/ less sand	PID=3.8ppm
15	12'-16'	40"/48"	4		silty sandy CLAY (SC), 10YR4/2 dark grayish brown, moist, soft CLAY w/ sands and trace silts	PID=36.7ppm
20	16'-20'	40"/48"	5		silty SAND (SM), 2.5Y5/3 light olive brown, moist-wet loose medium grained SAND w/ silts	PID=0.0 ppm
25	20'-24'	40"/48"	6		silty SAND (SM), 2.5Y5/3 light olive brown, saturated loose medium grained SAND w/ silts and shell hash	PID=0.0 ppm
	24'-28	48"/48"	7		SAA	PID=0.0 ppm
30	28'-32'	48"/48"	8		SAA	PID=0.0 ppm

Well Screened from 20'-30' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS01-GW24	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 35.25 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 33.73 ft (TOC) START : 2/24/09 END : 2/24/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	24"/48"	1		SAND (SP), 10YR7/2 light gray, dry-moist, f/g loose poorly graded SAND	
10	4'-8'	30"/48"	2		clayey SAND (SC), 10YR5/6 yellowish brown, dry-moist, v. dense medium SAND w/ clay and trace silts	
15	8'-12'	48"/48"	3		sandy CLAY (SC), 5YR5/8 yellowish red mottled w/ 7.5 YR4/3 brown, dry-moist, v. stiff CLAY w/ well graded sand, trace silts, and organics	
20	12'-16'	48"/48"	4		clayey SAND (SC), 7.5YR5/8 strong brown mottled w/ 7.5YR7/1 light gray, dry-moist, medium dense, f/g SAND w/ clay and trace silts	
25	16'-20'	48"/48"	5		sandy CLAY (SC), 7.5YR5/8 strong brown mottled w/ 7.5YR7/1 light gray, dry-moist, v. stiff CLAY w/ f/g sand and silts.	
	20'-24'	48"/48"	6		SAA	PID=0.0ppm
30	24'-28'	48"/48"	7		sandy silty CLAY (ML), 2.5Y4/3 olive brown, moist v. stiff CLAY w/ silts and trace f/g sand, shell hash	PID=0.0ppm
35	28'-32'	48"/48"	8		silty CLAY (ML), 2.5Y5/3 light olive brown, moist-wet soft CLAY w/ silts, trace sand, shell hash	PID=0.0ppm
40	32'-36'	24"/48"	9		silty SAND (SM), 2.5Y5/3 light olive brown, saturated loose, f/g SAND w/ silts and shell hash	PID=0.0ppm
	36'-40'	48"/48"	10		SAA	PID=0.0ppm
	40'-44'	48"/48"	11		SAA	PID=0.0ppm

Well Screened from 35'-45' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS01-GW25	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 31.55 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 29.96 ft (TOC) START : 2/25/09 END : 2/25/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	24"/48"	1		SAND (SW), 10YR6/4 light yellowish brown, f/g loose, well graded SAND w/ organics	
	4'-8'	36"/48"	2		sandy CLAY (SC), 10YR4/6 dark yellowish brown, dry-moist, stiff CLAY w/ medium coarse sand and organics	PID=0.0ppm
10	8'-12'	48"/48"	3		sandy CLAY (SC), 10YR4/6 mottled w/ 10YR7/2 light gray, dry, stiff CLAY w/ medium coarse sand	PID=0.0ppm
15	12'-16'	48"/48"	4		SAA	PID=0.0ppm
20	16'-20'	48"/48"	5		SAA	PID=0.0ppm
	20'-24'	48"/48"	6		**20'-22':** SAA **22'-24':** sandy silty CLAY (ML), 10YR7/2 light gray mottled w/ browns, dry-moist, medium stiff CLAY w/ silts, sands, and shell hash	PID=6.8ppm
25	**24'-28'**	**48"/48"**	**7**		sandy silty CLAY (ML), 2.5Y5/3 light olive brown, moist, soft CLAY w/ silts, trace sands and shell hash	PID=0.5ppm
30	28'-32'	40"/48"	8		SAA except wet @ **32'**	PID=0.0ppm
35	32'-36'	48"/48"	9		silty SAND (SM), 2.5Y5/3 light olive gray, saturated v. loose f/g SAND w/ silts and shell hash	PID=0.0ppm
40	36'-40'	48"/48"	10		SAA	PID=0.0ppm
	40'-44'	48"/48"	11		SAA	PID=0.0ppm

Well Screened from 32'-42' bgs

Site 3

Dames & Moore

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
13542	LANTDIV. US NAVY	NWS YORKTOWN VA

DRILLING METHOD: MC 45 7¼ HS.A. NW

BORING NO. 3GW06

SHEET 1 OF 3

SAMPLING METHOD: 24" spl. sp. 140lb H.A.M.

DRILLING: START TIME 15:30 DATE 12-10-84; FINISH TIME 17:00 DATE 12-10-84

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DATUM ELEVATION

DRILLING CONTR.

BY DATE CHK'D BY

No. 28449

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
				4 4 5 (9)		0 1	
				6 9 11 (17)		2 3	SM
				5 6 6 (12)		4	
						5 6 7 8	
				5 6 7 (13)		9 10 11	SP
						12 13 14	
				4 6 12 (20)		15 16 17	ML/SM
						18 19 0	

SURFACE CONDITIONS:

Bk brown silty med to coarse SAND, LOOSE

brown-orange clayey-silty fine SAND w/ small gravel present, some coarse SAND, MEDIUM DENSE

Brown silty to clayey-silty fine SAND w/ appreciable coarse SAND to gravel, MEDIUM DENSE

Varved white & orange fine to med SANDS, MEDIUM DENSE

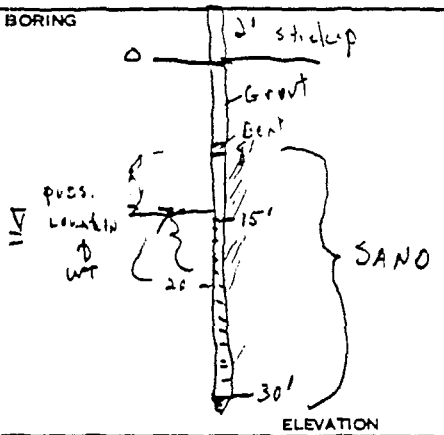
orange & white varved clayey silt or v. fine SAND. very tough - mica present VERY STIFF

A-4

28.1 (3) (REV. 11-80)

Dames & Moore

LOCATION OF BORING



DATUM ELEVATION

JOB NO.	CLIENT	LOCATION
13542	LANTDIV, US NAVY	Yorktown, NWS, VA

DRILLING METHOD: M-45 7¼ H.S.A. NW

BORING NO. 36W06

SHEET 2 OF 3

SAMPLING METHOD: 24" spl spoon

DRILLING

					START TIME	FINISH TIME
WATER LEVEL	15-20'				9:45	10:15
TIME						
DATE					DATE 12-11-85	DATE 12-11-85
CASING DEPTH	30'					

SURFACE CONDITIONS:

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
				3 3 5 / 8		20 21 22	ML
						23 24	
				6 5 6 / 11		25 26	
						27 28 29	
				3 3 6 / 13	9	30 31 2 3	
						4 5 6 7 8 9 0	SP

Varved grey & brown clayey silts, STIFF

Varved grey & brown clayey silts to fine sand in brown layers

Start grey green clayey silts, STIFF

End of green grey clayey silts

Tan-grey calcareous (plentiful shell fragments 5-10 mm and greater) silty fine SAND, MEDIUM DENSE

A-5

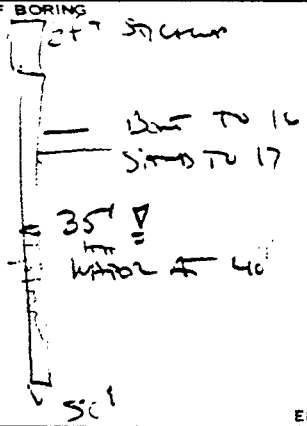
No. 28450

DRILLING CONTR. ____ BY ____ DATE ____ CHK'D BY ____

628.1 (3) (REV. 11-80)

Dames & Moore

LOCATION OF BORING



DATUM ELEVATION

JOB NO.	CLIENT	LOCATION
13542021	LANTDIV US NAVY	NAVAL WEAPONS STATION YORKTOWN VA

DRILLING METHOD: 7½" HSA

DRILLING EQUIPMENT: ARCTIC ATV MCE 55

SAMPLING METHOD:

BORING NO. ~~B-6~~ NW3 GW 06

SHEET 3 OF 3

					DRILLING START	DRILLING FINISH
WATER LEVEL						
TIME					15:25	16:45
DATE					DATE	DATE
CASING DEPTH					2/13/86	2/13/86

DRILLING CONTR. No. 58289

BY DATE CHK'D BY

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO / SAMPLE DEPTH	BLOWS/FT SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
						40	
						1	
						2	
						3	
						4	SP
						5	
						6	
						7	
						8	
						9	
						50	
						1	
						2	
						3	
						4	
						5	
						6	
						7	
						8	
						9	
						60	

SURFACE CONDITIONS:

FINE TO SAND, COARSE SHELL FRAGS
DARK GRAY (5Y 4/1)

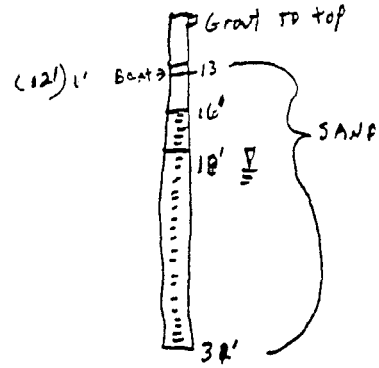
FINE TO SAND, COARSE SHELL FRAGS
(5Y 4/1)

A-6

828 1 (3) (REV 11-80)

Dames & Moore

LOCATION OF BORING



JOB NO.	CLIENT	LOCATION
13542	LANTDIV - USNAVY	Yorktown, VA

DRILLING METHOD: Ardco ATV MC55

BORING NO. 3GW07

SHEET 1 OF 2

SAMPLING METHOD: 24" Spl. Spoon

DRILLING

					START	FINISH
WATER LEVEL	18'		-		TIME 11:00	TIME 14:30
TIME	14:00					
DATE	1-6-86				DATE 1-6-86	DATE 1-6-86
CASING DEPTH	31'					

DATUM ELEVATION

DRILLING CONTR.

No. 28404

BY DATE CHK'D BY

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH	SURFACE CONDITIONS:
				4 5 6 (11)		0 1	SC	LT Brown - TO TAN clayey fine SAND or silt MEDIUM DENSE
				5 5 7 (12)		2 3	SM	orange & TAN mottled silty med to fine SAND some coarser SAND present - micaceous minerals present MEDIUM DENSE
				4 4 3 (7)		4 5	SC	orange-brown and grey mottled clayey v fine sands micaceous minerals present - more abundant from 1.5 TO 3.0 sample Ok minerals & coarser SANDS in upper most section of SAMPLE
						6 7 8		
						9 10	CL	mixed orange brown clay and white shelly material >50% white chalky material & hard shells, STIFF
				4 5 4 (9)		11 12 13		
						14		
				4 5 5 (10)		15 16	SM	lt Brown to tan silt and fine sands w 30-40% shelly material white light - dark shell frags MEDIUM DENSE
						17 18 19 20		A-7

628.1 (3) (REV. 11-80)

Dames & Moore

LOCATION OF BORING

JOB NO.	CLIENT	LOCATION
13542	LANTDIV - US NAVY	Yorktown NWS VA

DRILLING METHOD: Arco ATV Mc 55

SAMPLING METHOD: 24" spt spoon

BORING NO. NW 36W07

SHEET 2 OF 2

					DRILLING START	DRILLING FINISH
WATER LEVEL	19-20'					
TIME	14:00				TIME 11:00	TIME 14:30
DATE	1-6-86				DATE 1-6-86	DATE 1-6-86
CASING DEPTH	31'					

DATUM ELEVATION

DRILLING CONTR. BY DATE CHK'D BY

No. 28405

SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	DEPTH OF CASING	SAMPLE NO. / SAMPLE DEPTH	BLOWS/FT. SAMPLER	NUMBER OF RINGS	DEPTH IN FEET	SOIL GRAPH
				4		20	
				6 7 / 13		21	SM
						22	
						23	
						24	
				8	8	25	SP
				8 9 / 17		26	
						27	
						28	
						29	
				5		30	
				7 7 / 14		31	
						32	
						33	
						34	
						35	
						6	
						7	
						8	
						9	
						0	

SURFACE CONDITIONS:

saturated sample
TAN silty med to fine SANDS w/ much shell frags large -to 20 mm Light & dark frags heavy minerals present, MEDIUM DENSE

TAN shelly silty med SAND -uniform, MEDIUM DENSE

TAN shelly silty med SAND -uniform, MEDIUM DENSE

A-8

228.1 (3) (REV. 11-80)

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3 SB/GW 8A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3
COORDINATES: NORTH: _____, EAST: _____
ELEVATIONS: SURFACE: 25.9

RIG: ATV Track RIG	SPLIT SPOON	AUGERS	SURFACE CASING	REAMING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID			2-9-96	7.5	Sunny 38°	25'
LENGTH	2.0'	5.0'		--				
TYPE	Std.	HSA						
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS: * HNu malfunction due to moisture (humidity)

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	-2.5 Stickup	60
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	60	75

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						SILT and fine sand, dark to light brown, moist		
2								
3	A-N							
4								
5								
6	S1	2.0/2.0 100%	3 2 3 4		0.2	CLAY and silt, light brown to gray, medium stiff, moist		
7								
8								
9	A-N							
10					*	SAME		

Match to Sheet 2

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. Lewis
DRILLER: K. White WELL/BORING NO.: 3 SB/GW 8A SHEET 1 OF ____

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3 SB/GW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 1		
11–12	S2	2.0/2.0 100%	5 3 10 11		*	fine SAND and silt, trace clay, light brown		
13–15								
15–17	S3	2.0/2.0 100%	7 7 7 14		*	CLAY and silt, trace fine sand, light brown very stiff moist SILT, little fine sand, shell fragments, light brown, very stiff, moist		
18–20								
21–22	S4	2.0/2.0 100%	6 6 7 11		*	SAME		
23–25								
26–27	S5	1.5/2.0 75%	6 7 6 5		*	fine SAND, little silt, shell fragments, medium dense, wet		
28–30						Match to Sheet 3		

DRILLING CO.: Parrott-Wolff Inc
DRILLER: K. White
BAKER REP.: R. Lewis
WELL/BORING NO.: 3SB/GW08A SHEET 2 OF ____

Baker Environmental, Inc.

WELL/BORING NO.: 3SB/GW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31	S6	1.5/2.0 100%	6 8 9 12		*	Continued from Sheet — fine SAND, little silt, shell fragments, medium dense, wet, light brown		
32								
33								
34								
35								
36	S7	2.0/2.0 100%	10 15 12 13		*	SAME	Cement bentonite grout	
37								
38								
39							PVC Riser	
40								
41	S8	2.0/2.0 100%	12 11 19 13		*	SAME except color change to dark brown		
42								
43								
44								
45								
46	S9	1.1/2.0 100%	6 8 17 14		*	fine SAND, some shell fragments, little silt, dark gray, medium dense, wet		
47								
48								
49								
50						Match to Sheet —		

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. Lewis
DRILLER: K. White WELL/BORING NO.: 3SB/GW08A SHEET __ OF __

Baker Environmental, Inc.

WELL/BORING NO.: 35B/GW08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 318
SITE/AREA:

SAMPLE TYPE
S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet:		
51	S10	1.75/2.0 88%	5 5 6 5			fine SAND, some shell fragments, little silt, dark gray, medium dense, wet		
52								
53	A-N						Top of bentonite 53	
54								
55								
56	S11	1.75/2.0 88%	18 15 23 24			SAME	Top of Qtz sand 57	
57								
58	A-N							
59								
60							Top of screen 60	
61	S12	1.75/2.0 88%	7 8 11 13			SAME		
62								
63	A-N							
64								
65								
66	S13	1.75/2.0 88%	5 10 12 14			fine to very fine SAND, some shell fragments little silt, dark gray, medium dense, wet		
67								
68	A-N							
69								
70						Match to Sheet:		

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. Lewis
DRILLER: K. White WELL/BORING NO.: 35B/GW08A SHEET __ OF __

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3SB/6W08A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 318
SITE/AREA:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
71	S14	1.75/2.0 88%	3 7 10 16		*	Continued from Sheet _ fine to very fine SAND, some shell fragments little silt, dark gray, medium dense, wet	PVC screen; #1 Qtz Sand	
72								
73	S15	1.75/2.0 88%	4 9 14 18		*	SAME	bottom PVC screen 75'	
74								
5	AW							
6						Boring Complete at 75' bgs		
8								
9								
0								
1								
2								
3								
4								
5								
6								
7								
8								
9								
0						Match to Sheet _		

DRILLING CO.: Parratt-Wolff Inc
DRILLER: K. White
BAKER REP.: R Lewis
WELL/BORING NO.: 3SB/6W08A SHEET __ OF __

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I
PROJ. NO.: CTO-213 BORING NO.: 3GW08B
COORDINATES NORTHING: 342,352.65 EASTING: 2,563,454.37
ELEVATION: GROUND SURFACE 25.98 TOP OF PVC CASING: 28.03

Rig: CME-55 ATV	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1 3/8"	--	4.25"	--	9/20/2004	35	Sunny, 60-78°	*24
Length (FT)	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140#							
Fall								

Remarks: *Approximate location. Augered to 35-ft bgs then constructed monitoring well, to replace the damaged 3GW08

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Dam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch. 40 PVC Riser	2"	0	25
Sch. 40 PVC (0.010 in.) screen	2"	25	35

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2							Sch. 40 PVC riser	
3								
4								
5	A-N							
6							cement bentonite grout	
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin
DRILLER: Gary Ellingworth BORING NO.: 3GW08B SHEET 1 OF 3

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

CTO NO.: CTO-213 BORING NO.: 3GW08B

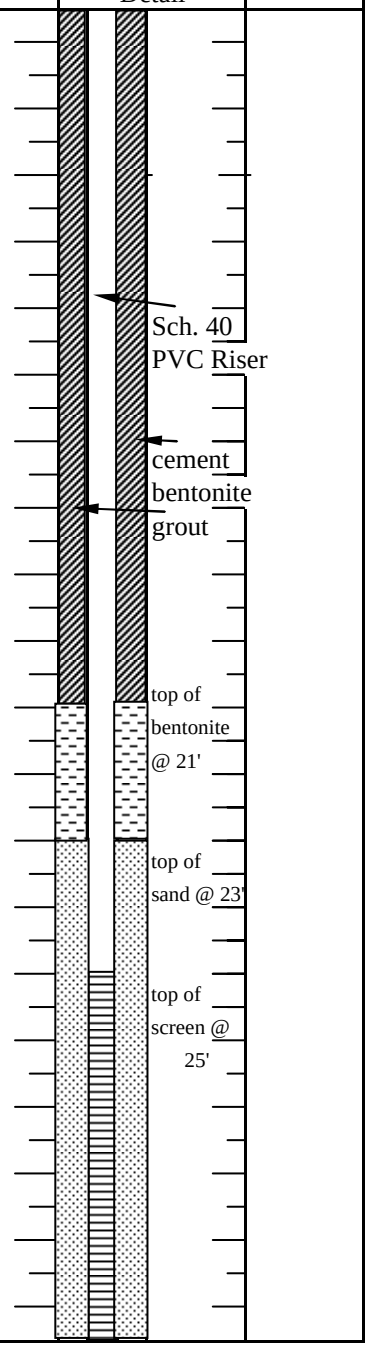
SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13								
14								
15								
16								
17								
18								
19								
20	A-N							
21								
22								
23								
24						water @ ~24 feet		
25								
26								
27								
28								
29								
30								



Match to Sheet 3

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW08B SHEET 2 OF 3

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

CTO NO.: CTO-213 BORING NO.: 3GW08B

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31							0.10 slot PVC screen	
32	A-N							
33								
34							Bottom of screen @ 35'	
35								
						EOB @ 35-ft		
36								
37								
38								
39								
40								
41								
42								
43								
44								
45								
46								
47								
48								
49								
50								

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW08B SHEET 3 OF 3

Borehole Location Data — *ROY F. WESTON, Inc.*

BOREHOLE ID : 3GW15 SITE NAME/NO: WPNSTA YORKTOWN
BEGIN DATE : 06/02/92 END DATE : 06/02/92

LOGGER/COMPANY : J. WILLIAMS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 39.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 39.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : HARDIN-HUBER
DRILLER : ROYCE KEENAN
DRILL RIG TYPE : B61

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	29.300
N. COORDINATE :	0.0000	342446.0000
E. COORDINATE :	0.0000	2563175.0000

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: Y
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

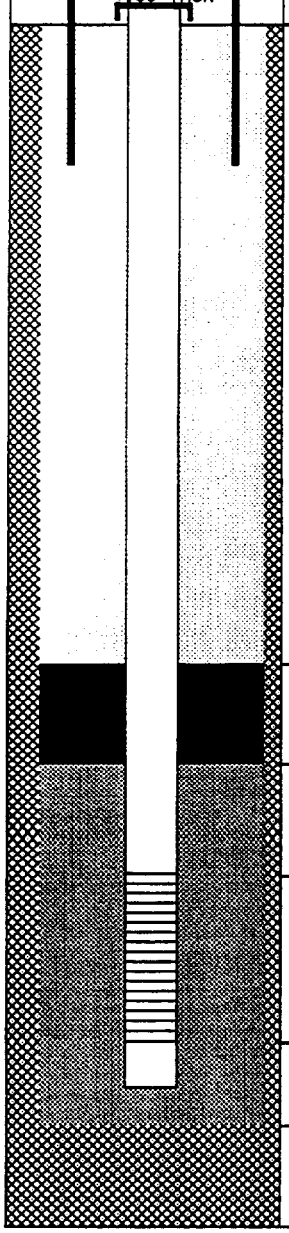
NWS-00313-03.13-07/01/93

Well Completion Summary — *ROY F. WESTON, Inc.*

CLIENT	WPNSTA YORKTOWN	*DRILLING FIRM*	HARDIN-HUBER
SITE NAME	WPNSTA YORKTOWN	*INSPECTOR*	J. WILLIAMS

WELL ID	3GW15
START DATE	06/04/92
COMPLETION DATE	06/05/92

WATER LEVELS
26.00 FT (TOC) ON 06/04/92



DEPTH		*ELEV.*
2.62	*TC*	31.92
0.00	*GS*	29.30
15.50	*BN*	13.80
15.50	*SP*	13.80
20.00	*SC*	9.30
35.00	*BS*	-5.70
37.00	*TD*	-7.70

DRILLING SUMMARY

Driller ROYCE KEENAN
Drilling Fluid
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* — *Interval:* 0.00 to 25.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.62 *ft.* — *Protective Casing:* 0.00 *ft.*

Casing Grout: CEMT/BENT — *Interval:* 0.00 to 15.50 *ft.*

Seal Type: BENTONITE PELLET — *Interval:* 15.50 to 17.00 *ft.*

Sand Pack Type : — *Interval:* 15.50 to 37.00 *ft.*
Grain Size : — *Median Diameter:*
Screen Diameter: 4.00 — *Interval:* 20.00 to 35.00 *ft.*
Type : PVC — *Slots:* 0.020 *inches*

Silt Trap Interval: 0.00 to 0.00 *ft.*
Backfill Type : — *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date / /
Method
Yield — *Purged Volume*

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth

= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
21 bags #2 sand/gravel suspended in viscous fine/false readings/gravel at 10'/had to lift 7' out with mud and wash.

NOTE: Well Diagram not to Scale

Elevations are feet above mean sea level

01/06/93

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT	:	WPNSTA YORKTOWN	TOTAL DEPTH	:	39.00
SITE NAME	:	WPNSTA YORKTOWN	LOGGER	:	J. WILLIAMS
WELL ID	:	3GW15	DRILLING COMPANY	:	HARDIN-HUBER
NORTHING	:	342446.0000 surveyed	DRILLING RIG	:	B61
EASTING	:	2563175.0000 surveyed	DATE STARTED	:	06/02/92
ELEVATION	:	29.300 surveyed	DATE COMPLETED	:	06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	DK YLLOWISH BRN	LSE	MST	2 4 6 7	FID 0.0	0-2 took 2nd split spoon for additional BNA & metals vol.
28	1									
27	2			Silty sand, SM	DK YLLOWISH BRN	LSE	MST	3 6 7 9		
26	3									
25	4			Sandy lean clay, CL	DK YLLOWISH BRN		MST	3 4 4 5		Clay contact 5.1'
24	5									
23	6			SHELLY HASH	LT GRAY	STF	MST	3 5 6 7		Mottled, orange brown 90% SHELL FRAGMENTS
22	7									
21	8			Elastic silt, MH			WET	3 5 6 8		Interbedded clay & silt trace root matter.
20	9									
19	10			Fat clay, CH	PALE OLIVE	STF	MST	4 7 7 8		Gradational clay & silt.

Borehole Log

ROY F. WESTON, Inc.

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	39.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	J. WILLIAMS
WELL ID :	3GW15	DRILLING COMPANY :	HARDIN-HUBER
NORTHING :	342446.0000 surveyed	DRILLING RIG :	B61
EASTING :	2563175.0000 surveyed	DATE STARTED :	06/02/92
ELEVATION :	29.300 surveyed	DATE COMPLETED :	06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Fat clay, CH	PALE OLIVE	STF	MST			Gradational clay & silt.
18	11									
17	12			Fat clay, CH	PALE OLIVE	FRM	MST	3 5 6 8		Trace root matter.
16	13									
15	14			Silt, ML	GRAY	FRM	MST	3 3 5 6	FID 0.0	Mottled olive gray to ylw brn. Trace mica 1" layer rotten oxidized Fe, accretion. Tr. Fe nodules
14	15									
13	16			Lean clay with sand, CL		FRM	MST	2 3 4 4		
12	17									
11	18			Sandy lean clay, CL		FRM	MST	1 1 3 4		Mottled orange brn to olive gray 18.7 contact of shell layer.
10	19			Shelly clay		FRM	MST		FID 0.5	18.7 to 19.5 shell frags. in fill matrix. Contact shell layer 18.7' BGS. 50% Shell fragments.
				No Sample Recovered						
9	20			Shelly clay		FRM	WET	1 2 4 5	FID 2.5	50% Shell Fragments

Borehole Log — ***ROY F. WESTON, Inc.***

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH : 39.00	
SITE NAME : WPNSTA YORKTOWN		LOGGER : J. WILLIAMS	
WELL ID : 3GW15		DRILLING COMPANY : HARDIN-HUBER	
NORTHING : 342446.0000 surveyed		DRILLING RIG : B61	
EASTING : 2563175.0000 surveyed		DATE STARTED : 06/02/92	
ELEVATION : 29.300 surveyed		DATE COMPLETED : 06/02/92	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
8	21			Shelly clay		FRM	WET		FID 2.5	50% Shell Fragments
7	22			Shelly clay			WET	2 5 5 5	FID 0.0	FID reading over hole in auger 1.8. 50% Shell frag
6	23									
5	24			Shelly clay			WET		FID 3.5	50% shell fragments in clay matrix.
				Lean clay with sand, CL	OLIVE GR-YELLOW		WET			
4	25									
3	26			Interval Not Sampled						
2	27									
1	28									
0	29									
-1	30			Silty sand, SM	OLIVE BROWN	LSE	SAT	4 6 7 9	FID 0.0	OVA reading over hole in auger .2

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	39.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	J. WILLIAMS
WELL ID :	3GW15	DRILLING COMPANY :	HARDIN-HUBER
NORTHING :	342446.0000 surveyed	DRILLING RIG :	B61
EASTING :	2563175.0000 surveyed	DATE STARTED :	06/02/92
ELEVATION :	29.300 surveyed	DATE COMPLETED :	06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	OLIVE BROWN	LSE	SAT		FID 0.0	OVA reading over hole in auger .2
-1	31									
-2	32			Interval Not Sampled						
-3	33									
-4	34									
-5	35			Silty sand, SM		SFT	SAT	5 7 7 6	FID 0.0	
-6	36									
-7	37			Silty sand, SM	DK OLIVE GRAY	LSE	SAT	13 13 14 13	FID 0.0	Some shell fragments (crumbly).
-8	38									
-9	39									
-10	40									

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
3GW15	1	1	0.00	2.00	SPS		0	F	60	40	0	0		NON	MOD	LSE	MST	
3GW15	2	1	2.00	4.00	SPS		0	F	50	40	10	0		NON	MOD	LSE	MST	
3GW15	3	1	4.00	6.00	SPS		0		30	30	40	0		LOW			MST	
3GW15	4	1	6.00	8.00	SPS		0		0	0	10	90		HGH		STF	MST	
3GW15	5	1	8.00	10.00	SPS		0		0	50	50	0		MOD	POR		WET	
3GW15	6	1	10.00	12.00	SPS		0		0	10	85	5		HGH		STF	MST	
3GW15	7	1	12.00	14.00	SPS		0		5	20	75	0		HGH		FRM	MST	
3GW15	8	1	14.00	16.00	SPS		0		5	50	45	0		LOW		FRM	MST	
3GW15	9	1	16.00	18.00	SPS		0	F	25	35	40	0		MOD		FRM	MST	
3GW15	10	1	18.00	18.70	SPS		0		30	30	40	0		LOW		FRM	MST	
3GW15	10	2	18.70	19.50	SPS		0		0	0	50	50		LOW		FRM	MST	
3GW15	10	3	19.50	20.00	SPS		0		0	0	0	0						
3GW15	11	1	20.00	22.00	SPS		0		0	0	50	50		LOW		FRM	WET	
3GW15	12	1	22.00	24.00	SPS		0		0	0	50	50		LOW			WET	
3GW15	13	1	24.00	24.40	SPS		0		0	0	50	50		LOW			WET	
3GW15	13	2	24.40	26.00	SPS		0		20	30	50	0		LOW			WET	
3GW15	14	1	26.00	30.00	NS		0		0	0	0	0						
3GW15	15	1	30.00	32.00	SPS		0		50	15	5	30		NON		LSE	SAT	
3GW15	16	1	32.00	35.00	NS		0		0	0	0	0						
3GW15	17	1	35.00	37.00	SPS		0	F	50	50	0	0			WEL	SFT	SAT	
3GW15	18	1	37.00	39.00	SPS		0	MF	80	15	5	0		NON	WEL	LSE	SAT	

NWS-00313-03.13-07/01/93

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3GW15A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3 - Group 16 Magazine Landfill
COORDINATES: NORTH: _____, EAST: _____
ELEVATIONS: SURFACE: _____

RIG:	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)	1 5/8	4-1/4" ID	—		1-29-96	49	Rain 35°	25
LENGTH	2.0'	5.0'	—	--				
TYPE	Std.	HSA	—					
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS: * HNu malfunction, raining

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	0	55
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	55	70

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N					SAND, coarse to fine, trace silt, light brown, damp		
2	S1	2.0/2.0 100%	3 6 7 6		*	SAME but		
3							cement-bentonite grout	
4	S2	2.0/2.0 100%	4 7 7 7			CLAY, little silt, trace sand gray and light brown, damp,		
5								
6	S3	2.0/2.0 100%	3 4 8 10			SAME except trace fine gravel, iron staining, dry,	PVC Riser	
7								
8	S4	1.5/2.0 75%	5 6 6 5					
9								
10	S5	1.5/2.0 75%	7 7 8 9			SAND and silt, trace clay, light brown, damp,		

Match to Sheet 2

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. M. Lewis
DRILLER: D Thoma WELL/BORING NO.: 3GW15A SHEET 1 OF ____

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3GW15A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0319
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11						Continued from Sheet 1		
12	S6	1.5/2.0 75%	8 9 12 12			fine SAND and silt, trace clay, light brown, damp,		
13								
14	S7	2.0/2.0 100%	4 5 6 7			CLAY, trace fine sand, gray, dry	cement-bentonite grout	
15								
16	S8	2.0/2.0 100%	WOH 1 4 5	3GW15A-08				
17								
18	S9	2.0/2.0 100%	5 7 7 6				PVC riser	
19								
20	S10	1.5/2.0 100%	5 4 3 8			SILT and clay, trace sand, light brown to gray, 50% shell fragments, damp,		
21								
22	S11	1.5/2.0 75%	5 5 4 5					
23						moist		
24	S12	1.8/2.0 90%	3 2 WOH/12"	3SB15A-12		slight hydrocarbon odor, very soft		
25							▼	
26	S13	1.5/2.0 75%	WOR/12" WOH/12"			SILT and fine sand, trace clay, brown to gray, wet, very soft, hydrocarbon odor		
27								
28	S14	1.0/2.0 50%	WOR/18" 4			SAME except trace shell fragments, light brown		
29								
30	S15	1.0/2.0	WOR/6" WOH/6"			Approx 1 ft. void at 29' bgs		
						Match to Sheet 3		

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. M. Lewis
DRILLER: D. Thoma WELL/BORING NO.: 3GW15A SHEET 2 OF ___

Baker Environmental, Inc.

WELL/BORING NO.: 36WI5A

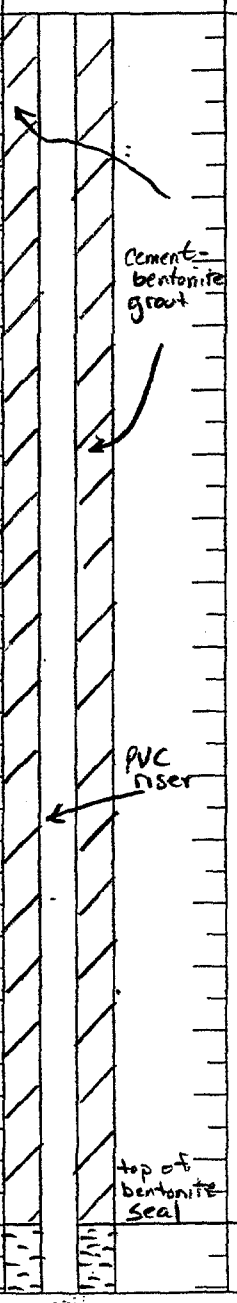
TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; T = Shelby Tube; R = Air Rotary; D = Denison; A = Auger; W = Wash; C = Core; P = Piston; N = No Sample

ACRONYMS
BG = Background; HSA = Hollow Stem Augers; ID = Inside Diameter; PID = Photoionization Detector; ppm = parts per million; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet _		
31	S15	50%	3 4			SILT and fine sand, trace shell fragments light brown, soft, wet		
2	S16	1.5/2.0 75%	WOH 4 8 10			SAME except, little shell fragments, stiff moist,		
3								
4	S17	1.5/2.0 75%	4 11 14 16			SAME except hard		
5								
6	S18	1.5/2.0 75%	10 12 16 13					
7								
8	S19	1.5/2.0 75%	9 10 10 13					
9								
40	S20	2.0/2.0 100%	5 10 13 16			SAME except, some shell fragments, gray to light brown		
1								
2	S21	2.0/2.0 100%	12 13 32 34					
3								
4	S22	1.8/2.0 90%	8 12 14 16					
5						fine to very fine SAND, and silt, trace clay, shell fragments, dark gray, dense moist to wet		
6	S23	1.8/2.0 90%	12 13 18 27					
7								
8	S24	1.8/2.0 90%	16 42 50/3"			SAME except no clay, very dense		
9								
50	S25	1.5/2.0	9 9			Match to Sheet _		



DRILLING CO.: Parratt-Wolff
DRILLER: R Thoma
BAKER REP.: R.M. Lewis
WELL/BORING NO.: 36WI5A
SHEET _ OF _

Baker Environmental, Inc.

WELL/BORING NO.: 36W15A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet _		
51	S25	2.0 / 2.0 100%	15 18			SILT and fine sand, trace shell fragments, dark gray stiff, wet	Bentonite; top of sand	
2	S26	1.5 / 2.0 75%	6 12 11 13				PVC riser	
3								
4	S27	1.0 / 2.0 50%	9 11 12 12			SAME except little shell fragments	Top of screen	
5								
6	S28	1.0 / 1.0 50%	3 8 8 7					
7								
8	S29	1.8 / 2.0 90%	6 9 9 12					
9								
60	S30	1.5 / 2.0 75%	12 18 32 41			SAME except hard	0.01 in. PVC screen; #1 Qtz. Sand	
1								
2	S31	1.5 / 2.0 75%	17 22 34 44					
3								
4	S32	1.5 / 2.0 75%	8 26 20 22					
5								
6	S33	2.0 / 2.0 100%	6 6 14 29			SAME except very stiff		
7								
8	S34	2.0 / 2.0 100%	15 28 35 32			SAME except hard		
9						SILT and fine sand, trace shell fragments, dark gray, hard, wet		
70	S35	2.0 / 2.0	17 32			Match to Sheet _	Bottom of screen	

DRILLING CO.: Parratt-Wolff, Inc BAKER REP.: R.M. Lewis
DRILLER: D. Thoma WELL/BORING NO.: 36W15A SHEET __ OF __

Baker Environmental, Inc.

WELL/BORING NO.: 3GW15A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 038
SITE/AREA: Site 3

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
71	S35	100%	35			SILT and fine sand, trace shell fragments dk gray, hard, wet Continued from Sheet	#1 Qtz Sand	
2						Boring Complete @ 71 ft. bgs		
3								
4								
5								
6								
7								
8								
9								
0								
1								
2								
3								
4								
5								
6								
7								
8								
9								
0						Match to Sheet		

DRILLING CO.: Parrott-Wolff, Inc.
DRILLER: D. Thoma
BAKER REP.: R.M. Lewis
WELL/BORING NO.: 3GW15A
SHEET __ OF __

Borehole Location Data **ROY F. WESTON, Inc.**

BOREHOLE ID : 3GW18 SITE NAME/NO: WPNSTA YORKTOWN
BEGIN DATE : 06/02/92 END DATE : 06/02/92

LOGGER/COMPANY : JOHN WILLIAMS

BOREHOLE COMPLETED IN (<O>verburden <B>edrock) : O

TOTAL DEPTH : 52.00 DEPTH TO BEDROCK : 0.00

BOREHOLE DIAMETER #1: 12.00
INTERVAL: 0.00 ft. to 52.00 ft. BGS
METHOD : HSA FLUID : NONE
BOREHOLE DIAMETER #2:
INTERVAL:
METHOD : FLUID :
BOREHOLE DIAMETER #3:
INTERVAL:
METHOD : FLUID :

DRILLING COMPANY : HARDIN HUBER
DRILLER : ROYCE KEEMAN
DRILL RIG TYPE : MOBILE B-47

	ESTIMATED	SURVEYED
SURFACE ELEVATION :	0.000	45.900
N. COORDINATE :	0.0000	342428.0000
E. COORDINATE :	0.0000	2562834.0000

WELL PERMIT.....(Y)es (N)o: N PERMIT # :

HOLE ABANDONED...(Y)es (N)o: N
WELL INSTALLED...(Y)es (N)o: Y
WELL CLUSTER.....(Y)es (N)o: N No. OF WELLS : 0
WELL NEST.....(Y)es (N)o: N No. OF WELLS : 0
PUMPS INSTALLED..(Y)es (N)o: N

	TYPE	DEPTH
PURGE :		0.00
SAMPLE :		0.00

BOREHOLE TESTING
BOREHOLE GEOPHYSICS.....(Y)es (N)o: N
SLUG TESTS.....(Y)es (N)o: Y
PACKER TESTS.....(Y)es (N)o: N
PUMPING TESTS.....(Y)es (N)o: N

COMMENTS :

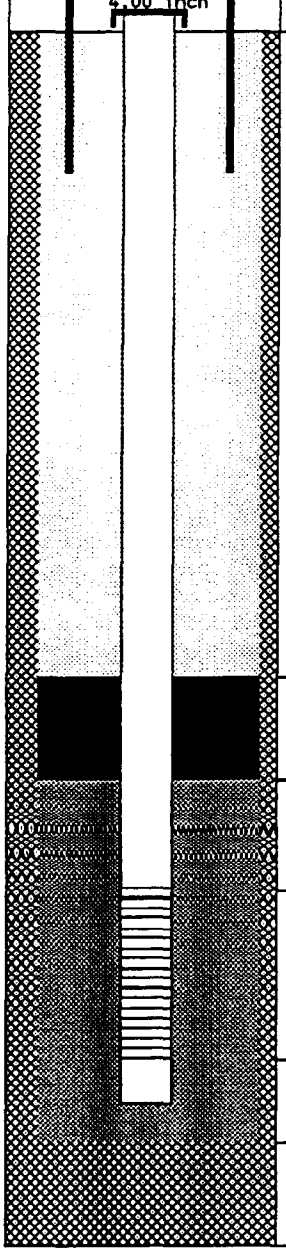
NWS-00313-03.13-07/01/93

Well Completion Summary — ***ROY F. WESTON, Inc.***

CLIENT	WPNSTA YORKTOWN	*DRILLING FIRM*	HARDIN-HUBER
SITE NAME	WPNSTA YORKTOWN	*INSPECTOR*	J. WILLIAMS

WELL ID	3GW18
START DATE	06/02/92
COMPLETION DATE	06/03/92

WATER LEVELS



DEPTH		*ELEV.*
2.43	*TC*	48.33
0.00	*GS*	45.90
30.00	*BN*	15.90
33.00	*SP*	12.90
35.00	*SC*	10.90
50.00	*BS*	-4.10
51.00	*TD*	-5.10

DRILLING SUMMARY

Driller ROYCE KEEMAN
Drilling Fluid
Well Type SINGLE CASED SCREENED

WELL DESIGN CONSTRUCTION

Casing #1 Diameter: 4.00 *inch* *Interval:* 0.00 to 35.00 *ft.*
Type : PVC SCH 40

Stick Up Inner Casing: 2.43 *ft.* *Protective Casing:* 0.00 *ft.*

Casing Grout: CEMT/BENT *Interval:* 0.00 to 0.00 *ft.*

Seal Type: PELLETS, BENTONITE *Interval:* 30.00 to 33.00 *ft.*

Sand Pack Type : #2 *Interval:* 33.00 to 51.00 *ft.*
Grain Size : UNIFORM *Median Diameter:* 2-3
Screen Diameter: 4.00 *Interval:* 35.00 to 50.00 *ft.*
Type : PVC *Slots:* 0.020 *inches*

Silt Trap Interval: 50.00 to 51.00 *ft.*
Backfill Type : *Interval:* 0.00 to 0.00 *ft.*

WELL DEVELOPMENT

Date / /
Method
Yield *Purged Volume*

COMMENTS

TC = Top of Casing
GS = Ground Surface
BN = Top Seal
SP = Top Sand Pack
SC = Top Screen
BS = Bottom Screen
TD = Total Depth
= Grout
= Seal
= Sand Pack
= Formation

Additional Comments:
21 bags sand, 2 buckets pellets; 12 cement. 1/2 bag bentonite.

NOTE: Well Diagram not to Scale ***Elevations are feet above mean sea level***

01/06/93

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT :	WPNSTA YORKTOWN	TOTAL DEPTH :	52.00
SITE NAME :	WPNSTA YORKTOWN	LOGGER :	JOHN WILLIAMS
WELL ID :	3GW18	DRILLING COMPANY :	HARDIN HUBER
NORTHING :	342428.0000 surveyed	DRILLING RIG :	MOBILE B-47
EASTING :	2562834.0000 surveyed	DATE STARTED :	06/02/92
ELEVATION :	45.900 surveyed	DATE COMPLETED :	06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM				7 9 10 10		
44	1									
43	2			Silty sand, SM	DARK BROWN	LSE	DRY	7 11 13 11	FID 0.0	
42	3									
41	4			Silty sand, SM	DK YLLWISH BRN		MST	3 5 6 6	FID 0.0	
40	5									
39	6			Silty sand, SM	LT YLLWISH BRN	LSE	MST	4 5 6 8		
38	7									
37	8			Silty sand, SM	V. PALE BROWN		MST	3 7 7 9		
36	9									
35	10			Silty sand, SM	V. PALE BROWN		WET	3 4 5 4		Perched water.

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH : 52.00	
SITE NAME : WPNSTA YORKTOWN		LOGGER : JOHN WILLIAMS	
WELL ID : 3GW18		DRILLING COMPANY : HARDIN HUBER	
NORTHING : 342428.0000 surveyed		DRILLING RIG : MOBILE B-47	
EASTING : 2562834.0000 surveyed		DATE STARTED : 06/02/92	
ELEVATION : 45.900 surveyed		DATE COMPLETED : 06/02/92	

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Silty sand, SM	V. PALE BROWN		WET			Perched water.
34	11									
33	12			Fat clay, CH	DK YELLOWISH BR	STF	MST	2 4 6 3		
32	13									
31	14			Fat clay, CH	DK YLLOWISH BRN		IMT	4 4 6 7		
30	15									
29	16			Fat clay, CH	DK OLIVE GRAY	STF	MST	3 3 4 0		
28	17									
27	18			Fat clay, CH	OLIVE GRAY	STF	MST	3 3 4 4		
26	19									
25	20			Lean clay with sand, CL	OLIVE GRAY	FRM	MST	3 4 4 6	FID 0.0	Grading to sandy clay.

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH	: 52.00
SITE NAME : WPNSTA YORKTOWN		LOGGER	: JOHN WILLIAMS
WELL ID : 3GW18		DRILLING COMPANY	: HARDIN HUBER
NORTHING : 342428.0000 surveyed		DRILLING RIG	: MOBILE B-47
EASTING : 2562834.0000 surveyed		DATE STARTED	: 06/02/92
ELEVATION : 45.900 surveyed		DATE COMPLETED	: 06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Lean clay with sand, CL	OLIVE GRAY	FRM	MST		FID 0.0	Grading to sandy clay.
24	21									
23	22			Not Classified - Incomplete Data	OLIVE	FRM	MST	3 3 6 8		
22	23									
21	24			Elastic silt, MH	OLIVE	FRM	MST	2 3 4 5	FID 0.0	
20	25									
19	26			Elastic silt, MH	OLIVE			3 3 4 0	FID 0.0	Varied interbedded vf silts and clay layers.
18	27									
17	28			Elastic silt, MH	OLIVE GRAY	FRM	WET	1 2 2 0	FID 0.0	
16	29									
15	30			Elastic silt, MH	DK GRY-LT OLV B		MST	1 1 2 2	FID 0.0	Color change at 31.5 from dk gray to lt olive brown.

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH	: 52.00
SITE NAME : WPNSTA YORKTOWN		LOGGER	: JOHN WILLIAMS
WELL ID : 3GW18		DRILLING COMPANY	: HARDIN HUBER
NORTHING : 342428.0000 surveyed		DRILLING RIG	: MOBILE B-47
EASTING : 2562834.0000 surveyed		DATE STARTED	: 06/02/92
ELEVATION : 45.900 surveyed		DATE COMPLETED	: 06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Elastic silt, MH	DK GRY-LT OLV B		MST		FID 0.0	Color change at 31.5 from dk gray to lt olive brown.
14	31									
13	32			Shelly hash			WET			Shell fragments at 32.3 feet. Plentiful.
12	33									
11	34			Shelly clay		FRM	MST	4 4 6 7		Tan/gr. shell fragments, calcereous, matrix of clay & silt shell fragments plentiful.
10	35									
9	36			Shelly clay		FRM	MST	5 12 4 6	FID 0.0	Little shell fragments.
8	37									
7	38			Interval Not Sampled						
6	39									
5	40			Shelly sand	DK OLIVE GRAY		SAT	4 4 7 7		V.f. sand,shell fragments in a matrix of v.f. silty sand.

Borehole Log — *ROY F. WESTON, Inc.*

CLIENT : WPNSTA YORKTOWN		TOTAL DEPTH	: 52.00
SITE NAME : WPNSTA YORKTOWN		LOGGER	: JOHN WILLIAMS
WELL ID : 3GW18		DRILLING COMPANY	: HARDIN HUBER
NORTHING : 342428.0000 surveyed		DRILLING RIG	: MOBILE B-47
EASTING : 2562834.0000 surveyed		DATE STARTED	: 06/02/92
ELEVATION : 45.900 surveyed		DATE COMPLETED	: 06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Shelly sand	DK OLIVE GRAY		SAT			V.f. sand shell fragments in a matrix of v.f. silty sand.
4	41									
3	42			Interval Not Sampled						
2	43									
1	44									
0	45			Shelly sand	DARK GRAY	LSE	SAT	5 6 6 9	FID 0.0	Some shell fragments.
-1	46									
-2	47			Interval Not Sampled						
-3	48									
-4	49									
-5	50			Poorly graded sand with silt, SP-SM	DK OLIVE GRAY		SAT	11 15 17 21	FID 0.0	

Borehole Log **ROY F. WESTON, Inc.**

CLIENT	:	WPNSTA YORKTOWN	TOTAL DEPTH	:	52.00
SITE NAME	:	WPNSTA YORKTOWN	LOGGER	:	JOHN WILLIAMS
WELL ID	:	3GW18	DRILLING COMPANY	:	HARDIN HUBER
NORTHING	:	342428.0000 surveyed	DRILLING RIG	:	MOBILE B-47
EASTING	:	2562834.0000 surveyed	DATE STARTED	:	06/02/92
ELEVATION	:	45.900 surveyed	DATE COMPLETED	:	06/02/92

ELEVATION	DEPTH	MATERIAL	% RECOVERY	CLASSIFICATION	COLOR	STRENGTH	MOISTURE	BLOW COUNT	FIELD INSTRUMENT READING	COMMENTS
				Poorly graded sand with silt, SP-SM	DK OLIVE GRAY		SAT		FID 0.0	
-5	51									
-6	52									
-7	53									
-8	54									
-9	55									
-10	56									
-11	57									
-12	58									
-13	59									
-14	60									

BOREHOLE /WELL ID	SMP NUM	LTH NUM	LITHOLOGY INT. (FT BGS)		SAMPLING METHOD	SIZE GRAVEL	GRAVEL PCT.	SIZE SAND	SAND PCT	SILT PCT	CLAY PCT	ORGANIC PCT	ROCK TYPE	PLAST	SORT	STRENGTH	MOISTURE	STRAT UNIT
3GW18	1	1	0.00	2.00	SPS		0		75	20	0	5						
3GW18	1	1	2.00	4.00	SPS		0	MF	40	35	5	0		NON	WEL	LSE	DRY	
3GW18	3	1	4.00	6.00	SPS		0		65	35	0	0		NON	MOD		MST	
3GW18	4	1	6.00	8.00	SPS		5	CM	60	35	0	0		NON	MOD	LSE	MST	
3GW18	5	1	8.00	10.00	SPS		0	F	75	20	5	0		NON	WEL		MST	
3GW18	6	1	10.00	12.00	SPS		0	F	75	20	5	0		NON	WEL		WET	
3GW18	7	1	12.00	14.00	SPS		0	F	5	5	90	0		HGH		STF	MST	
3GW18	8	1	14.00	16.00	SPS		0	F	10	5	85	0		HGH			JMT	
3GW18	9	1	16.00	18.00	SPS		0	F	5	5	90	0		HGH		STF	MST	
3GW18	10	1	18.00	20.00	SPS		0		5	5	90	0		HGH		STF	MST	
3GW18	11	1	20.00	22.00	SPS		0	F	25	0	70	0		MOD		FRM	MST	
3GW18	12	1	22.00	24.00	SPS		0		0	0	0	0				FRM	MST	
3GW18	13	1	24.00	26.00	SPS		0		0	50	50	0		MOD		FRM	MST	
3GW18	14	1	26.00	28.00	SPS		0		0	0	0	0						
3GW18	15	1	28.00	30.00	SPS		0	F	5	50	45	0		MOD		FRM	WET	
3GW18	16	1	30.00	32.00	SPS		0		0	50	50	0		MOD			MST	
3GW18	17	1	32.00	34.00	SPS		0		0	0	0	0		MOD			WET	
3GW18	18	1	34.00	36.00	SPS		0		0	50	50	0		LOW		FRM	MST	
3GW18	19	1	36.00	38.00	SPS		0		0	50	50	0		LOW		FRM	MST	
3GW18	20	1	38.00	40.00	NS		0		0	0	0	0						
3GW18	21	1	40.00	42.00	SPS	F	0		50	50	0	0		NON			SAT	
3GW18	22	1	42.00	45.00	NS		0		0	0	0	0						
3GW18	23	1	45.00	47.00	SPS		0		0	0	0	0			WEL	LSE	SAT	
3GW18	24	1	47.00	50.00	NS		0		0	0	0	0						
3GW18	25	1	50.00	52.00	SPS	F	0		90	5	5	0		NON	WEL		SAT	

NWS-00313-03.13-07/01/93

Baker Environmental, Inc.

WELL/BORING NO.: 35B/GW19

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 318
SITE/AREA:
COORDINATES: NORTH: _____, EAST: _____
ELEVATIONS: SURFACE: 37.1

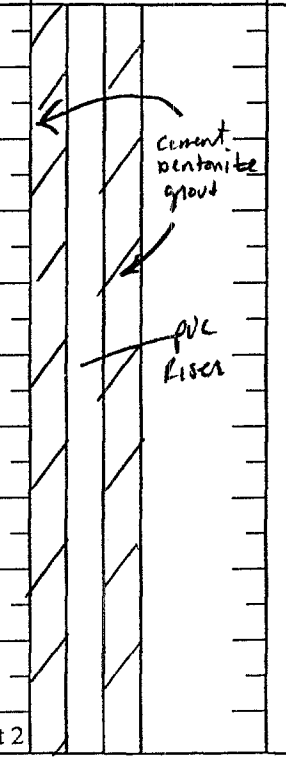
RIG:					DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL				
SIZE (DIAM.)		4-1/4" ID			2-8-96	45	partly sunny	32'
LENGTH	2.0'	5.0'		--				
TYPE	Std.	HSA						
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded		
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded		

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1						Refer to 35B/GW19A for soil descriptions		
2								
3								
4								
5								
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. Lewis
DRILLER: K. White WELL/BORING NO.: 35B/GW19 SHEET 1 OF ___

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3SB/GW19

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 318
SITE/AREA: Site 3

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
11						Continued from Sheet 1		
12							cement bentonite grout	
13								
14								
15								
16						Refer to 3SB/GW19A for soil descriptions	PVC riser	
17								
18								
19								
20								
21								
22							top of bentonite 23'	
23								
24								
25								
26							top of SAnd 27'	
27								
28								
29								
30						Match to Sheet 3		

DRILLING CO.: Parratt-Wolff Inc
DRILLER: K. White
BAKER REP.: R. Lewis
WELL/BORING NO.: 3SB/GW19
SHEET 2 OF ___

Baker Environmental, Inc.

WELL/BORING NO.: 3 SB/GW19

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 318
SITE/AREA:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

ACRONYMS

BG = Background
HSA = Hollow Stem Augers
ID = Inside Diameter
PID = Photoionization Detector
ppm = parts per million
SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5')
WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
31						Continued from Sheet __	30' top of Screen	
32								
33								
34								
35						Refer to 3 SB/GW19A for soil descriptions	#1 & #2 Sand	
36								
37								
38							0.010 inch Screen	
39								
40								
41								
42								
43								
44								
45							Bottom of Screen 45'	
6						Boring complete at 45' bgs		
7								
8								
9								
0						Match to Sheet __		

DRILLING CO.: Parratt-Wolff, Inc.
DRILLER: K. White
BAKER REP.: R Lewis
WELL/BORING NO.: 3 SB/GW19 SHEET __ OF __

Baker Environmental, Inc.

WELL/BORING NO.: 3 SB/GW 19 A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3
COORDINATES: NORTH: _____, EAST: _____
ELEVATIONS: SURFACE: 32.3

RIG: ATV Track Rig	SPLIT SPOON	AUGERS	SURFACE CASING	REAM-ING TOOL	DATE	PROGRESS (FT.)	WEATHER	WATER DEPTH (FT.)
SIZE (DIAM.)		4-1/4" ID			1-30-96	setup		
LENGTH	2.0'	5.0'		--	1-31-96	7.2	cloudy 30°	32'
TYPE	Std.	HSA			2-5-96	12	partly cloudy 25°	—
HAMMER WT.	140#	--	--	--				
FALL	30"	--	--	--				

REMARKS:

SAMPLE TYPE

S = Split Spoon
T = Shelby Tube
R = Air Rotary
D = Denison
A = Auger
W = Wash
C = Core
P = Piston
N = No Sample

Well Information	Diam.	Type	Top Depth (ft.)	Bottom Depth (ft.)
Well Riser	2"	Sch. 40 PVC, Threaded	-2.5 stickup	66
Well Screen	2"	No. 10 Slot Sch. 40 PVC, Threaded	66	81

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp.	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
1	A-N							
2	S1	1.5/2.0 75%	WOH/12, 3, 3		0.2	medium to fine SAND, trace silt, light brown to brown, loose, moist		
3								
4	S2	1.75/2.0 88%	9, 8, 7, 7		0.2	same except coarse to fine SAND		
5								
6	S3	2.0/2.0 100%	3, 5, 7, 9		0.2	same		
7								
8	S4	1.5/2.0 75%	7, 7, 9, 8		0.2	same		
9								
10	S5	1.5/2.0 75%	6, 7, 8, 8		0.2	medium to fine SAND, trace silt, light brown, medium dense, moist		

Match to Sheet 2

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. Lewis
DRILLER: K. White WELL/BORING NO.: 3SB/GW19A SHEET 1 OF ___

Baker
Baker Environmental, Inc.

WELL/BORING NO.: 3SB/GW19A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
						Continued from Sheet 1		
11	S5							
12	S6	1.0/2.0 50%	WOH 7 6 6		0.2	SILT, little fine sand, clay, gray and brown, stiff, damp		
13								
14	S7	1.0/2.0 50%	WOH/12 6 6		0.2	CLAY and silt, trace fine sand, gray and brown, stiff, dry		
15								
16	S8	1.5/2.0 75%	5 5 6 12		0.2	Same		
17								
18	S9	1.0/2.0 50%	12 10 17 19		0.2	Same		
19								
20	S10	1.5/2.0 50%	8 10 17 13		0.2	fine SAND and silt, light gray, dense, damp		
21								
22	S11	1.5/2.0 75%	19 21 18 23		0.2	Same except brown		
23								
24	S12	1.0/2.0 50%	6 3 9 13		0.2	SILT and clay, trace fine sand, brown stiff, damp		
25								
26	S13	2.0/2.0 100%	4 6 7 7		0.2	Same		
27								
28	S14	1.0/2.0 50%	7 8 9 12		0.2	Same		
29								
30	S15	2.0/2.0	4 6		0.2	Same except little clay, little shell fragments Match to Sheet 3		

DRILLING CO.: Parratt-Wolff Inc
DRILLER: K. White
BAKER REP.: R. Lewis
WELL/BORING NO.: 3SB/GW19A
SHEET 2 OF ___

Baker Environmental, Inc.

WELL/BORING NO.:

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
30	S15	100%	6 7			Continued from Sheet _		
31								
2	S16	2.0/2.0	3 1 1			SILT, little clay, sand, shell fragments brown, soft, damp to wet		
3		100%	1					
4	A-N							
5								
6								
8								
9								
40								
1	S18	1.75/2.0	3 4 7			medium to fine SAND, some silt, little shell fragments, light brown to gray medium dense, wet		
2		88%	11					
3	A-N							
4								
5								
6	S19	2.0/2.0	3 5 6			Same except little silt		
7		100%	9					
8	A-N							
9								
50						Match to Sheet _		

DRILLING CO.: Pamatt-Wolff Inc
DRILLER: K. White
BAKER REP.: R. Lewis
WELL/BORING NO.: 35B/6W19A SHEET __ OF __

Baker Environmental, Inc.

WELL/BORING NO.: 3SB/GW19A

TEST BORING AND WELL CONSTRUCTION RECORD

INSTALLATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 0318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
51						Continued from Sheet:		
2	S20	1.0/2.0 50%	6 15 20 7			SILT and fine sand, trace shell fragments, dark gray, hard, wet	cement bentonite grout; PVC Riser	
3								
4	A-N							
5								
6	S21	1.0/2.0 50%	9 21 22 23			Same		
7								
8								
9	A-N							
60							Top of bentonite slurry 60'	
1	S22	1.0/2.0 50%	10 9 8 13			Same		
2							top of #1 Qtz sand 63'	
3								
4	A-N							
5								
6	S23	1.7/2.0 85%	4 6 7 18			SILT and fine sand, trace shell fragments dark gray, stiff, wet to moist	Top of screen 66'	
7								
8								
9	A-N							
70						Match to Sheet		

DRILLING CO.: Parratt-Wolff Inc BAKER REP.: R. Lewis
DRILLER: K White WELL/BORING NO.: 3SB/GW19A SHEET __ OF __

Baker Environmental, Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

NAME/LOCATION: NAVAL WEAPONS STATION YORKTOWN CTO NO.: 318
SITE/AREA: Site 3

SAMPLE TYPE
S = Split Spoon; A = Auger; T = Shelby Tube; W = Wash; R = Air Rotary; C = Core; D = Denison; P = Piston; N = No Sample

ACRONYMS
BG = Background; PID = Photoionization Detector; HSA = Hollow Stem Augers; ppm = parts per million; ID = Inside Diameter; SPT = Standard Penetration Test (ASTM D-1586)(Blows/0.5'); WD = While Drilling

Depth (ft.)	Samp. Type and No.	Samp. Rec. ft./%	SPT	Lab Samp. Desig.	PID (ppm) BG/Samp	Visual Description/Comments	Well Installation Detail	Elevation (ft.)
71		1.0 / 2.0	3			Continued from Sheet _ fine SAND, little silt, trace shell fragments, dark gray, medium dense, wet	0.01 inch PVC screen; No. 1 Qtz Sand; bottom of screen 81' bgs	
72	S24	50%	4 21 14					
73		1.25 / 2.0	22 19			SAME		
74	S25	88%	24 23					
75		1.5 / 2.0	10 13			Same		
76	S26	75%	18 28					
77		1.5 / 2.0	15 12			Same		
78	S27	75%	13 16					
79		2.0 / 2.0	WOH 11			Same		
80	S28	100%	11 24					
81		2.0 / 2.0	10 12			Same		
82	S29	100%	19 21					
83		2.0 / 2.0	11 20			fine SAND, little silt, trace shell fragments, dark gray, dense, wet		
84	S30	100%	24 22					
5						Boring Complete at 84' bgs		
6								
7								
8								
9								
						Match to Sheet _		

DRILLING CO.: Parratt-Wolff, Inc. BAKER REP.: R. Lewis
DRILLER: K. White WELL/BORING NO.: 3SB/GW19A SHEET __ OF __

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

PROJ. NO.: CTO-213 BORING NO.: 3GW20

COORDINATES NORTHING: 342,530.98 EASTING: 2,563,347.70

ELEVATION: GROUND SURFAC 29.48 TOP OF PVC CASING: 31.18

Rig: CME-55 ATV								
	Split Spoon	**Casing**	**Augers**	**Core Barrel**	**Date**	**Progress (Ft.)**	**Weather**	**Depth to Water (Ft.)**
Size (ID)	1 3/8"	--	4.25"	--	9/20/2004	50	Sunny, 60-78°	*N/A
Length (FT)	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140#							
Fall								

Remarks: *Offset from 3GW20A, then augered to 50-ft bgs then constructed monitoring well. See boring record for 3GW20A for soil profile.

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Dam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch. 40 PVC Riser	2"	0	40
Sch. 40 PVC (0.010 in.) screen	2"	40	50

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1							Sch. 40 PVC riser	
2								
3							cement bentonite grout	
4								
5	A-N							
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW20 SHEET 1 OF 3

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

CTO NO.: CTO-213 BORING NO.: 3GW20

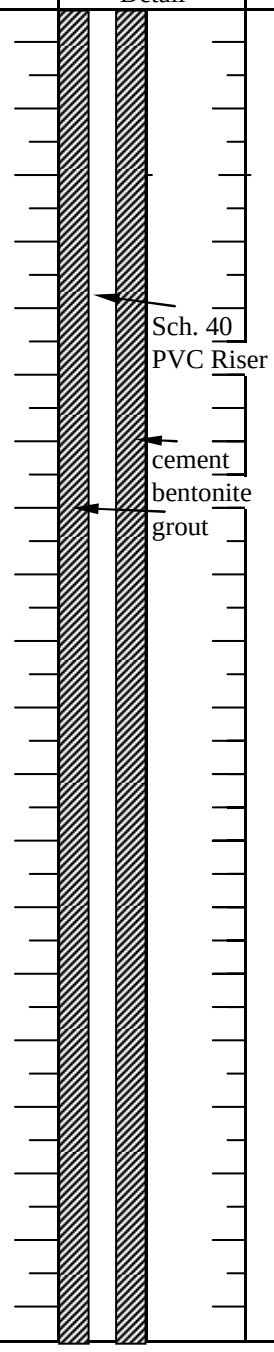
SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13								
14								
15								
16								
17								
18								
19								
20	A-N							
21								
22								
23								
24								
25								
26								
27								
28								
29								
30						Match to Sheet 3		



DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW20 SHEET 2 OF 3

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

CTO NO.: CTO-213 BORING NO.: 3GW20

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31								
32								
33								
34								
35								
36							top of bentonite '@ 36'	
37								
38	A-N						top of sand @ 38'	
39								
40							No. 1 Qtz sand	
41							top of screen @ 40'	
42								
43								
44								
45								
46								
47								
48								
49							Bottom of screen @ 50'	
50						EOB @ 50-ft		

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW20 SHEET 3 OF 3

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I
PROJ. NO.: CTO-213 BORING NO.: 3GW20A
COORDINATES NORTHING: 342,534.39 EASTING: 2,563,350.66
ELEVATION: GROUND SURFA 29.07 TOP OF PVC CASING: 31.31

Rig: CME-55 ATV

	Split Spoon	Casing	Augers	Core Barrel	Date	Progress (Ft.)	Weather	Depth to Water (Ft.)
Size (ID)	1 3/8"	--	4.25"	--	9/19&20/200	80	Sunny, 60-78°	*27
Length (FT)	2.0		5.0					
Type	STD		HSA					
Hammer Wt.	140#							
Fall								

Remarks:
*Approximate location. Augered to 30-ft bgs, then began split-spoon sampling at 5.0-ft centers

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Direct Push P = Piston
N = No Sample

WELL INFORMATION

Type	Dam.	Top Depth (Ft.)	Bottom Depth (Ft.)
Sch. 40 PVC Riser	2"	0	70
Sch. 40 PVC (0.010 in.) screen	2"	70	80

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
1								
2							Sch. 40 PVC riser	
3								
4								
5	A-N						cement bentonite grout	
6								
7								
8								
9								
10						Match to Sheet 2		

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin
DRILLER: Gary Ellingworth BORING NO.: 3GW20A SHEET 1 OF 5

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

CTO NO.: CTO-213 BORING NO.: 3GW20A

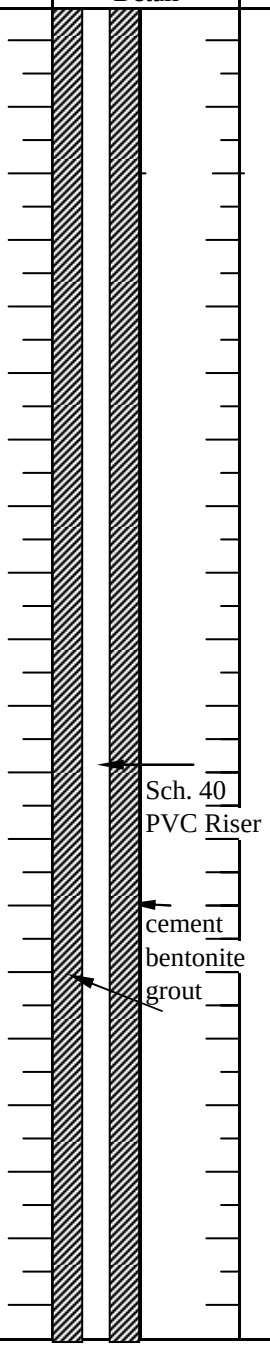
SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
11								
12								
13								
14								
15								
16								
17								
18								
19								
20	A-N							
21								
22								
23								
24								
25								
26								
27	▼					water @ ~27-ft		
28								
29								
30								



Match to Sheet 3

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW20A SHEET 2 OF 5

Baker
Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I
CTO NO.: CTO-213 BORING NO.: 3GW20A

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
31	S-1	1.2 60%	5 11 10			Wet, light-brown, fine SAND some silt, trace clay, shells		
32								
33	A-N							
34								
35								
36	S-2	2 100%	W-O-H 1 3 3			Wet, light-brown, fine SAND, little silt, trace clay	Sch. 40 PVC Riser	
37								
38	A-N						cement bentonite grout	
39								
40								
41	S-3	2 100%	5 10 13 20			Wet, light-brown, fine SAND, little silt, trace clay		
42								
43								
44								
45								
46	S-4	2 100%	5 9 7 10			Wet, light-gray, fine SAND some silt, trace clay, shells		
47								
48								
49						Wet, light-gray fine SAND, some silt, trace clay, shells		
50								
	S-5		3			Match to Sheet 4		

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin
DRILLER: Gary Ellingworth BORING NO.: 3GW20A SHEET 3 OF 5

Baker
Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I
CTO NO.: CTO-213 BORING NO.: 3GW20A

SAMPLE TYPE
S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS
SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
51	S-5	2	6			Wet, gray very fine SANDand silt,		
		100%	8			trace clay, shells		
52			10					
53	A-N						Sch. 40 PVC Riser	
54								
55								
			2			Wet, gray SILT and very fine sand	cement	
56	S-6	1.2	2			trace clay, shells	bentonite	
		60%	2				grout	
57			4					
58	A-N							
59								
60								
			2			Wet, gray very fine SANDand silt,		
61	S-7	1.8	4			trace clay, shells		
		90%	7					
62			11					
63	A-N							
64							top of bentonite '@ 65'	
65								
			7			Wet, gray very fine SANDand silt,		
66	S-8	2	9			trace clay, shells	top of sand @ 67'	
		100%	10					
67			18					
68							No. 1 Qtz sand	
69								
70							top of screen @ 70'	
	S-9		2			Match to Sheet 5		

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin
DRILLER: Gary Ellingworth BORING NO.: 3GW20A SHEET 4 OF 5

Baker

Michael Baker Jr., Inc.

TEST BORING AND WELL CONSTRUCTION RECORD

PROJECT: Remedial Investigation - Groundwater Operable Unit I

CTO NO.: CTO-213 BORING NO.: 3GW20A

SAMPLE TYPE

S = Split Spoon A = Auger
T = Shelby Tube W = Wash
R = Air Rotary C = Core
D = Denison P = Piston N = No Sample

DEFINITIONS

SPT = Standard Penetration Test (ASTM D1586)
PID = Photo Ionization Detector Measurement
MSL = Mean Sea Level
ps/bg = point source/background

Depth (Ft.)	Sample Type & No.	Sample Rec. (Ft.,%)	SPT	Lab ID	PID (ppm) ps/bg	Visual Description	Well Installation Detail	Elevation (Ft. MSL)
71	S-9	2	6			Wet, gray very fine SANDand silt,	No. 1 Qtz sand	
72		100%	6			trace clay, shells		
73			6					
74	A-N						0.10 slot PVC screen	
75								
76	S-10	2	4			Wet, gray very fine SANDand silt,		
77		100%	7			trace clay, shells		
78			12					
79	A-N		17				Bottom of screen @ 80'	
80								
81						EOB @ 80-ft		
82								
83								
84								
85								
86								
87								
88								
89								
90								

DRILLING CO.: Parrott-Wolff, Inc. BAKER REP.: David Martin

DRILLER: Gary Ellingworth BORING NO.: 3GW20A SHEET 5 OF 5

	PROJECT NUMBER	WELL NUMBER		
CH2MHILL	358315.FI.FS	3GW21	SHEET 1	OF 1

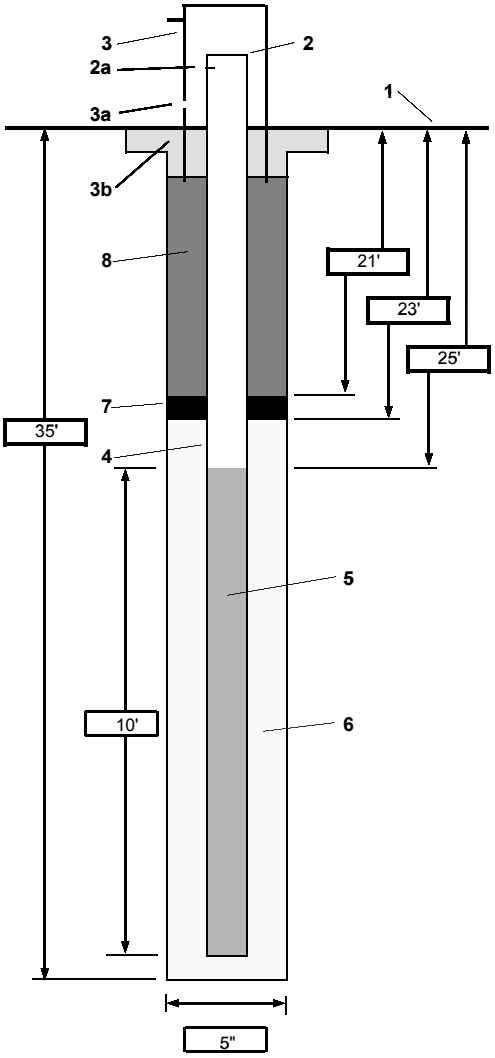
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 22.10 ft (TOC) START : 02/10/2009 END : 02/10/2009 LOGGER : Pat Murphy



1-	Ground elevation at well	
2-	Top of casing elevation	
	a) vent hole?	
3-	Wellhead protection cover type	Stick-up
	a) Bollards	Four bollards
	b) concrete pad dimensions	2' diameter sonotube
4-	Dia./type of well casing	2" Sch 40 PVC
5-	Type/slot size of screen	2" PVC Sch 40 10 slot
6-	Type screen filter	#1 silica pack
	a) Quantity used	6
7-	Type of seal	Bentonite 3/8" chips
	a) Quantity used	
8-	Grout	
	a) Grout mix used	Portland Cement and Bentonite
	b) Method of placement	Pour
	c) Vol. of well casing grout	
	Development method	Whale Pump
	Development time	1.5 hours
	Estimated purge volume	20 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	3GW22	SHEET 1	OF 1

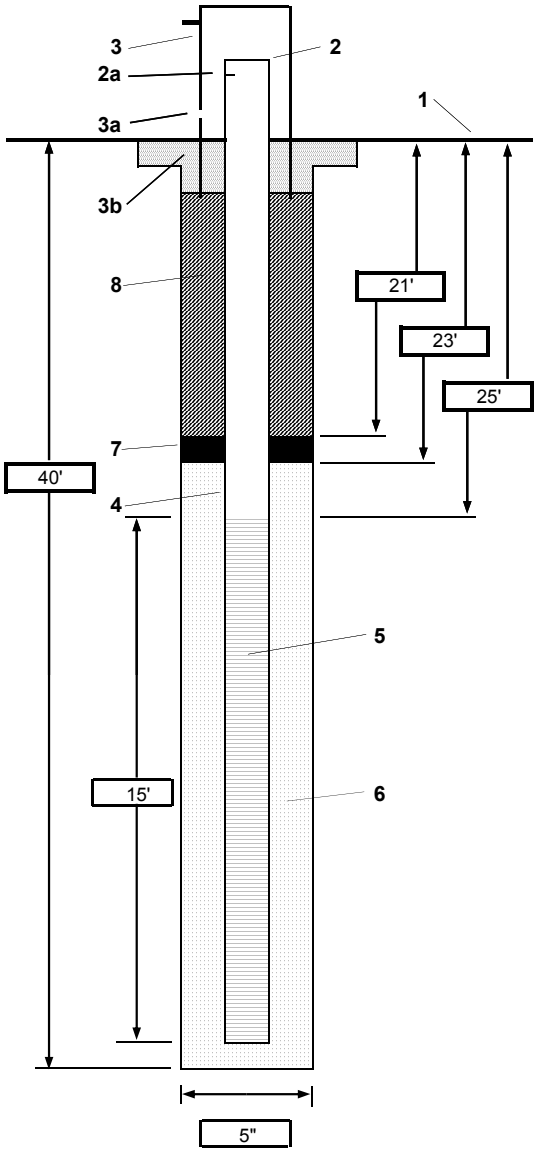
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 31.50 ft (TOC) START : 02/11/2009 END : 02/11/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 10

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

	PROJECT NUMBER	WELL NUMBER
CH2MHILL	358315.FI.FS	3GW23 SHEET 1 OF 1

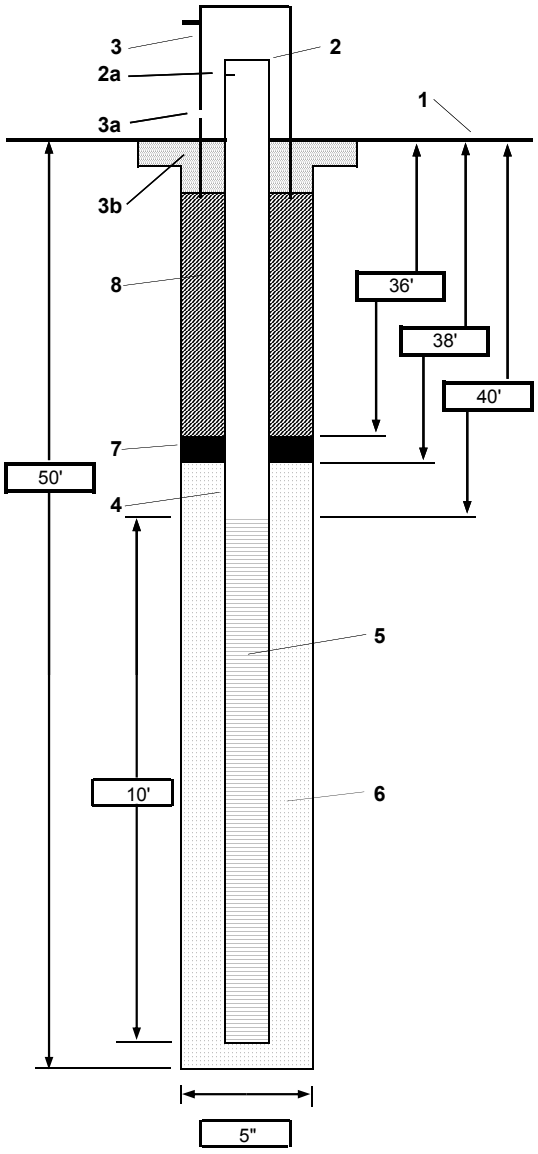
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 27.72 ft (TOC) START : 02/11/2009 END : 02/12/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	3GW24	SHEET 1	OF 1

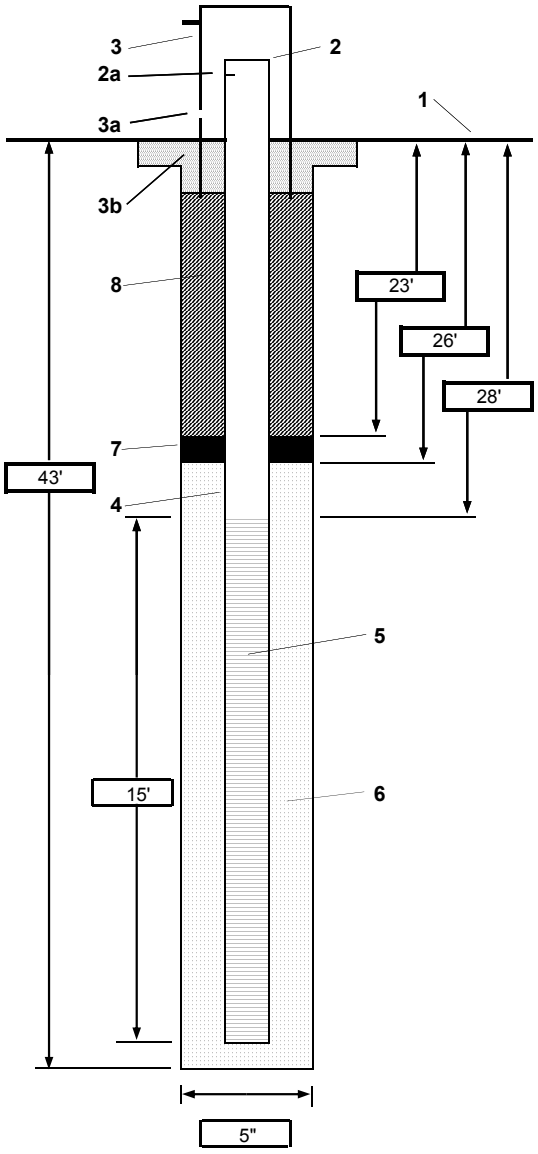
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 38.35 ft (TOC) START : 02/17/2009 END : 02/17/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 10

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	**3GW25**	SHEET 1	OF 1

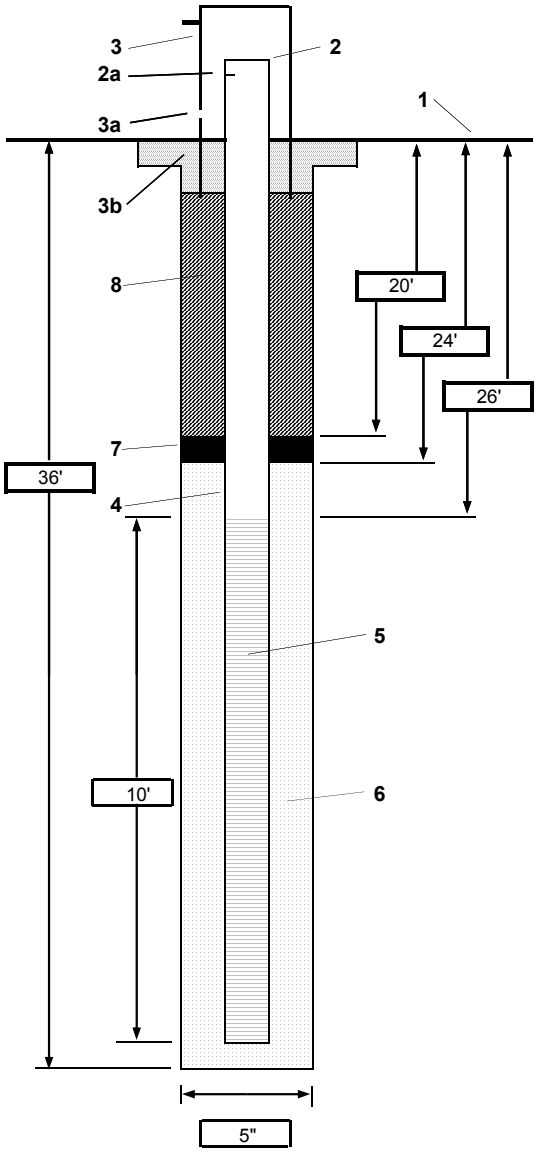
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 29.80 ft (TOC) START : 02/12/2009 END : 02/13/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	3GW26	SHEET 1	OF 1

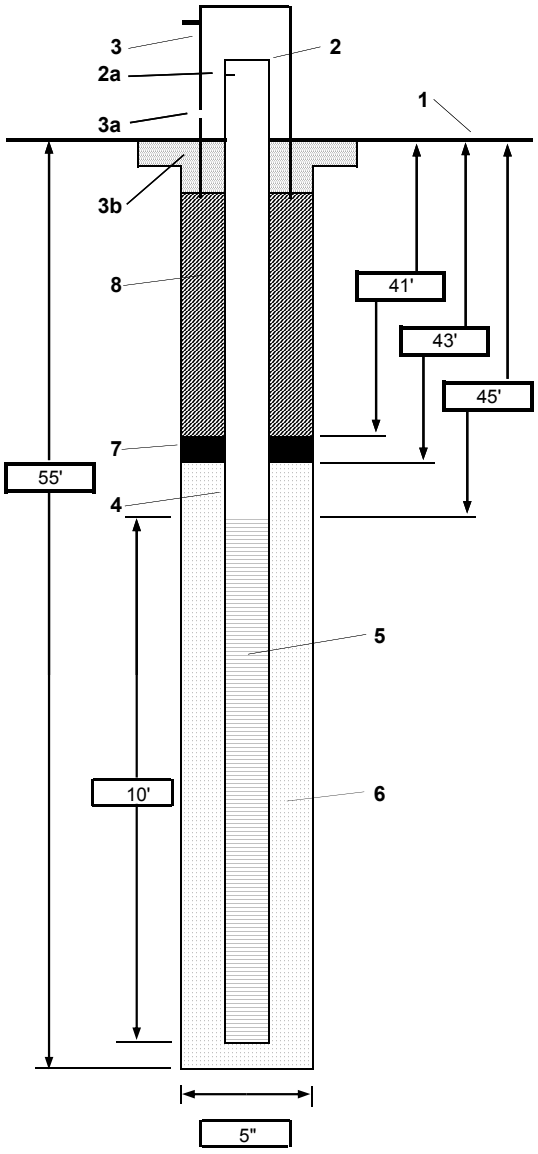
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 26.19 ft (TOC) START : 02/19/2009 END : 02/19/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	3GW27	SHEET 1	OF 1

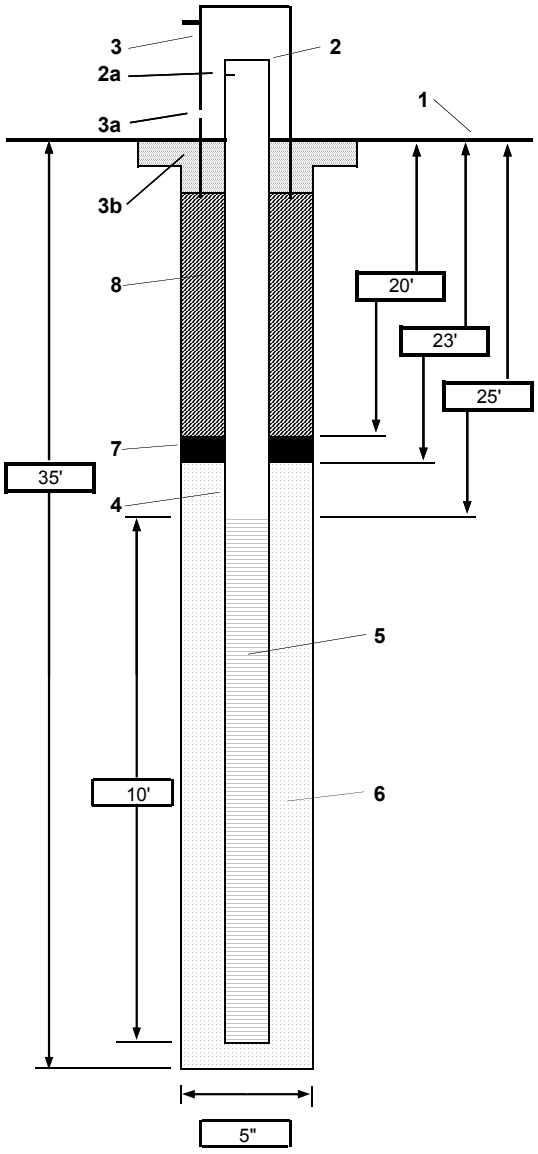
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 27.95 ft (TOC) START : 02/16/2009 END : 02/16/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	3GW28	SHEET 1	OF 1

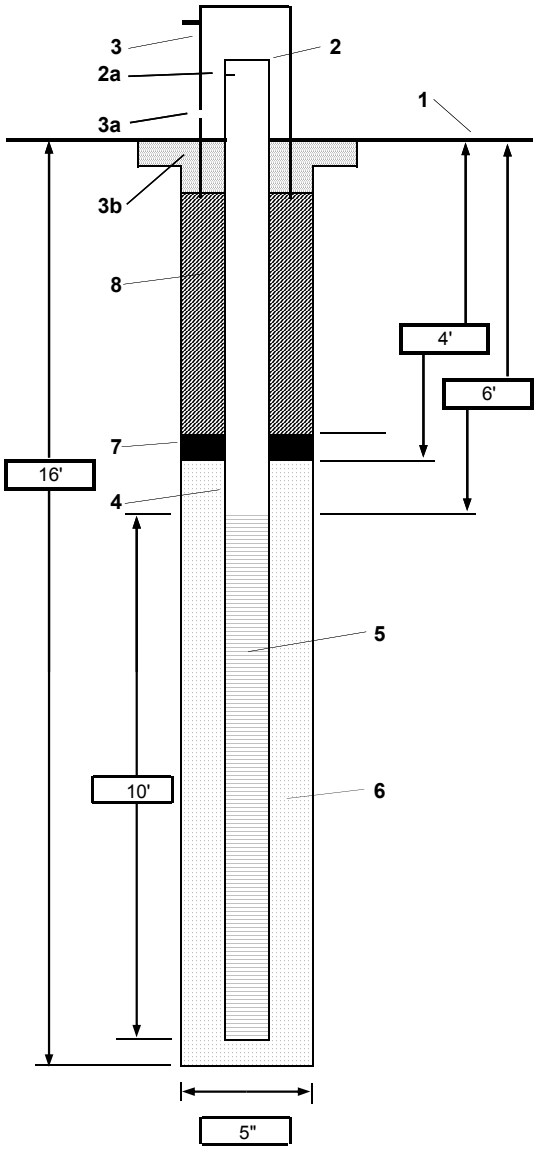
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 3.00 ft (TOC) START : 02/18/2009 END : 02/18/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 5

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used
b) Method of placement
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 35 gallons

Comments: Seal was set to surface due to shallow depth.
No grout was used

PROJECT NUMBER	WELL NUMBER		
358315.FI.FS	**3GW29**	SHEET 1	OF 1

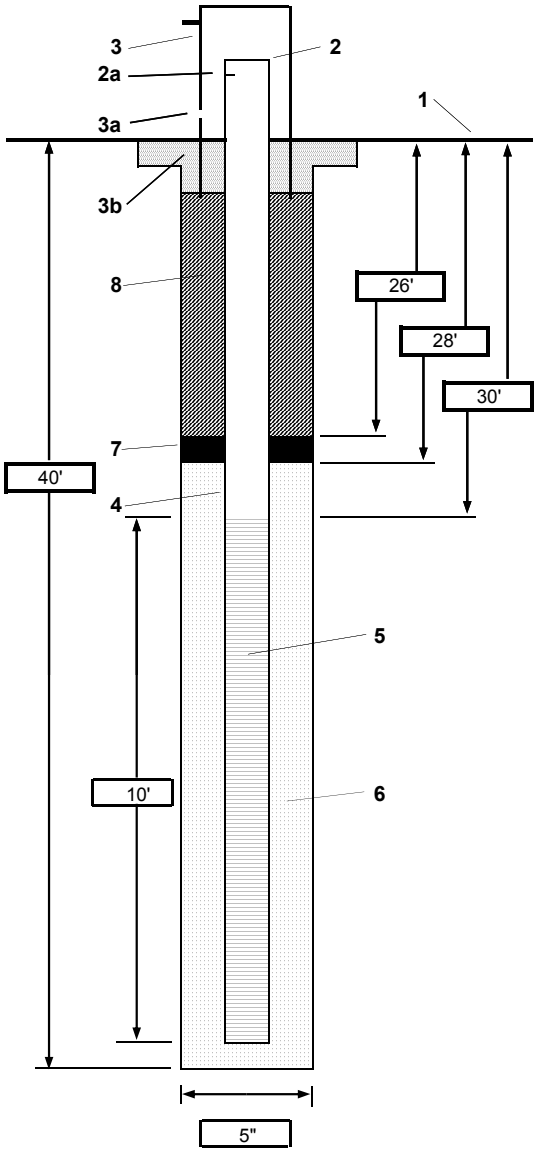
WELL COMPLETION DIAGRAM

PROJECT : Phase II RI Sites 1, 3, and 6 LOCATION : NWS Yorktown - Site 3

DRILLING CONTRACTOR : Parratt-Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 31.00 ft (TOC) START : 03/26/2009 END : 03/26/2009 LOGGER : Pat Murphy



1- Ground elevation at well

2- Top of casing elevation
a) vent hole?

3- Wellhead protection cover type: Stick-up
a) Bollards: Four bollards
b) concrete pad dimensions: 2' diameter sonotube

4- Dia./type of well casing: 2" Sch 40 PVC

5- Type/slot size of screen: 2" PVC Sch 40 10 slot

6- Type screen filter: #1 silica pack
a) Quantity used: 6

7- Type of seal: Bentonite 3/8" chips
a) Quantity used

8- Grout
a) Grout mix used: Portland Cement and Bentonite
b) Method of placement: Pour
c) Vol. of well casing grout

Development method: Whale Pump

Development time: 2.5 hours

Estimated purge volume: 30 gallons

Comments

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW21	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 24.85 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 22.1 ft (TOC) START : 2/10/09 END : 2/10/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0'-4'	40"/48"	1		**0'-2'**: topsoil w/ organics and fill material **2'-4'**: clayey SAND (SC), 10YR7/1 light gray, moist f/g medium dense SAND w/ clay	PID=0.0 ppm
5						
	4'-8'	48"/48"	2		sandy CLAY (SC), 10YR71 light grey mottled w/ 10YR4/4 dark yellowish brown, moist, still clay w/ f/g sand	
10						
	8'-12'	48"/48"	3		**8'-11'**: sandy CLAY (SC), 10YR7/1 light gray mottled w/ 10YR4/4 dark yellowish brown, moist, soft-med CLAY w/ f/g sand **11'-12'**: silty clayey SAND (SM) 10YR5/8 yellowish brown, moist, f/g loose SAND w/ shell hash (~60%).	
15						
	12'-16'	48"/48"	4		silty sandy CLAY (ML), 10YR6/1 gray, moist-wet, soft-med CLAY w/ sands and silts, shell ha	
20	16'-20'	30"/48"	5		silty sandy CLAY (ML), 2.5Y5/3 light olive brown, moist-wet, soft CLAY w/ sands and silts, shell hash	
	20'-24'	36"/48"	6		silty SAND (SM), 2.5Y5/2 grayish brown, wet, f/g loose SAND w/ silts and shell hash	
25						
	24'-28'	40"/48"	7		silty SAND (SM), 2.5Y5/3 light olive brown, saturated f/g very loose SAND w/ silts and shell hash	
30						
	28'-32'	46"/48"	8		silty SAND (SM), 2.5Y5/3 light olive brown, saturated f/g very loose SAND w/ silts and trace shell hash	
35						
	32'-36'	24"/48"	9		silty SAND (SM), SAA except more shell hash present	

Well Screened from 25'-35' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW22	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 35.27 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 31.5 ft (TOC) START : 2/11/09 END : 2/11/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	40"/48"	1		sandy CLAY (SC), 10YR5/8 yellowish brown, dry-moist stiff CLAY w/ f/g poorly graded sand and fil	PID=1.0 ppm
	4'-8'	48"/48"	2		SAA except organics present	PID=2.7ppm
10	8'-12'	40"/48"	3		sandy CLAY (SC), 7.5YR5/8 strong brown, dry-moist medium stiff CLAY w/ f/g poorly graded sand	PID=35.2 ppm at 9'
15	12'-16'	48"/48"	4		sandy CLAY (SC), 10YR5/8 yellowish brown, dry-moist, stiff CLAY w/ f/g poorly graded sand	PID=33.0 ppm at 15.5'
20	16'-20'	48"/48"	5		sandy CLAY (SC), 10YR6/1 gray mottled w/ strong brown, dry-moist, medium stiff CLAY w/ f/g poorly graded sand	PID=128 ppm between 16'-17'
25	20'-24'	48"/48"	6		**20'-21'**:sandy CLAY (SC), 10YR4/6 dark yellowish brown dry-moist, medium stiff CLAY w/ poorly graded sand **22'-24'**: silty clayey SAND (SM), 10YR5/6 yellowish brown, moist, f/g well graded SAND w/ silts, clay, and shell hash	PID=73 ppm between 20'-21'
30	24'-28'	48"/48"	7		clayey silty SAND (SM), 10YR6/1 gray, moist-wet f/g loose well graded SAND w/ silts clay and shell hash	PID=3.0 ppm
	28'-32'	36"/48"	8		silty SAND (SM), 2.5Y5/4 light olive brown, saturated, f/g very loose SAND w/ silts and shell hash	PID=1.0 ppm
35	32'-36'	18"/48"	9		SAA	PID=1.1 ppm
40	36'-40'	48"/48"	10		SAA	PID=0.6 ppm

Well Screened from 25'-40' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW23	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 30.39 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 27.72 ft (TOC) START : 2/11/09 END : 2/12/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
	0'-4'	42"/48"	1		**0'-2'**: clayey SAND (SC), 10YR4/1 dark gray, dry-moist, well graded, medium dense SAND **2'-4'**: sandy CLAY (SC) 10YR7/1 light gray mottled w/ 10YR5/8 yellowish brown, dry moist, very stiff CLAY w/ f/g sand	PID=1.0 ppm
5						
	4'-8'	48"/48"	2		sandy CLAY (SC), 10YR4/6 dark yellowish brown moist, very stiff CLAY w/ f/g poorly graded sand	PID=0.6 ppm
10						
	8'-12'	48"/48"	3		sandy CLAY (SC), 10YR6/1 gray mottled w/ varied browns, dry-moist, medium stiff CLAY w/ f/g poorly graded sand	PID=0.6 ppm
15						
	12'-16'	46"/48"	4		**12'-15':** SAA **15'-16'**: clayey silty SAND (SM), 10YR4/6 dark yellowish brown, dry-moist, f/g well graded medium dense SAND w/ clays, silts, and shell hash	PID=1.0 ppm
20	16'-20'	48"/48"	5		sandy silty CLAY (ML), 10YR 6/1 gray, dry-moist medium stiff CLAY w/ silts, sand, and shell hash	PID=1.0 ppm
	20'-24'	40"/48"	6		SAA except moist-wet	PID=1.0 ppm
25						
	24'-28'	48"/48"	7		SAA	PID=0.8 ppm
30						
	28'-32'	36"/48"	8		silty SAND (SM), 2.5Y5/3 light olive brown, saturated f/g very loose well graded SAND w/ silts and shell hash	PID=0.0 ppm
35						
	32'-36'	36"/48"	9		SAA	PID=0.0 ppm
40	36'-40'	48"/48"	10		silty SAND (SM), GLEY2 4/1 dark bluish gray, saturated, f/g very loose SAND w/ silts and shell hash	PID=0.0 ppm
	40'-44'	48"/48"	11		SAA	PID=0.0 ppm
45						
	44'-48'	48"/48"	12		SAA except SAND is more dense near bottom of liner	PID=0.1 ppm
50						
	48'-52'	48"/48"	13		silty SAND (SM), GLEY2 4/1 dark bluish gray, saturated, f/g very loose SAND w/ silts, trace clay, and shell hash	PID=0.0 ppm

Well Screened from 40'-50' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW24	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 41.79 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 38.35 ft (TOC) START : 2/17/09 END : 2/17/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	24"/48"	1		SAND (SW), 10YR5/2 grayish brown, dry, medium coarse, well graded loose SAND w/ fill material	PID=0.0 ppm
	4'-8'	48"/48"	2		CLAY (CL), 10YR5/8 yellowish brown mottled w/ 10YR7/1 light gray, dry, very still CLAY w/silts and trace sand, no plasticity	PID=1.1 ppm
10	8'-12'	40"/48"	3		SAA except a 6" f/g sand lens at 9'	PID=0.4 ppm
15	12'-16'	48"/48"	4		SAND (SP), 10YR7/2 light gray, dry, f/g poorly graded loose SAND w/ trace silts	PID=0.2 ppm
20	16'-20'	45"/48"	5		sandy silty CLAY (ML), 10YR5/8 yellowish brown mottled w/ light gray, dry, very stiff CLAY w/ silts, f/g sands and no plasticity	PID=1.1 ppm
	20'-24'	48"/48"	6		SAA	PID=0.2 ppm
25	24'-28'	48"/48"	7		SAA except CLAY is moist	PID=1.2 ppm
30	28'-32'	48"/48"	8		sandy silty CLAY (CL), 10YR5/6 yellowish brown, moist, medium stiff CLAY w/ silts and sands, slight plasticity, shell hash	PID=unable to take reading
35	32'-36'	48"/48"	9		sandy silty CLAY (CL), 10YR5/2 grayish brown, wet, soft CLAY w/ silts, sand, and shell hash	PID=unable to take reading
40	36'-40'	48"/48"	10		SAA	PID=unable to take reading
	40'-44'	48"/48"	11		SAA except saturated and very soft CLAY	PID=unable to take reading

Well Screened from 28'-43' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW25	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 32.69 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 29.8 ft (TOC) START : 2/12/09 END : 2/13/09 LOGGER : Patrick Murphy/Mark Ost

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	12"/48"	1		SAND (SP), 2.5Y6/4 light yellowish brown, dry, f/g loose poorly graded SAND	PID=0.0 ppm
	4'-8'	48"/48"	2		**4'-5'**: SAA **5'-8'**: CLAY (CL), 10YR6/8 yellowish brown mottled w/ 10YR7/1 light gray, dry-moist, very stiff CLAY w/ very little sand	PID=0.0 ppm
10	8'-12'	48"/48"	3		**8'-11'**: SAA **11'-12'**: sandy CLAY (SC), 10YR6/8 yellowish brown mottled w/ light gray, dry, soft CLAY w/ well graded medium grained sand, organics	PID=0.0 ppm
15	12'16'	48"/48"	4		clayey SAND (SC), 10YR5/4 yellowish brown, dry, medium grained well graded very dense SAND w/ some clay and organics	PID=0.0 ppm
20	16'-20'	48"/48"	5		SAA except at **17.5'** soil is black 10YR2/1 in a range of ~6", organics present	PID=3.3 ppm at 17.5'
25	20'-24'	40"/48"	6		SAA	PID=0.0 ppm
	24'-28'	48"/48"	7		**24'-25'**: silty SAND (SM), 7.5YR5/6, dry, medium dense SAND w/ iron staining **25'-28'**: silty CLAY (CL), 10YR3/3, moist, low density shell fragments	PID= low battery unable to take readings
30	28'-32'	48"/48"	8		fine SAND (SP), 10YR7/4, moist, loose SAND w/ shell fragments	PID= low battery unable to take readings
35	32'-36'	48'/48"	9		SAA	PID= low battery unable to take readings

Well Screened from 26'-36' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW26	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 29.76 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 26.19 ft (TOC) START : 2/18/09 END : 2/19/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	24"/48"	1		SAND (SP), 2.5Y6/3 light yellowish brown, dry-moist f/g poorly graded loose SAND	PID=0.0 ppm
	4'-8'	32"/48"	2		**4'-5'**: SAA **5'-7'**: sandy CLAY (SC), 10YR5/8 yellowish brown mottled w/ light gray, dry-moist, medium-stiff CLAY w/ f/g sand, low plasticity	PID=0.0 ppm
10	8'-12'	48"/48"	3		SAA except very little sand	PID=0.0 ppm
15	12'-16'	48"/48"	4		SAA	PID=0.0 ppm
20	16'-20'	46"/48"	5		**16'-18'**: SAA **18'-20'**: silty CLAY (ML), 10YR5/2 grayish brown, moist-wet, soft CLAY w/ silts, slight plasticity	PID=0.0 ppm
	20'-24'	48"/48"	6		sandy silty CLAY (ML), 2.5Y5/2 grayish brown, moist-wet, soft CLAY w/ sands, silts and shell hash	PID=0.0 ppm
25	24'-28'	48"/48"	7		SAA except wet	PID=0.0 ppm
30	28'-32'	48"/48"	8		silty SAND (SM), 10YR5/4 yellowish brown, saturated, f/g very loose SAND w/ silts and shell hash	PID=unable to take readings
35	32'-36'	48"/48"	9		SAA	PID=unable to take readings
40	36'-40'	48"/48"	10		SAA	PID=unable to take readings
	40'-44'	48"/48"	11		silty SAND (SM), GLEY2 4/1 dark bluish gray, saturated, f/g very loose SAND w/ silts and shell hash	PID=unable to take readings
45	44'-48'	48"/48"	12		SAA	PID=unable to take readings
50	48'-52'	48"/48"	13		SAA	PID=unable to take readings
55	52'-56'	48"/48"	14		SAA	PID=unable to take readings

Well Screened from 45'-55' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW27	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 27.03 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 27.95 ft (TOC) START : 2/16/09 END : 2/16/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	20"/48"	1		sandy CLAY (SC), 10YR4/6 dark yellowish brown, dry-moist, stiff CLAY w/ sand and organics	PID= low battery unable to take readings
	4'-8'	36"/48"	2		sandy CLAY (SC), 10YR4/6 dark yellowish brown mottled w/ 10YR7/1 light gray, dry-moist, stiff CLAY w/ sand and organics	PID= low battery unable to take readings
10	8'-12'	48"/48"	3		sandy CLAY (SC), 10YR5/8 yellowish brown mottled w/ light gray, dry-moist, soft-medium stiff CLAY w/ sand, trace silts, and organics, no plasticity	PID= low battery unable to take readings
15	12'-16'	48"/48"	4		**12'-15'**: CLAY (CL), 10YR4/6 dark yellowish brown, dry-moist, very stiff CLAY w/ organics **15'-16'**: silty SAND (SM), 10YR5/8 yellowish brown dry-moist, medium grained loose SAND w/ shell hash	PID= low battery unable to take readings
20	16'-20'	48"/48"	5		clayey silty SAND (SM), 10YR5/1 gray, moist, f/g loose SAND w/ silts, clays, and shell hash	PID= low battery unable to take readings
25	20'-24'	48"/48"	6		SAA except moist-wet	PID= low battery unable to take readings
	24'-28'	24"/48"	7		silty SAND (SM), 10YR5/2 grayish brown, saturated, f/g very loose SAND w/ silts and shell hash	PID= low battery unable to take readings
30	28'-32'	48"/48"	8		SAA	PID= low battery unable to take readings
35	32'-36'	48"/48"	9		SAA except medium dense in lost ft (36')	PID= low battery unable to take readings

Well Screened from 25'-35' bgs

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW28	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 5.56 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 3.00 ft (TOC) START : 2/18/09 END : 2/18/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	12"/48"	1		SAND (SP), 2.5Y6/2 light brownish gray, wet, loose SAND	PID=0.0 ppm
	4'-8'	36"/48"	2		silty SAND (SM), 2.5Y6/2 light brownish gray, wet, loose SAND w/ silts	PID=0.2 ppm
10	8'-12'	48"/48"	3		SAA except color is 10YR5/8 yellowish brown	PID=0.0 ppm
15	12'-16'	48"/48?	4		silty SAND (SM), 2.5Y6/2 light brownish gray, saturated, very loose SAND w/ silts	PID=1.6 ppm

Well Screened from 6'-16' bgs

CH2MHILL

PROJECT NUMBER	BORING NUMBER	
358315.FI.FS	YS03-GW29	SHEET 1 OF 1

SOIL BORING LOG

PROJECT :CTO-166 Sites 1, 3, 6, and 7 LOCATION : Yorktown NWS

ELEVATION : 28.83 ft msl (TOC) DRILLING CONTRACTOR : Parratt Wolff

DRILLING METHOD AND EQUIPMENT USED : 4 1/4 inch ID Hollow Stem Auger on 850X ATV Rig

WATER LEVELS : 31.00 ft (TOC) START : 2/26/09 END : 2/26/09 LOGGER : Patrick Murphy

DEPTH BELOW SURFACE (FT)	INTERVAL (FT)	RECOVERY (IN)	#/TYPE	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	CORE DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY, OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY.	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS, AND INSTRUMENTATION.
5	0'-4'	20"/48"	1		SAND (SW), 10YR5/8 yellowish brown, dry, coarse loose well graded SAND w/ organics	PID=0.0 ppm
	4'-8'	36"/48"	2		SAND (SP), 10YR6/4 light yellowish brown, dry, f/g loose poorly graded SAND	PID=0.6ppm
10	8'-12'	48"/48"	3		CLAY (CL), 10YR4/6 dark yellowish brown mottled w/ light gray, dry-moist, medium stiff CLAY w/ v. slight plasticity	PID=0.0ppm
15	12'-16'	40"/48"	4		sandy CLAY (SC), 10YR5/8 yellowish brown mottled w/ light gray, dry-moist, medium stiff CLAY w/ f/g sands	PID=1.0ppm
20	16'-20'	48"/48"	5		sandy silty CLAY (CL), 2.5Y5/3 light olive brown, dry-moist, medium stiff CLAY w/ silts, trace sands, and shell hash	PID=6.4ppm
	20'24'	36"/48"	6		SAA except moist and more sand	PID=5.4ppm
25	24'-28'	48"/48"	7		**24'-26'**: SAA **26'-28'**: silty SAND (SM), 2.5Y5/4 light olive brown wet-saturated, f/g loose SAND w/ silts and shell hash	PID=0.6ppm
30	28'-32'	48"/48"	8		silty SAND (SM), 2.5Y5/4 light olive brown, saturated f/g loose SAND w/ silts and shell hash	PID=0.0ppm
35	32'-36'	48"/48"	9		SAA except SAND becomes more dense between **32'-34'**	PID=0.0ppm
40	36'-40'	48"/48"	10		silty SAND (SM), 2.5Y5/4 light olive brown, saturated f/g loose SAND w/ silts and shell hash	PID=0.0ppm

Well Screened from 30'-40' bgs

Appendix C
Well Survey Report

Well Survey Results for Sites 1 and 3

Site 1

Monitoring Well	Northing (Y)	Easting (X)	Concrete Surface (ft msl)	Elevation Top of Pipe (ft msl)
1GW22	3623958.75	12045625.85	37.35	39.54
1GW23	3623746.26	12046152.36	14.42	16.91
1GW24	3623772.10	12046335.78	32.49	35.25
1GW25	3623926.20	12046450.39	28.56	31.55

Site 3

Monitoring Well	Northing (Y)	Easting (X)	Concrete Surface (ft msl)	Elevation Top of Pipe (ft msl)
3GW21	3623277.16	12046471.20	22.27	24.85
3GW22	3623257.73	12046329.57	32.56	35.27
3GW23	3623160.48	12046302.42	28.04	30.39
3GW24	3623311.00	12046310.66	38.82	41.79
3GW25	3623389.62	12046303.61	29.94	32.69
3GW26	3623338.26	12046208.58	27.12	29.76
3GW27	3623404.17	12046387.16	24.53	27.03
3GW28	3623444.62	12046293.70	3.19	5.56
3GW29	3623552.87	12046613.87	26.01	28.83

Shots taken on wells were marked with black marker on the top of the PVC

Appendix D
Waste Profile

AIR WATER & SOIL LABORATORIES, INC.®
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Certificate of Analysis

Final Report

Laboratory Order ID 09040138

Client Name: Potomac Environmental, Inc.
2105 Lake Ave.
Richmond, VA 23230

Date Received: April 08, 2009
Date Issued: April 22, 2009

Submitted To: Weegie Thompson
Client Site I.D.: NWS Yorktown

Project Number: 358315.FI.FS
Purchase Order NA

Sample I.D.: YSOB-IDW 040709
Date/Time Sampled: 04/07/09 10:29

Laboratory Sample I.D.: 09040138-001

Parameter	Method	Sample Results	Rep Limi	Analysis Date/Time	Analyst
TCLP Extraction Fluid	SW1311	Aqueous sample; not rotated	--		
TCLP Arsenic	SW6010C	< 0.1 mg/L	0.100	04/15/09 16:57	CGT
TCLP Barium	SW6010C	< 0.5 mg/L	0.500	04/15/09 16:57	CGT
TCLP Cadmium	SW6010C	< 0.1 mg/L	0.100	04/15/09 16:57	CGT
TCLP Chromium	SW6010C	< 0.1 mg/L	0.100	04/15/09 16:57	CGT
TCLP Lead	SW6010C	< 0.1 mg/L	0.100	04/15/09 16:57	CGT
TCLP Mercury	SW7470A	< 0.008 mg/L	0.008	04/16/09 13:55	NBA
TCLP Selenium	SW6010C	< 0.25 mg/L	0.250	04/15/09 16:57	CGT
TCLP Silver	SW6010C	< 0.1 mg/L	0.100	04/15/09 16:57	CGT
Dichlorodifluoromethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Chloromethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Vinyl chloride	SW8260B	2.8 ug/L	1.0	04/21/09 16:32	DMB/MKD
Bromomethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Chloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Trichlorofluoromethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Acetone	SW8260B	21.4 ug/L	10.0	04/21/09 16:32	DMB/MKD
Iodomethane	SW8260B	< 10 ug/L	10.0	04/21/09 16:32	DMB/MKD
Carbon disulfide	SW8260B	< 10 ug/L	10.0	04/21/09 16:32	DMB/MKD
Methylene chloride	SW8260B	< 4 ug/L	4.0	04/21/09 16:32	DMB/MKD
trans-1,2-Dichloroethylene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1-Dichloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Vinyl acetate	SW8260B	< 10 ug/L	10.0	04/21/09 16:32	DMB/MKD
2,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
cis-1,2-Dichloroethylene	SW8260B	163 ug/L	1.0	04/21/09 16:32	DMB/MKD
2-Butanone (MEK)	SW8260B	< 10 ug/L	10.0	04/21/09 16:32	DMB/MKD
Bromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Chloroform	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1,1-Trichloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Carbon tetrachloride	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD

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Submitted To: Weegie Thompson
Project Number: 358315.FI.FS

Client Site I.D.: NWS Yorktown
Purchase Order NA

Sample I.D.: YSOB-IDW 040709
Laboratory Sample I.D.: 09040138-001

Date/Time Sampled: 04/07/09 10:29

Parameter	Method	Sample Results	Rep Limi	Analysis Date/Time	Analyst
Benzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2-Dichloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Trichloroethylene	SW8260B	527 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Dibromomethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Bromodichloromethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
cis-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
4-Methyl-2-pentanone (MIBK)	SW8260B	< 10 ug/L	10.0	04/21/09 16:32	DMB/MKD
Toluene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
trans-1,3-Dichloropropene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1,2-Trichloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Tetrachloroethylene (PCE)	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,3-Dichloropropane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
2-Hexanone (MBK)	SW8260B	< 10 ug/L	10.0	04/21/09 16:32	DMB/MKD
Dibromochloromethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2-Dibromoethane (EDB)	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Chlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1,1,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Ethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
m,p-Xylenes	SW8260B	< 2 ug/L	2.0	04/21/09 16:32	DMB/MKD
o-Xylene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Xylenes, Total	SW8260B	< 3 ug/L	3.0	04/21/09 16:32	DMB/MKD
Styrene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Bromoform	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Isopropylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Bromobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,1,2,2-Tetrachloroethane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2,3-Trichloropropane	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
n-Propylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
2-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
4-Chlorotoluene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,3,5-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD

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2105 Lake Ave.
Richmond, VA 23230

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Date Issued: April 22, 2009

Submitted To: Weegie Thompson
Client Site I.D.: NWS Yorktown

Project Number: 358315.FI.FS
Purchase Order NA

Sample I.D.: YSOB-IDW 040709
Date/Time Sampled: 04/07/09 10:29

Laboratory Sample I.D.: 09040138-001

Parameter	Method	Sample Results	Rep Limi	Analysis Date/Time	Analyst
tert-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2,4-Trimethylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
sec-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,3-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
p-Isopropyltoluene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,4-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2-Dichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
n-Butylbenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2-Dibromo-3-chloropropane (DBCP)	SW8260B	< 4 ug/L	4.0	04/21/09 16:32	DMB/MKD
1,2,4-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Hexachlorobutadiene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Naphthalene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
1,2,3-Trichlorobenzene	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
MTBE	SW8260B	< 1 ug/L	1.0	04/21/09 16:32	DMB/MKD
Di-isopropyl ether (DIPE)	SW8260B	< 5 ug/L	5.0	04/21/09 16:32	DMB/MKD
Benzoic acid	SW8270D	< 50 ug/L	50.0	04/13/09 15:37	JHV
4-Chloro-3-methylphenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2-Chlorophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
p-Cresol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
o-Cresol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Cresols, Total	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,4-Dichlorophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,6-Dichlorophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,4-Dimethylphenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
4,6-Dinitro-2-methylphenol	SW8270D	< 50 ug/L	50.0	04/13/09 15:37	JHV
2,4-Dinitrophenol	SW8270D	< 50 ug/L	50.0	04/13/09 15:37	JHV
Ethyl methanesulfonate	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV
Methyl methanesulfonate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2-Nitrophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
4-Nitrophenol	SW8270D	< 50 ug/L	50.0	04/13/09 15:37	JHV
Pentachlorophenol	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV

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Date/Time Sampled: 04/07/09 10:29

Laboratory Sample I.D.: 09040138-001

Parameter	Method	Sample Results	Rep Limi	Analysis Date/Time	Analyst
Phenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,3,4,6-Tetrachlorophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,4,5-Trichlorophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,4,6-Trichlorophenol	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Acenaphthene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Acenaphthylene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Anthracene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Azobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Benzo (a) anthracene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Benzo (b) fluoranthene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Benzo (k) fluoranthene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Benzo (g,h,i) perylene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Benzo (a) pyrene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
4-Bromophenyl phenyl ether	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Butyl benzyl phthalate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
bis (2-Chloroethoxy) methane	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
bis (2-Chloroethyl) ether	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
bis (2-Chloroisopropyl) ether	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2-Chloronaphthalene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
4-Chlorophenyl phenyl ether	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Chrysene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Dibenz (a,h) anthracene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Di-n-butyl phthalate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1,2-Dichlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1,3-Dichlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1,4-Dichlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Diethyl phthalate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Dimethyl phthalate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,4-Dinitrotoluene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2,6-Dinitrotoluene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Di-n-octyl phthalate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
bis (2-Ethylhexyl) phthalate	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV

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Parameter	Method	Sample Results	Rep Limi	Analysis Date/Time	Analyst
Fluoranthene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Fluorene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Hexachlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Hexachlorobutadiene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Hexachlorocyclopentadiene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Hexachloroethane	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Indeno (1,2,3-cd) pyrene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Isophorone	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Naphthalene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Nitrobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
N-Nitrosodimethylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
N-Nitrosodiphenylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
N-Nitrosodi-N-propylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Phenanthrene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Pyrene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Pyridine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1,2,4-Trichlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Benzidine	SW8270D	< 50 ug/L	50.0	04/13/09 15:37	JHV
3,3-Dichlorobenzidine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Aniline	SW8270D	< 50 ug/L	50.0	04/13/09 15:37	JHV
Benzyl alcohol	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV
4-Chloroaniline	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Dibenzofuran	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2-Methylnaphthalene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2-Nitroaniline	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV
3-Nitroaniline	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV
4-Nitroaniline	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV
Acetophenone	SW8270D	< 20 ug/L	20.0	04/13/09 15:37	JHV
4-Aminobiphenyl	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1-Chloronaphthalene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Dibenz (a,j) acridine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
p-Dimethylaminoazobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV

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Parameter	Method	Sample Results	Rep Limi	Analysis Date/Time	Analyst
7,12-Dimethylbenz (a) anthracene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Diphenylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
3-Methylcholanthrene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1-Naphthylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
2-Naphthylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
N-Nitrosodi-N-butylamine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
N-Nitrosopiperidine	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Pentachlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Pentachloronitrobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Phenacetin	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Pronamide	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
1,2,4,5-Tetrachlorobenzene	SW8270D	< 10 ug/L	10.0	04/13/09 15:37	JHV
Corrosivity	SW7.2	Non-corrosive	--	04/09/09 12:09	WBP
Ignitability	SW1010	> 60 °C	15	04/09/09 11:32	WBP
Reactive Cyanide	SW7.3/SW9010B	See Attached	--		
Reactive Sulfide	SW7.3/SW9030B	See Attached	--		

Ted Soyars

Laboratory Manager

P 2/2
8043588297
8042885045 >>
Potomac Environmental
2009-04-08 09:56
2009-04-08 09:44
8043588297
Page 1

AIR WATER & SOIL LABORATORIES, INC.

2109A NORTH HAMILTON STREET
RICHMOND, VIRGINIA 23230
(804) 358-8295 PHONE
(804)358-8297 FAX

CTO 166

CHAIN OF CUSTODY

PAGE 1 OF 1

CLIENT NAME: Potomac Environmental / CH2M Hill	PROJECT NAME: NWS Yorktown
CLIENT CONTACT: Weegie Thompson	SITE NAME: 6, 3, 1, 25
CLIENT ADDRESS: 2105 Laburnum Richmond VA	PROJECT NUMBER: 358315.FI.FS
CLIENT PHONE NUMBER: 804 288 5043	P.O. NUMBER:
CLIENT FAX NUMBER:	EMAIL: WThompson@potomaccorp.com REGULATORY AUTHORITY:
Is sample for compliance reporting? YES (NO)	Is sample from a chlorinated supply? YES NO PWS I.D. #:
SAMPLER NAME (PRINT): ML OST	SAMPLER SIGNATURE: Turn Around Time: Per Contract Day(s)
Have ammonia and TKN samples been verified to be dechlorinated at the time of sampling? YES NO	

CLIENT SAMPLE I.D.	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Number of Containers	Grab	Composite	Field Filtered (Dissolved Metals)	MATRIX: Ground Water / Surface Water	Waste Water / Storm Water	Drinking Water	Soil	Solids	Other	ANALYSIS / (PRESERVATIVE): Reactivity Sulfide	Ignitability	Corrosivity	Sulfide	Cyanide	Reactive Cyanide	Metals - TCLP	COMMENTS: Quote I.D.:
1) YSOL-EDW 040709	4/7/09	1029	4/7/09	1029	6		X								✓	✓	✓	✓	✓	✓	✓	
2)																						
3)																						
4)																						
5)																						
6)																						
7)																						
8)																						
9)																						
10)																						PLEASE NOTE PRESERVATIVE(S) or PUSH RATE Limit

	DATE / TIME	RECEIVED	DATE / TIME
RELINQUISHED:			
RELINQUISHED:	4/7/09	[signature]	4/8/09 0830
RELINQUISHED:	DATE / TIME	RECEIVED:	DATE / TIME

QC Data Package: Level I ☐ Level II ☐ Level III ☐ Level IV ☐

LAB USE ONLY — COOLER TEMP 2.5 °C

PEI
NWS Yorktown

09040138
DUE: 10 Days
Recd: 04/08/09

AIR WATER & SOIL
LABORATORIES, INC.®
2109A North Hamilton Street • Richmond, Virginia 23230 • Tel: (804) 358-8295 Fax: (804) 358-8297

PEI
NWS Yorktown

09040138
DUE: 10 Days
Recd: 04/08/09

Sample Conditions Checklist

Opened by: (print) GW
(sign) MW
Lab ID No.:
Date Cooler Opened: 4/8/09

1. How were samples received?

Fed Ex	☐
UPS	☑
Courier	☐
Walk In	☐

		YES	NO	N/A
2.	Were custody seals used?	☑	☐	☐
3.	If yes, are custody seals unbroken and intact at the date and time of arrival?	☑	☐	☐
4.	Are the custody papers filled out completely and correctly?	☑*	☐	☐
5.	Do all bottle labels agree with custody papers?	☐	☐	☐
6.	Are the samples received on ice?	☑	☐	☐
7.	Is the temperature blank or representative sample within acceptable limits? (4 degrees Celsius +/-2)	☑	☐	☐
8.	Are all samples within holding time for requested tests?	☑	☐	☐
9	Is a sufficient amount of sample provided to perform the tests indicated?	☑	☐	☐
10	Are all samples in proper containers for the analyses requested?	☐	☑	☐
11	Are all samples appropriately preserved for the analyses requested?	☐	☑	☐
12	Are all volatile organic containers free of headspace?	☐	☑	☐

COMMENTS

*amended by W Thompson - see fax copy
poured VOC's into 40 mL VOA's @ Log-In

Appendix E
Data Validation Reports

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 0903044 and 0903045, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903044 and 0903045. The data validation was performed in accordance with the SW-846 8260B for volatiles and SW-846 Method 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS01-EB01-030909	0903044-04	water	X		X
YS01-EB01-031009	0903044-12	water	X	X	X
YS01-EB01-031109	0903044-17	water	X	X	X
YS01-EB01-031209	0903044-23	water	X	X	X
YS01-EB02-030909	0903044-05	water	X		X
YS01-EB02-031009	0903044-13	water	X	X	X
YS01-EB02-031109	0903044-18	water	X	X	X
YS01-FB01-030909	0903044-03	water	X	X	
YS01-GW05-0309	0903044-09	water	X	X	X
YS01-GW05A-0309	0903044-11	water	X	X	X
YS01-GW12A-0309	0903044-20	water	X	X	X
YS01-GW12AP-0309	0903044-24	water	X	X	X
YS01-GW13-0309	0903044-01	water	X	X	X
YS01-GW13A-0309	0903044-02	water	X	X	X
YS01-GW17-0309	0903044-22	water	X	X	X
YS01-GW18-0309	0903044-15	water	X	X	X
YS01-GW19-0309	0903044-16	water	X	X	X
YS01-GW21-0309	0903044-21	water	X	X	X
YS01-GW23-0309	0903044-07	water	X	X	X
YS01-GW24-0309	0903044-08	water	X	X	X
YS01-GW25-0309	0903044-10	water	X	X	X
YS01-TB01-030909	0903044-06	water	X		
YS01-TB01-031009	0903044-14	water	X		
YS01-TB01-031109	0903044-19	water	X		
YS01-TB01-031209	0903044-25	water	X		
YS01-GW23-0309 MS	0903044-07MS	water	X	X	X
YS01-GW23-0309 MSD	0903044-07MSD	water	X	X	X

5830 Amberway Drive • St. Louis, MO 63128 • 314-330-1327 • Fax 314-849-6264

The following quality control samples were provided with this SDG: sample YS01-TB01-030909, YS01-TB01-031009, YS01-TB01-031109 and YS01-TB01-031209-trip blanks; samples YS01-EB01-030909, YS01-EB01-031009, YS01-EB01-031109, YS01-EB01-031209, YS01-EB02-030909, YS01-EB02-031009 and YS01-EB02-031109-equipment blanks; and sample YS01-GW12AP-0309 was the field duplicate of sample YS01-GW12A-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Sample Condition	
• Technical Holding Times	*
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	
• Identification/Quantitation	*
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Two samples contained headspace in all sample vials that resulted in qualifications the data.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

The sample and associated field duplicate did not exhibit comparable results for three compounds that resulted in qualifications to the data.

Total and Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The matrix spike associated with the dissolved metals analysis exhibited non-compliant recoveries for selenium. This analyte was qualified as biased high in the associated field samples.

The serial dilution analysis exhibited non-compliant %Ds in the dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the associated field samples.

One of the submitted field duplicate pairs exhibited non-compliant RPDs for four analytes in the total analysis. These analytes were flagged as estimated J in the field duplicate pairs only.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Sample Condition

VOA

All sample vials for YS01-TB01-031009 contained headspace; therefore results were qualified as biased low (L/UL), qualifier code: OT.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/09-12/09 and samples were received at the laboratory 03/10-13/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/25/09	2-butanone	0.0378	YS01-EB02-031109, YS01-GW21-0309, YS01-GW17-0309, YS01-EB01-031209, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-TB01-031209	L/R	ICL
CC 03/17/09	acetone	0.0328	YS01-GW13-0309, YS01-GW13A-0309	L/R	CCL
	bromomethane	-54.46		J/UJ	CCL

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 03/18/09 CC 03/19/09 CC 03/20/09	acetone	0.0331/0.0321/0.0371	YS01-FB01-030909, YS01-EB01-030909, YS01-EB2-030909, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-EB01-031009, YS01-TB01-030909, YS01-GW18-0309, YS01-EB02-031009, YS01-TB01-031009, YS01-GW19-0309, YS01-EB01-031109, YS01-TB01-031109	L/R	CCL
CC 03/20/09	cyclohexane	-20.73	YS01-EB02-031009	J	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDH	methylene chloride	0.13J ug/L	0.50 ug/L	1.3 ug/L
VBLKHB	methylene chloride	0.11J	0.50	1.1
VBLKGY	methylene chloride	0.11J	0.50	1.1
VBLKGV	methylene chloride	0.11J	0.50	1.1
YS01-TB01-031009	methylene chloride	0.17J	2.5	1.7
YS01-TB01-031209	acetone	2.2J	2.5	22
YS01-TB01-030909	methylene chloride	0.14J	2.5	1.4
YS01-TB01-031109	methylene chloride	0.14J	2.5	1.4
YS01-EB01-031209	acetone	50	2.5	500
	methylene chloride	2.0	0.5	20
	toluene	0.72	0.5	3.6
YS01-EB01-030909	acetone	59	2.5	590
	methylene chloride	3.3	0.5	33
	toluene	1.2	0.5	6
YS01-EB02-030909	acetone	62	2.5	620
	methylene chloride	3.3	0.5	33
	toluene	1.1	0.5	5.5
YS01-EB01-031109	acetone	41	2.5	410
	methylene chloride	0.17J	0.5	1.7
YS01-EB02-031009	acetone	47	2.5	470
	methylene chloride	0.53	0.5	5.3
	toluene	0.2J	0.5	1.0

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS01-EB01-031009	acetone	54	2.5	540
	methylene chloride	1.2	0.5	12
	toluene	0.45J	0.5	2.25
YS01-EB02-031109	acetone	39	2.5	390
	methylene chloride	0.16J	0.5	1.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW19-0309, YS01-GW18-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309	methylene chloride	B	BL
YS01-GW05-0309, YS01-GW12A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	acetone	B	BL
YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	toluene	B	BL

Total and Dissolved Metals

Preparation, laboratory and field blank contamination was noted. Qualification for two analytes was required. Contamination and sample results qualifications are indicated in the following tables. Field blank samples were not submitted for metals analysis.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	iron	21.160B ug/L	105.8 ug/L	B	BL
	potassium	591.835B ug/L	2959.2 ug/L	B	BL
	silver	0.613B ug/L	3.065 g/L	B	BL
	sodium	316.855B ug/L	1584.275	B	BL
ICB/CCB – dissolved metals	vanadium	0.5 B ug/L	2.5 ug/L	B	BL
	copper	1.0B ug/L	5.0 ug/L	B	BL
	mercury	-0.111B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	aluminum	66B ug/L	330 ug/L	B	BL
	arsenic	2.9B ug/L	14.5 ug/L	B	BL
	beryllium	0.7B ug/L	3.5 ug/L	B	BL
YS01-EB02-031009 –dissolved	zinc	1.0B ug/L	5.0 ug/L	B	BL
YS01-EB01-031209-dissolved	zinc	2.8B ug/L	14 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW12A-0309, YS01-GW19-0309, YS01-GW23-0309	iron	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW18-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	potassium	B	BL
YS01-GW13-0309, YS01-GW13A-0309, YS01-GW25-0309	silver	B	BL
YS01-GW19-0309	sodium	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13A-0309, YS01-GW18-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	vanadium	B	BL
YS01-GW13-0309,. YS01-GW13A-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309, YS01-GW05-0309	copper	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW19-0309, YS01-GW21-0309	aluminum	B	BL
YS01-GW12AP-0309, YS01-GW19-0309, YS01-GW21-0309	arsenic	B	BL
YS01-GW21AP-0309, YS01-GW21-0309	beryllium	B	BL
YS01-GW05A-0309, YS01-GW23-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW21-0309	zinc	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	-1.617B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
ICB/CCB – total metals	mercury	-0.146B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	arsenic	2.8B ug/L	14 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	lead	L/UL	BL
all total metals field samples	mercury	L/UL	BL
YS01-GW05-0309, YS01-GW17-0309, YS01-GW23-0309	arsenic	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	nickel	B	BL

Matrix Spike

Total and Dissolved Metals

The matrix spike analysis of sample YS01-GW23-0309 for dissolved metals exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS01-GW23-0309	selenium	all dissolved metals field samples	124.7/144.8	K	MSH

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's for the analyte potassium in the dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS01-GW23-0309	potassium	all dissolved metals field samples	135.1	J/UJ	SD

Field Duplicate

VOA

Sample YS01-GW12A-0309 and field duplicate sample YS01-GW12AP-0309 did not exhibit comparable results for cis-1,2-dichloroethene at 60% RPD, trichloroethene at 50% RPD and 1,2-dichloroethene (total) at 60% RPD; therefore results for these compounds were qualified as estimated (J/UJ), qualifier code: FD.

Total & Dissolved Metals

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for four total metals analytes. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS01-GW12A-0309, YS01-GW12AP-0309	iron manganese potassium sodium	YS03-GW12A-0309, YS03-GW12AP-0309 (total)	35 59 72 35	J	FD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Reporting Limits

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. No validation action was required. Reporting limits (QAPP QLs) were met.

Total Metals (instrument P4)

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

Dissolved Metals (instrument P3)

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
lead	2.46	2.6
thallium	3.71	6.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS01-TB01-031009	all results	+/-	L/UL	OT
YS01-EB02-031109, YS01-GW21-0309, YS01-GW17-0309, YS01-EB01-031209, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-TB01-031209	2-butanone	+/-	L/R	ICL
YS01-GW13-0309, YS01-GW13A-0309	acetone	+/-	L/R	CCL
YS01-GW13-0309, YS01-GW13A-0309	bromomethane	+/-	J/UJ	CCL
YS01-FB01-030909, YS01-EB01-030909, YS01-EB2-030909, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-EB01-031009, YS01-TB01-030909, YS01-GW18-0309, YS01-EB02-031009, YS01-TB01-031009, YS01-GW19-0309, YS01-EB01-031109, YS01-TB01-031109	acetone	+/-	L/R	CCL
YS01-EB02-031009	cyclohexane	+	J	CCL
YS01-GW19-0309, YS01-GW18-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309	methylene chloride	+	B	BL
YS01-GW05-0309, YS01-GW12A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	acetone	+	B	BL
YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	toluene	+	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309	cis-1,2-dichloroethene, trichloroethene, 1,2-dichloroethene	+/-	J/UJ	FD

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	lead	+/- up to action level	L/UL	BL
all total metals field samples	mercury	+/- up to action level	L/UL	BL
YS01-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	arsenic	+ up to action level	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	nickel	+ up to action level	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309	iron manganese potassium sodium	+	J	FD
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW12A-0309, YS01-GW19-0309, YS01-GW23-0309	iron	+ up to action level	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW18-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	potassium	+ up to action level	B	BL
YS01-GW13-0309, YS01-GW13A-0309, YS01-GW25-0309	silver	+ up to action level	B	BL
YS01-GW19-0309	sodium	+ up to action level	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13A-0309, YS01-GW18-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	vanadium	+ up to action level	B	BL
YS01-GW13-0309,. YS01-GW13A-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309, YS01-GW05-0309	copper	+ up to action level	B	BL
all dissolved metals field samples	mercury	+/- up to action level	L/UL	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW19-0309, YS01-GW21-0309	aluminum	+ up to action level	B	BL
YS01-GW12AP-0309, YS01-GW19-0309, YS01-GW21-0309	arsenic	+ up to action level	B	BL
YS01-GW21AP-0309, YS01-GW21-0309	beryllium	+ up to action level	B	BL
YS01-GW05A-0309, YS01-GW23-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW21-0309	zinc	+ up to action level	B	BL
all dissolved metals field samples	selenium	+	K	MSH
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0473

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	59	4,CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.3	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	11	
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.2	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-EB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0473

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	54	L, CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.2	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.45	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-EB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-17R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	41	L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.17	~~J~~ B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

052609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-17R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-23R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	50	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	2.0	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R, ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.72	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-23R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0573

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	62	LCCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.3	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.1	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0573

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-13R273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	47	LCCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.53	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.20	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-13R273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.10	J CCL
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

VW 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-18R291

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	39	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.16	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-18R291

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-FB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-03R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	54	LCCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.8	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	2.1	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-FB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-03R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.14	J
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW05-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0973

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	1.4	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	~~JB~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW05-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0973

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

06020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW05A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	~~JB~~ B, PL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

D6/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW05A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-20D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	2.5	U
74-87-3	Chloromethane	2.5	U
75-01-4	Vinyl Chloride	2.5	U
74-83-9	Bromomethane	2.5	U
75-00-3	Chloroethane	2.5	U
75-69-4	Trichlorofluoromethane	2.5	U
75-35-4	1,1-Dichloroethene	2.5	U
75-15-0	Carbon disulfide	2.5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	2.5	U
67-64-1	Acetone	6.7	~~U~~ JB,PD
79-20-9	Methyl acetate	2.5	U
75-09-2	Methylene Chloride	2.5	U
156-60-5	trans-1,2-Dichloroethene	2.5	U
1634-04-4	Methyl-tert-butyl ether	2.5	U
75-34-3	1,1-Dichloroethane	2.5	U
156-59-2	cis-1,2-Dichloroethene	15	J PD
78-93-3	2-butanone	13	~~U~~ J RICL
67-66-3	Chloroform	2.5	U
71-55-6	1,1,1-Trichloroethane	2.5	U
56-23-5	Carbon Tetrachloride	2.5	U
71-43-2	Benzene	2.5	U
107-06-2	1,2-Dichloroethane	2.5	U
79-01-6	Trichloroethene	57	J PD
78-87-5	1,2-Dichloropropane	2.5	U
75-27-4	Bromodichloromethane	2.5	U
10061-01-5	cis-1,3-Dichloropropene	2.5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	2.5	U
10061-02-6	trans-1,3-Dichloropropene	2.5	U
79-00-5	1,1,2-Trichloroethane	2.5	U
127-18-4	Tetrachloroethene	2.5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	2.5	U

FORM I VOA

VM 060204

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW12A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-20D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	2.5	U
108-90-7	Chlorobenzene	2.5	U
100-41-4	Ethylbenzene	2.5	U
108-38-3	m,p-Xylene	5.0	U
95-47-6	o-Xylene	2.5	U
100-42-5	Styrene	2.5	U
75-25-2	Bromoform	2.5	U
98-82-8	Isopropyl Benzene	2.5	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	2.5	U
106-46-7	1,4-Dichlorobenzene	2.5	U
95-50-1	1,2-Dichlorobenzene	2.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U
120-82-1	1,2,4-Trichlorobenzene	2.5	U
540-59-0	1,2-Dichloroethene (total)	14	J FD
1330-20-7	Xylene (total)	2.5	U
110-82-7	Cyclohexane	2.5	U
108-87-2	Methylcyclohexane	2.5	U

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW1
2AP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-24

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-24D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.2	U
74-87-3	Chloromethane	4.2	U
75-01-4	Vinyl Chloride	4.2	U
74-83-9	Bromomethane	4.2	U
75-00-3	Chloroethane	4.2	U
75-69-4	Trichlorofluoromethane	4.2	U
75-35-4	1,1-Dichloroethene	4.2	U
75-15-0	Carbon disulfide	4.2	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.2	U
67-64-1	Acetone	21	U
79-20-9	Methyl acetate	4.2	U
75-09-2	Methylene Chloride	4.2	U
156-60-5	trans-1,2-Dichloroethene	4.2	U
1634-04-4	Methyl-tert-butyl ether	4.2	U
75-34-3	1,1-Dichloroethane	4.2	U
156-59-2	cis-1,2-Dichloroethene	28	JAD
78-93-3	2-butanone	21	U R ICL
67-66-3	Chloroform	4.2	U
71-55-6	1,1,1-Trichloroethane	4.2	U
56-23-5	Carbon Tetrachloride	4.2	U
71-43-2	Benzene	4.2	U
107-06-2	1,2-Dichloroethane	4.2	U
79-01-6	Trichloroethene	95	JAD
78-87-5	1,2-Dichloropropane	4.2	U
75-27-4	Bromodichloromethane	4.2	U
10061-01-5	cis-1,3-Dichloropropene	4.2	U
108-10-1	4-Methyl-2-pentanone	21	U
108-88-3	Toluene	4.2	U
10061-02-6	trans-1,3-Dichloropropene	4.2	U
79-00-5	1,1,2-Trichloroethane	4.2	U
127-18-4	Tetrachloroethene	4.2	U
591-78-6	2-hexanone	21	U
124-48-1	Dibromochloromethane	4.2	U

FORM I VOA

060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW1
2AP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-24

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-24D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	4.2	U
108-90-7	Chlorobenzene	4.2	U
100-41-4	Ethylbenzene	4.2	U
108-38-3	m,p-Xylene	8.3	U
95-47-6	o-Xylene	4.2	U
100-42-5	Styrene	4.2	U
75-25-2	Bromoform	4.2	U
98-82-8	Isopropyl Benzene	4.2	U
79-34-5	1,1,2,2-Tetrachloroethane	4.2	U
541-73-1	1,3-Dichlorobenzene	4.2	U
106-46-7	1,4-Dichlorobenzene	4.2	U
95-50-1	1,2-Dichlorobenzene	4.2	U
96-12-8	1,2-Dibromo-3-Chloropropane	4.2	U
120-82-1	1,2,4-Trichlorobenzene	4.2	U
540-59-0	1,2-Dichloroethene (total)	26	JFD
1330-20-7	Xylene (total)	4.2	U
110-82-7	Cyclohexane	4.2	U
108-87-2	Methylcyclohexane	4.2	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0173

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	~~U~~ UJ CCL
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.13	~~JB~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 040209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0173

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0273

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	~~U~~ UJ CCL
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.13	~~J~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0273

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW17-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-22R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.9	~~B~~ B,BR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R IC
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

LM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW17-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-22R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

D60209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW18-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1573

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ RCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.15	~~JB~~ B, PQL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW18-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1573

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW19-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-16R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.15	JB B, PBL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW19-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-16R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW21-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-21R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.15	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.54	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW21-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-21R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW23-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0773

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.9	J B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	JB B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.4	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.12	J B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW23-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0773

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW24-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0873

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.14	J
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.0	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.15	JB,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.44	J
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.74	
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	6.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.24	JB,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW24-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0873

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.16	J
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.42	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW25-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1073

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.8	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	~~JB~~ B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.60	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.73	
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.21	J B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

D60209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW25-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1073

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.13	J
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-06R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.14	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 06/22/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-TB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-06R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-14R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U UL,OT
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R,CCL
79-20-9	Methyl acetate	0.50	~~U~~ UL,OT
75-09-2	Methylene Chloride	0.17	~~JB~~ L,OT
156-60-5	trans-1,2-Dichloroethene	0.50	U UL,OT
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

LM 040209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-14R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

UL, OT

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-19R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.14	JB
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VG 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-TB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-19R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-25

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-25R291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.2	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-TB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-25

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-25R291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MS173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.8	
74-87-3	Chloromethane	5.6	
75-01-4	Vinyl Chloride	6.2	
74-83-9	Bromomethane	5.9	
75-00-3	Chloroethane	6.3	
75-69-4	Trichlorofluoromethane	15	
75-35-4	1,1-Dichloroethene	5.9	
75-15-0	Carbon disulfide	6.1	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.9	
67-64-1	Acetone	23	
79-20-9	Methyl acetate	4.5	
75-09-2	Methylene Chloride	5.8	B
156-60-5	trans-1,2-Dichloroethene	6.1	
1634-04-4	Methyl-tert-butyl ether	4.6	
75-34-3	1,1-Dichloroethane	5.9	
156-59-2	cis-1,2-Dichloroethene	6.2	
78-93-3	2-butanone	20	
67-66-3	Chloroform	6.0	
71-55-6	1,1,1-Trichloroethane	5.4	
56-23-5	Carbon Tetrachloride	5.5	
71-43-2	Benzene	5.8	
107-06-2	1,2-Dichloroethane	5.5	
79-01-6	Trichloroethene	7.8	
78-87-5	1,2-Dichloropropane	5.3	
75-27-4	Bromodichloromethane	5.4	
10061-01-5	cis-1,3-Dichloropropene	5.1	
108-10-1	4-Methyl-2-pentanone	20	
108-88-3	Toluene	5.4	
10061-02-6	trans-1,3-Dichloropropene	5.1	
79-00-5	1,1,2-Trichloroethane	5.6	
127-18-4	Tetrachloroethene	6.1	
591-78-6	2-hexanone	18	
124-48-1	Dibromochloromethane	5.2	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MS173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.2	
108-90-7	Chlorobenzene	5.6	
100-41-4	Ethylbenzene	5.4	
108-38-3	m,p-Xylene	12	
95-47-6	o-Xylene	5.8	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	5.2	
98-82-8	Isopropyl Benzene	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	4.6	
541-73-1	1,3-Dichlorobenzene	5.5	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	4.3	
120-82-1	1,2,4-Trichlorobenzene	4.9	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	19	
110-82-7	Cyclohexane	5.0	
108-87-2	Methylcyclohexane	5.1	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MSD173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.5	
74-87-3	Chloromethane	5.3	
75-01-4	Vinyl Chloride	6.0	
74-83-9	Bromomethane	5.7	
75-00-3	Chloroethane	5.6	
75-69-4	Trichlorofluoromethane	12	
75-35-4	1,1-Dichloroethene	5.6	
75-15-0	Carbon disulfide	5.9	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.5	
67-64-1	Acetone	23	
79-20-9	Methyl acetate	4.4	
75-09-2	Methylene Chloride	5.6	B
156-60-5	trans-1,2-Dichloroethene	6.0	
1634-04-4	Methyl-tert-butyl ether	4.7	
75-34-3	1,1-Dichloroethane	5.6	
156-59-2	cis-1,2-Dichloroethene	5.9	
78-93-3	2-butanone	19	
67-66-3	Chloroform	5.8	
71-55-6	1,1,1-Trichloroethane	5.1	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	5.6	
107-06-2	1,2-Dichloroethane	5.2	
79-01-6	Trichloroethene	7.6	
78-87-5	1,2-Dichloropropane	5.4	
75-27-4	Bromodichloromethane	5.3	
10061-01-5	cis-1,3-Dichloropropene	5.1	
108-10-1	4-Methyl-2-pentanone	20	
108-88-3	Toluene	5.2	
10061-02-6	trans-1,3-Dichloropropene	5.1	
79-00-5	1,1,2-Trichloroethane	5.6	
127-18-4	Tetrachloroethene	5.9	
591-78-6	2-hexanone	19	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MSD173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.3	
108-90-7	Chlorobenzene	5.4	
100-41-4	Ethylbenzene	5.0	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.6	
100-42-5	Styrene	5.4	
75-25-2	Bromoform	5.1	
98-82-8	Isopropyl Benzene	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	4.7	
541-73-1	1,3-Dichlorobenzene	5.4	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	3.9	
120-82-1	1,2,4-Trichlorobenzene	5.2	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	4.9	
108-87-2	Methylcyclohexane	5.1	

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-09

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3010			P
7440-36-0	Antimony	6.8	B	J	P
7440-38-2	Arsenic	4.9	B	B BL	P
7440-39-3	Barium	30.6	B	J	P
7440-41-7	Beryllium	0.73	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	53000			P
7440-47-3	Chromium	2.3	B	J	P
7440-48-4	Cobalt	11.0			P
7440-50-8	Copper	1.2	B	J	P
7439-89-6	Iron	5850			P
7439-92-1	Lead	2.2	B	L BL	P
7439-95-4	Magnesium	17000			P
7439-96-5	Manganese	59.9			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	8.3	B	B BL	P
7440-09-7	Potassium	1830	B	J	P
7782-49-2	Selenium	2.8	B	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	18100			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	7.6	B	J	P
7440-66-6	Zinc	34.6			P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-11

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	187	B	J	P
7440-36-0	Antimony	9.3	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	11.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	36000			P
7440-47-3	Chromium	35.2			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	4.6	B	J	P
7439-89-6	Iron	555		M	P
7439-92-1	Lead	3.5		L BL	P
7439-95-4	Magnesium	604	B	J	P
7439-96-5	Manganese	50.7			P
7439-97-6	Mercury	0.10	U	ULBL	CV
7440-02-0	Nickel	15.8	B	B BL	P
7440-09-7	Potassium	727	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4400	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.96	B	J	P
7440-66-6	Zinc	15.1	B	J	P

BL X1corr JAC 6209

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-20

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	720			P
7440-36-0	Antimony	10.1			P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	37.0	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	53500			P
7440-47-3	Chromium	2.5	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.9	B	J	P
7439-89-6	Iron	669		NJ FD	P
7439-92-1	Lead	2.7	B	L BL	P
7439-95-4	Magnesium	1120	B	J	P
7439-96-5	Manganese	59.8		J FD	P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.9	B	B BL	P
7440-09-7	Potassium	19200		J FD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10500		J FD	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.8	B	J	P
7440-66-6	Zinc	13.7	B	J	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12AP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-24

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	778			P
7440-36-0	Antimony	7.7	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	33.7	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.66	B	J	P
7440-70-2	Calcium	67700			P
7440-47-3	Chromium	3.7	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.9	B	J	P
7439-89-6	Iron	954		W J FD	P
7439-92-1	Lead	3.8		L BL	P
7439-95-4	Magnesium	1920	B	J	P
7439-96-5	Manganese	110		J FD	P
7439-97-6	Mercury	0.10	W	WL BL	CV
7440-02-0	Nickel	2.3	B	B BL	P
7440-09-7	Potassium	9080		J FD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7350		J FD	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.2	B	J	P
7440-66-6	Zinc	18.7	B	J	P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-01

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1120			P
7440-36-0	Antimony	6.0	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	167	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	6320			P
7440-47-3	Chromium	1.6	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	1610		N	P
7439-92-1	Lead	2.6	~~B~~	~~B~~ BL	P
7439-95-4	Magnesium	2370	~~B~~	J	P
7439-96-5	Manganese	66.0			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	2.8	~~B~~	B BL	P
7440-09-7	Potassium	1910	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3760	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.5	~~B~~	J	P
7440-66-6	Zinc	49.8			P

JC 6/3/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-02

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	617			P
7440-36-0	Antimony	7.6	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	38.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	38000			P
7440-47-3	Chromium	29.3			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.3	B	J	P
7439-89-6	Iron	871		N	P
7439-92-1	Lead	3.4		L BL	P
7439-95-4	Magnesium	1250	B	J	P
7439-96-5	Manganese	80.9			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	12.8	B	B BL	P
7440-09-7	Potassium	1160	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4320	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	B	J	P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW17-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-22

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	500			P
7440-36-0	Antimony	6.7	B	J	P
7440-38-2	Arsenic	9.7	B	B BL	P
7440-39-3	Barium	2.8	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	3900	B	J	P
7440-47-3	Chromium	1.7	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	6690		N	P
7439-92-1	Lead	2.4	B	L BL	P
7439-95-4	Magnesium	1230	B	J	P
7439-96-5	Manganese	23.6			P
7439-97-6	Mercury	0.10	V	W BL	CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	124	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3190	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	16.7	B	J	P
7440-66-6	Zinc	5.2	U		P

6209

Color Before: BROWN Clarity Before: CLEAR Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-15

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	111	~~B~~	J	P
7440-36-0	Antimony	9.9	~~B~~	J	P
7440-38-2	Arsenic	23.4			P
7440-39-3	Barium	43.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	1.4	~~B~~	J	P
7440-70-2	Calcium	60300			P
7440-47-3	Chromium	1.8	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.97	~~B~~	J	P
7439-89-6	Iron	11800		~~H~~	P
7439-92-1	Lead	2.4	~~B~~	L BL	P
7439-95-4	Magnesium	6070			P
7439-96-5	Manganese	238			P
7439-97-6	Mercury	0.10	~~H~~	UL BL	CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	815	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4710	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	~~B~~	J	P
7440-66-6	Zinc	14.2	~~B~~	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-16

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	962			P
7440-36-0	Antimony	8.8	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	28.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	29100			P
7440-47-3	Chromium	2.9	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.3	B	J	P
7439-89-6	Iron	1970		N	P
7439-92-1	Lead	4.9		L BL	P
7439-95-4	Magnesium	2960	B	J	P
7439-96-5	Manganese	20.6			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.1	B	B BL	P
7440-09-7	Potassium	1940	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	2300	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.1	B	J	P
7440-66-6	Zinc	281			P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-21

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4960			P
7440-36-0	Antimony	8.3	B	J	P
7440-38-2	Arsenic	14.7			P
7440-39-3	Barium	58.1	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	2.9	B	J	P
7440-70-2	Calcium	159000			P
7440-47-3	Chromium	25.1			P
7440-48-4	Cobalt	5.5			P
7440-50-8	Copper	9.1			P
7439-89-6	Iron	13500		N	P
7439-92-1	Lead	6.0		L BL	P
7439-95-4	Magnesium	4400	B	J	P
7439-96-5	Manganese	705			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	17.3	B	B BL	P
7440-09-7	Potassium	3250	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7630			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	33.5			P
7440-66-6	Zinc	33.9			P

JAC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-07

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	929			P
7440-36-0	Antimony	7.1	B	J	P
7440-38-2	Arsenic	3.4	B	B BL	P
7440-39-3	Barium	21.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	90800			P
7440-47-3	Chromium	4.9	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.5	B	J	P
7439-89-6	Iron	2060		N	P
7439-92-1	Lead	2.4	B	L BL	P
7439-95-4	Magnesium	1800	B	J	P
7439-96-5	Manganese	80.9			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	2.6	B	B BL	P
7440-09-7	Potassium	1380	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6490			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	5.2	B	J	P
7440-66-6	Zinc	10.6	B	J	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-08

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3410			P
7440-36-0	Antimony	8.8	B	J	P
7440-38-2	Arsenic	19.1			P
7440-39-3	Barium	38.6	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	1.4	B	J	P
7440-70-2	Calcium	70500			P
7440-47-3	Chromium	25.8			P
7440-48-4	Cobalt	2.5	B	J	P
7440-50-8	Copper	3.7	B	J	P
7439-89-6	Iron	11200		N	P
7439-92-1	Lead	4.1		L BL	P
7439-95-4	Magnesium	2520	B	J	P
7439-96-5	Manganese	200			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	10.7	B	B BL	P
7440-09-7	Potassium	3300	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8010			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	24.6			P
7440-66-6	Zinc	21.2			P

JAC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-10

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	639			P
7440-36-0	Antimony	6.4	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	32.9	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.99	~~B~~	J	P
7440-70-2	Calcium	147000			P
7440-47-3	Chromium	8.4	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	1800		~~N~~	P
7439-92-1	Lead	2.7	~~B~~	L BL	P
7439-95-4	Magnesium	2950	~~B~~	J	P
7439-96-5	Manganese	65.7			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	4.0	~~B~~	B BL	P
7440-09-7	Potassium	2240	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	15200			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.6	~~B~~	J	P
7440-66-6	Zinc	5.8	~~B~~	J	P

JMC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-12

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U	N	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.8	U	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-13

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-17

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.3	B	J	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	B	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-18

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 10209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-23

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U	M	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

0209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-FB01-030909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-03

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	32.5	U	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

0209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-07

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1810			P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	5.7	B	J	P
7440-39-3	Barium	28.1	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	55700			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	13.7			P
7440-50-8	Copper	1.8	B	B BL	P
7439-89-6	Iron	3420			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18200			P
7439-96-5	Manganese	54.6			P
7439-97-6	Mercury	0.10	U	WL BL	CV
7440-02-0	Nickel	9.0	B	J	P
7440-09-7	Potassium	2700	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	19300			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	4.4	B	J	P
7440-66-6	Zinc	33.8			P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-09

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	9.9	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	36400			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	21.6			P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	597	B	J	P
7439-96-5	Manganese	28.2			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1290	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	4110	B	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.0	B	B BL	P

MC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-16

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	173	~~B~~	~~B~~ BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	23.9	~~B~~	~~J~~	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	34300			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.2	~~B~~	~~B BL~~	P J
7439-89-6	Iron	26.1	~~B~~	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	516	~~B~~	~~J~~	P
7439-96-5	Manganese	5.4	~~B~~	~~J~~	P
7439-97-6	Mercury	0.15	~~B~~	~~J~~	CV
7440-02-0	Nickel	7.1	~~B~~	~~J~~	P
7440-09-7	Potassium	11300		~~FJ~~ SD	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	7020			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.55	~~B~~	B BL	P
7440-66-6	Zinc	3.7	~~B~~	B BL	P

x1 corr JAC 6809

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12AP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-20

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	212		B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	3.3	~~B~~	B BL	P
7440-39-3	Barium	24.3	~~B~~	J	P
7440-41-7	Beryllium	0.39	~~B~~	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	33400			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.67	~~B~~	J	P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	464	~~B~~	J	P
7439-96-5	Manganese	3.2	~~B~~	J	P
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	13300		~~B~~ J SD	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	7530			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.67	~~B~~	B BL	P
7440-66-6	Zinc	2.6	~~B~~	B BL	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-01

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	185	B	J	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	162	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	6930			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	1.4	B	J	P
7440-50-8	Copper	1.2	B	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2570	B	J	P
7439-96-5	Manganese	63.6			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	2.1	B	J	P
7440-09-7	Potassium	2520	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.63	B	B BL	P
7440-23-5	Sodium	3660	B	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	44.8			P

6/29

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-02

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	20.1	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	33400			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.4	~~B~~	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	639	~~B~~	J	P
7439-96-5	Manganese	19.3			P
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1660	~~B~~	~~E~~ B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.96	~~B~~	B BL	P
7440-23-5	Sodium	4110	~~B~~	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.98	~~B~~	B BL	P
7440-66-6	Zinc	1.6	~~B~~	J	P

MC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW17-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-18

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	61.5	B	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	2.1	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	4180	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1290	B	J	P
7439-96-5	Manganese	5.7	B	J	P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	710	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	2680	B	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	1.6	B	B BL	P
7440-66-6	Zinc	2.6	B	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-12

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	28.6			P	
7440-39-3	Barium	39.3	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	56700			P	
7440-47-3	Chromium	0.89	~~B~~	J	P	
7440-48-4	Cobalt	0.87	~~B~~	J	P	
7440-50-8	Copper	1.2	~~B~~	~~B~~ BL	P	J
7439-89-6	Iron	8000			P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	6100			P	
7439-96-5	Manganese	233			P	
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	1420	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	19.3		K MSH	P	
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	3660	~~B~~	J	P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.70	~~B~~	B BL	P	
7440-66-6	Zinc	11.5	~~B~~	J	P	

X1 Corr JAC 6859

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-13

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	88.1	~~B~~	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	9.6	~~B~~	B BL	P
7440-39-3	Barium	25.2	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	5.5			P
7440-70-2	Calcium	28900			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	2.2	~~B~~	~~B BL~~	P J XICORR JAC6809
7439-89-6	Iron	103		B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	3110	~~B~~	J	P
7439-96-5	Manganese	16.6			P
7439-97-6	Mercury	0.10	~~B~~	AL BL	CV
7440-02-0	Nickel	1.6	~~B~~	J	P
7440-09-7	Potassium	2480	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	10.1		K MSH	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	1330	~~B~~	B BL	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	257			P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-17

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	51.1	B	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	6.8	B	B BL	P
7440-39-3	Barium	13.6	B	J	P
7440-41-7	Beryllium	0.47	B	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	91500			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2760	B	J	P
7439-96-5	Manganese	11.0			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1860	B	EB BL	P
7782-49-2	Selenium	6.7		K MSH	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	6470			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.5	B	B BL	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-05

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	19.7	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	96700			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.0	B	B BL	P
7439-89-6	Iron	33.6	B	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1730	B	J	P
7439-96-5	Manganese	64.8			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1600	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	6580			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.79	B	B BL	P
7440-66-6	Zinc	2.2	B	B BL	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-06

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	18.1	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	48800			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.4	~~B~~	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1460	~~B~~	J	P
7439-96-5	Manganese	116			P
7439-97-6	Mercury	0.10	~~B~~	ML BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2260	~~B~~	EB BL	P
7782-49-2	Selenium	7.6		K MSH	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	7740			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.63	~~B~~	B BL	P
7440-66-6	Zinc	0.74	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-08

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	5.2	~~B~~	J	P
7440-39-3	Barium	29.9	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	146000			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.5	~~B~~	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2900	~~B~~	J	P
7439-96-5	Manganese	59.1			P
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2360	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	13.9		K MSH	P
7440-22-4	Silver	0.92	~~B~~	B BL	P
7440-23-5	Sodium	15100			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.79	~~B~~	B BL	P
7440-66-6	Zinc	1.4	~~B~~	J	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-030909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-03

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	275			P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	4.0	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	1290	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.1	~~B~~	J	P
7439-89-6	Iron	97.5	~~B~~	J	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	122	~~B~~	J	P
7439-96-5	Manganese	9.6	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	611	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.3	~~B~~	J	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-10

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	94.4	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	571	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.74	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-14

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	95.7	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	1.3	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	569	~~B~~	~~J~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.9	~~B~~	J	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-19

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.35	B	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	74.5	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	574	B	J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.8	B	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-030909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-04

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	31.5	U		P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.3	~~B~~	J	P
7439-89-6	Iron	32.0	~~B~~	J	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	599	~~B~~	~~B~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.65	~~B~~	J	P
7440-66-6	Zinc	0.74	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-11

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	67.2	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.98	B	J	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	1.0	B	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	578	B	E J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.83	B	J	P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.0	B	J	P

6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-15

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.39	B	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	114	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.70	B	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	577	B	E J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.5	B	J	P

MC 6/3/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

15621

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Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO 166

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier	
Airbill No.	
Sampling Complete? Y or (N)	

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland St STE 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Mark L ...	Are high concentrations expected? Y or (N)? If yes, which ID(s)?

Requested Analysis (include method and bottle type): VOA 8260 40mL * ; Filtered Metals 1000mL * ; Metals Total 1000mL * ; Chl. Sulfate Alk 250mL ; TOC ... 40mL ; MEE RSK175 40mL ; *

Matrices: GW - Ground water, WW - Waste water, SW - Surface water, SO - Soil/Sediment, TB - Trip Blank, RI - Rinsate, WP - Wipe, O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOA 40mL	Filtered Metals 1000mL	Metals Total 1000mL	Chl. Sulfate Alk 250mL	TOC 40mL	MEE RSK175 40mL					Sample Info (Lab Use) 3/10/09 Total	DOC	Total metals	Diss metals
~~0903044-01~~ 0903045-01	YS01-GW13-0309	3/9 09	1520	GW	10	X		X	X			3	1	1	1	2	2					<2	<2	<2	<2
~~0903044-02~~ 0903045-02	YS01-GW13A-0309	3/9 09	1540	GW	18	X		X	X			3	1	1	1	2	2					<2	<2	<2	<2
0903044-06	YS01-TB01-030909	3/9 09	1640	TB	3	X						3	–	–	–	–	–	(3) larger than pea size					–	–	
~~0903044-04~~ 0903045-03	YS01-EB01030909	3/9 09	1615	FB	9	X		X	X			3	1	–	(1)*	(2)*	(2)*	air bubbles					–	–	<2
0903044-03	YS01-FB-030909	3/9 09	1700	FB	9							3	–	1	(1)*	(2)*	(2)*					<2	–	<2	–
~~0903044-05~~ 0903045-04	YS01-EB02-030909	3/9 09	1630	EB	9	X		X	X			3	1	–	(1)*	(2)*	(2)*	(4) EB02 MEE2 was labeled EB01				<2			

* analyses cancelled per Chelsea / See memo CI 3/10/09

Lab Use Only		Comments
Sample Unpacked By: [signature]	Cyanide samples checked for sulfide & chlorine? Y or (NA)	Note: Do not collect Total Metals for Equipment Blank
Sample Order Entry By: [signature]	625 & Phenol samples checked for chlorine? Y or (NA)	No Filter Metals on Field Blank
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or (NA)	
If no, explain:		

Sample Custody

Relinquished by: [signature]	Date/Time: 3/9/09 1830	Received by: [signature]	Date/Time: 3/10/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 3.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

3 Coolers

15586 142 107

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

CTO-166

Courier	
Airbill No.	
Sampling Complete? Y or (N)	

Client/Reporting Information

- Company Name: CH2M Hill
- Address: 5700 Cleveland ST STE 101
- City: Virginia Bch State: VA Zip: 23462
- Project Contact: Chelsea Bennet
- Phone #: 757 671-8311
- Sampler's Name: MLOST

Project Information

- Project Name: NWS Yorktown Site 1
- Sampling Location:
- Turnaround time: Per Contract
- Batch QC or Project Specific? If Specific, which Sample ID?
- Are aqueous samples field filtered for metals? (Y) or N
- Are high concentrations expected? Y or (N)? If yes, which ID(s)?

Requested Analysis (include method and bottle type): 40 ml VOC olm02.4 *; 40 ml TOC 9060/LK; 250 Chl, Alk, Sulfate; 40 ml Mee RSK 175; PL Total Metals ILM05.4; PL Dissolved Metals ILM05

* methods are now SW-846 (initials) 3/11/09

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC	TOC	Chl	Mee	Total Metals	Dissolved Metals					pH / Sample Info (Lab Use) TOC	T Metals	Diss Metals
~~0903044-07~~ 0903045-05	YS01-GW23-0309	3/10/09	0940	GW	30	X		X	X			9	6	3	6	3	3	Run QC				<2	<2	<2
~~0903044-08~~ 0903045-06	YS01-GW34-0309	3/10/09	1015	GW	10	X		X	X			3	2	1	2	1	1					<2	<2	<2
~~0903044-12~~ 0903045-10	YS01-EB01-031009	3/10/09	1040	EB	5	X		X				3	–	–	–	1	1					~~<2~~	<2	<2
~~0903044-09~~ 0903045-07	YS01-GW05-0309	3/10/09	1330	GW	10	X		X	X			3	2	1	2	1	1					<2	<2	<2
~~0903044-10~~ 0903045-08	YS01-GW25-0309	3/10/09	1410	GW	10	X		X	X			3	2	1	2	1	1					<2	<2	<2
~~0903044-13~~ 0903045-11	YS01-EB02-031009	3/10/09	1530	EB	5							3	–	–	–	1	1						<2	<2
0903044-[illegible]	YS01-TB-031009 → "YS01-TB01-031009"	3/10/09	1555	TB	3	X						3	–	–	–	–	–							
~~0903044-11~~ 0903044-09	* not on COC (YS01-GW05A-0309) on 3/10/09 @ 1510											3	2	1	2	1	1					<2	<2	<2

Lab Use Only

- Sample Unpacked By: Diane Byrd
- Sample Order Entry By: [signature]
- Samples Received in Good Condition? (Y) or N
- If no, explain:
- Cyanide samples checked for sulfide & chlorine? Y or (NA)
- 625 & Phenol samples checked for chlorine? Y or (NA)
- 608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:

1) YS01-GW23-0309 Bottles Labeled YS01-1GW23-0309
2) Run QC YS01-GW23-0309

* Received sample YS01-GW05A-0309 3/10/09 1510

Sample Custody YS01-TB-031009 all vials have smaller than pea size bubble DB 3/11/09

Relinquished by: [signature]	Date/Time: 3/10/09 1800	Received by: Diane Byrd		Date/Time: 3/11/09 0900	
Relinquished by:	Date/Time:	Received by:		Date/Time:	
Subcontact? Y or N If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.4, 1.0 °C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

1 Cooler

15588 145 108

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO-166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.
Sampling Complete? Y or (N)

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland St STE 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671 8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: ML OST	Are high concentrations expected? Y or N? If yes, which ID(s)? No

Requested Analysis (include method and bottle type): VOC SW 846 40ml; MEE RSK 175 40ml; Alk, Chloride, Sulfate 250 mL; TOC 9060 LK; Total Metals ILMO5.3 1000 ML*; Dissolved Metals ILMO5.3* 1000mL; *parameters base SW846 6010/7470 (3/11/09)

Matrices: GW - Ground water, WW - Waste water, SW - Surface water, SO - Soil/Sediment, TB - Trip Blank, RI - Rinsate, WP - Wipe, O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC	MEE	Alk, Chloride, Sulfate	TOC	Total Metals	Dissolved Metals	pH Total Metals	pH Diss. Metals
0903044-12	YS01-GW18-0309	3/11/09	1120	GW	10	X		X	X			3	2	1	2	1	1	<2	<2
0903044-13	YS01-GW19-0309	3/11/09	1140	GW	10	X		X	X			3	2	1	2	1	1	<2	<2
0903044-14	YS01-EB01-031109	3/11/09	1500	EB	5	X		X				3	-	-	-	1	1	<2	<2
0903044-15	YS01-EB02-031109	3/11/09	1510	EB	5	X		X				3	-	-	-	1	1	<2	<2
0903044-19	YS01-TB01-031109	3/11/09	1515	TB	3	X						3	—	—	—	—	/		

Lab Use Only
Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:

Sample Custody

Relinquished by: [signature]	Date/Time: 3/11/09 1800	Received by: [signature]	Date/Time: 3/12/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 1.9 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab · Pink copy for customer

CTO-166

CHAIN OF CUSTODY

15589

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109

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Cooler

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5706 Cleveland St Ste 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: ML. Ott	Are high concentrations expected? (Y) or N? If yes, which ID(s)? * GW012A and GW012AP

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC	TOC 40ml VIAL	MEE RSK 175	Total Metals ILM05.3	Dissolved Metals ILM05.3	Alk, Chloride, Sulfate	DISS MTL	Lab Sample Info (Lab Use): Total Metals	Diss. Metals	TDC
0903044-20	YS01-GW012A-0309	3/12/09	1035	GW	10	X		X	X			3	2	2	1	1	1	0903045-16	2	2	2
0903044-24	YS01-GW012AP-0309	3/12/09	1050	GW	5	X		X				3	-	-	TD*	1	*	0903045-20	2	2	
0903044-21	YS01-GW021-0309	3/12/09	1415	GW	10	X		X	X			3	2	2	1	1	1	0903045-17	2	2	2
0903044-22	YS01-GW017-0309	3/12/09	1540	GW	10	X		X	X			3	2	2	1	1	1	0903045-18	2	2	2
-23	YS01-EB01-031209	3/12/09	1620	EB	5	X		X				3	-	-	D*	1	*	0903045-19	2	2	
-25	YS01-TB01-031209	3/12/09	1615	TB	3	X						3	-	-	-	-	-	-			

*rec'd total metals for YS01-GW012AP-0309 & YS01-EB01-031209 (the alk/Cl/SO4 columns accidentally marked) ML Ott 3/13/09

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition: (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

1) PH 12-13 on GW012A and GW012AP
2) Double Preservative GW012A and GW012AP
Note

Sample Custody

Relinquished by:	Date/Time: 3/12/09 1800	Received by:	Date/Time: 3/13/09 0945		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.4 °C		

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 10, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample IDs were written incorrectly on COC 15621, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-EB01030909	YS01-EB01-030909	3/9/2009	16:15
YS01-FB-030909	YS01-FB01-030909	3/9/2009	

Several analyses were incorrectly requested for various samples on COC 15621, and need to be cancelled. Please cancel the analyses listed with the samples below:

Sample ID	Date Coll'd	Time Coll'd	Chloride, Sulfate 300.0	MEE RSK-175	Alkalinity 310.1	TOC 9060/Lloyd Kahn
YS01-EB01-030909	3/9/2009	16:15	X	X	X	X
YS01-FB01-030909	3/9/2009		X	X	X	X
YS01-EB02-030909	3/9/2009	16:30	X	X	X	X

The sample time is missing for sample YS01-FB01-030909 on COC 15621. Please use the sample time indicated on the sample bottle.

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Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 030/9-12/09
Received Date: 03/10-13/09
Analysis Dates: 03/17-25/09

Cooler Temps: 0.4-3.8°C

All holding time requirements were met. All sample vials for YS01-TB031009 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS01-TB01-031009, YS01-TB01-031209, YS01-TB01-030909 and YS01-TB01-031109- trip blanks; YS01-EB02-031009, YS01-EB01-031209, YS01-EB01-030909, YS01-EB02-030909, YS01-EB01-031109, YS01-EB02-031109 and YS01-EB01-031009- equipment blanks; YS01-FB01-030909- field blank.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDH	methylene chloride	0.13J ug/L	0.50 ug/L	1.3 ug/L
VBLKHB	methylene chloride	0.11J	0.50	1.1
VBLKGY	methylene chloride	0.11J	0.50	1.1
VBLKGV	methylene chloride	0.11J	0.50	1.1
YS01-TB01-031009	methylene chloride	0.17J	2.5	1.7
YS01-TB01-031209	acetone	2.2J	2.5	22
YS01-TB01-030909	methylene chloride	0.14J	2.5	1.4
YS01-TB01-031109	methylene chloride	0.14J	2.5	1.4
YS01-EB01-031209	acetone	50	2.5	500
	methylene chloride	2.0	0.5	20
	toluene	0.72	0.5	3.6
YS01-EB01-030909	acetone	59	2.5	590
	methylene chloride	3.3	0.5	33
	2-butanone	11	0.5	110
	toluene	1.2	0.5	6
YS01-EB02-030909	acetone	62	2.5	620
	methylene chloride	3.3	0.5	33
	toluene	1.1	0.5	5.5
YS01-EB01-031109	acetone	41	2.5	410
	methylene chloride	0.17J	0.5	1.7
YS01-EB02-031009	acetone	47	2.5	470
	methylene chloride	0.53	0.5	5.3
	toluene	0.2J	0.5	1.0
	cyclohexane	0.1J	0.5	0.5
YS01-EB01-031009	acetone	54	2.5	540
	methylene chloride	1.2	0.5	12
	toluene	0.45J	0.5	2.25
YS01-EB02-031109	acetone	39	2.5	390
	methylene chloride	0.16J	0.5	1.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW19-0309, YS01-GW18-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309	methylene chloride	B	BL
YS01-GW05-0309, YS01-GW12A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	acetone	B	BL

Sample ID	Compound	Q Flag	Q-code
YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	toluene	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS01-GW23-0309—no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for sample YS01-GW12A-0309—qualifications required, see attached sheet.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Massaro **Date:** 6/2/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C25004-TUN191 BFB Injection Date: 03/25/09

Instrument ID: 5975HPMS91 BFB Injection Time: 1140

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.2
75	30.0 - 60.0% of mass 95	48.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	Greater than 50.0% of mass 95	71.3
175	5.0 - 9.0% of mass 174	5.1 (7.1)1
176	95.0 - 101.0% of mass 174	70.8 (99.3)1
177	5.0 - 9.0% of mass 176	4.8 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9C25004-CAL	9C25004-CAL291	03/25/09	1236
02	VSTD0.5	9C25004-CAL	9C25004-CAL191	03/25/09	1303
03	VSTD010	9C25004-CAL	9C25004-CAL491	03/25/09	1329
04	VSTD025	9C25004-CAL	9C25004-CAL591	03/25/09	1356
05	VSTD005	9C25004-CAL	9C25004-CAL3R9	03/25/09	1423
06	VBLKHK	9032514-BLK	9032514-BLK191	03/25/09	1517
07	VHKLCS	9032514-BS1	9032514-BS191	03/25/09	1558
08	VHKLCSD	9032514-BSD	9032514-BSD191	03/25/09	1625
09	YS01-EB02-031109	0903044-18	0903044-18R291	03/25/09	1652
10	YS01-GW21-0309	0903044-21	0903044-21R91	03/25/09	1719
11	YS01-GW17-0309	0903044-22	0903044-22R91	03/25/09	1745
12	YS01-EB01-031209	0903044-23	0903044-23R91	03/25/09	1812
13	YS01-GW12A-0309	0903044-20	0903044-20D291	03/25/09	1839
14	YS01-GW12AP-0309	0903044-24	0903044-24D291	03/25/09	1906
15	YS01-TB01-031209	0903044-25	0903044-25R291	03/25/09	1932
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5975HPMS91 Calibration Date(s): 03/25/09 03/25/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1236 1423

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.51639363	6.463	15.000
Chloromethane	AVRG		0.28866206	6.278	15.000
Vinyl Chloride	AVRG		0.21510427	4.544	30.000
Bromomethane	AVRG		0.11990001	6.429	15.000
Chloroethane	AVRG		0.09942060	5.858	15.000
Trichlorofluoromethane	AVRG		0.31945817	5.740	15.000
1,1-Dichloroethene	AVRG		0.30880241	7.986	30.000
Carbon disulfide	AVRG		1.15931112	3.973	15.000
1,1,2-trichloro-1,2,2-triflu	LINR	-0.0933805	6.67395608	0.9997276	0.9950000
Acetone	LINR	-0.6546255	48.4616942	0.9998817	0.9950000
Methyl acetate	AVRG		0.17969017	5.744	15.000
Methylene Chloride	AVRG		0.25291476	6.909	15.000
trans-1,2-Dichloroethene	AVRG		0.34305477	3.923	15.000
Methyl-tert-butyl ether	AVRG		0.41780166	5.781	15.000
1,1-Dichloroethane	AVRG		0.59742005	2.304	15.000
cis-1,2-Dichloroethene	AVRG		0.31135818	2.133	15.000
2-butanone	AVRG		0.03784098	2.520	15.000
Chloroform	AVRG		0.54048274	3.736	30.000
1,1,1-Trichloroethane	AVRG		0.54456031	8.187	15.000
Carbon Tetrachloride	AVRG		0.46926736	8.828	15.000
Benzene	AVRG		1.33049463	4.758	15.000
1,2-Dichloroethane	AVRG		0.25787247	2.332	15.000
Trichloroethene	LINR	0.03136040	3.07949233	0.9985392	0.9950000
1,2-Dichloropropane	AVRG		0.29017511	3.920	30.000
Bromodichloromethane	AVRG		0.32642963	3.737	15.000
cis-1,3-Dichloropropene	AVRG		0.36817730	4.318	15.000
4-Methyl-2-pentanone	AVRG		0.14419064	3.697	15.000
Toluene	AVRG		1.28461479	9.983	30.000
trans-1,3-Dichloropropene	AVRG		0.47591574	3.932	15.000
1,1,2-Trichloroethane	AVRG		0.21322162	5.547	15.000
Tetrachloroethene	LINR	0.02115304	2.59666488	0.9978995	0.9950000
2-hexanone	AVRG		0.10273527	1.959	15.000
Dibromochloromethane	AVRG		0.24403015	4.680	15.000
1,2-Dibromoethane	AVRG		0.18977112	5.086	15.000
Chlorobenzene	AVRG		1.25921926	10.184	15.000
Ethylbenzene	AVRG		0.77881791	12.963	30.000
m,p-Xylene	AVRG		0.95544407	12.032	15.000
o-Xylene	AVRG		0.87243378	11.139	15.000
Styrene	AVRG		1.34392039	6.985	15.000
Bromoform	AVRG		0.10959230	8.058	15.000
Isopropyl Benzene	AVRG		2.41398611	14.188	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.51679800	6.821	15.000
1,3-Dichlorobenzene	LINR	0.00336942	0.52854731	0.9987682	0.9950000
1,4-Dichlorobenzene	LINR	0.00147604	0.53771092	0.9989098	0.9950000

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C17003-TUN173 BFB Injection Date: 03/17/09

Instrument ID: 5972HP73 BFB Injection Time: 1027

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.1
75	30.0 - 60.0% of mass 95	41.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	87.3
175	5.0 - 9.0% of mass 174	6.5 (7.5)1
176	95.0 - 101.0% of mass 174	86.7 (99.2)1
177	5.0 - 9.0% of mass 176	5.7 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C17003-CCV	9C17003-CCV173	03/17/09	1058
02	VBLKGV	9031706-BLK	9031706-BLK173	03/17/09	1148
03	VGVLCS	9031706-BS1	9031706-BS173	03/17/09	1237
04	VGVLCSD	9031706-BSD	9031706-BSD173	03/17/09	1307
05	YS01-GW13-0309	0903044-01	0903044-0173	03/17/09	2115
06	YS01-GW13A-0309	0903044-02	0903044-0273	03/17/09	2144
07					
08					
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12					
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17					
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19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/17/09 Time: 1058

Lab File ID: 9C17003-CCV173 Init. Calib. Date(s): 03/16/09 03/16/09

Init. Calib. Times: 1056 1253

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.7319000	0.6820407	0.6820407	0.001	-6.81	90.00	AVRG
Chloromethane	0.4225100	0.2769583	0.2769583	0.1	-34.45	90.00	AVRG
Vinyl Chloride	0.2011900	0.1796423	0.1796423	0.001	-10.71	20.00	AVRG
Bromomethane	0.1105000	0.0503219	0.0503219	0.001	-54.46	90.00	AVRG
Chloroethane	0.0800500	0.0902954	0.0902954	0.001	12.80	90.00	AVRG
Trichlorofluoromethane	0.2682700	0.2660785	0.2660785	0.001	-0.82	90.00	AVRG
1,1-Dichloroethene	0.3854600	0.3805809	0.3805809	0.001	-1.26	20.00	AVRG
Carbon disulfide	1.4775200	1.4717839	1.4717839	0.001	-0.39	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	130.66049	125.00000	0.2376907	0.001	4.53	90.00	LINR
Acetone	560.34575	625.00000	0.0328389	0.001	-10.34	90.00	LINR
Methyl acetate	0.2772100	0.2464665	0.2464665	0.001	-11.09	90.00	AVRG
Methylene Chloride	0.3771000	0.3657030	0.3657030	0.001	-3.02	90.00	AVRG
trans-1,2-Dichloroethene	0.4291000	0.4351790	0.4351790	0.001	1.42	90.00	AVRG
Methyl-tert-butyl ether	0.5190000	0.5073967	0.5073967	0.001	-2.24	90.00	AVRG
,1-Dichloroethane	0.7121300	0.6911135	0.6911135	0.1	-2.95	90.00	AVRG
cis-1,2-Dichloroethene	0.4020100	0.4137655	0.4137655	0.001	2.92	90.00	AVRG
2-butanone	0.0626600	0.0538273	0.0538273	0.001	-14.10	90.00	AVRG
Chloroform	0.6590400	0.6559286	0.6559286	0.001	-0.47	20.00	AVRG
1,1,1-Trichloroethane	0.5893100	0.5629078	0.5629078	0.001	-4.48	90.00	AVRG
Carbon Tetrachloride	0.5183300	0.5139568	0.5139568	0.001	-0.84	90.00	AVRG
Benzene	1.4415300	1.4369423	1.4369423	0.001	-0.32	90.00	AVRG
1,2-Dichloroethane	0.2977200	0.2914793	0.2914793	0.001	-2.10	90.00	AVRG
Trichloroethene	139.83859	125.00000	0.4582850	0.001	11.87		LINR
1,2-Dichloropropane	0.3223400	0.3228950	0.3228950	0.001	0.17	20.00	AVRG
Bromodichloromethane	0.4336000	0.4229555	0.4229555	0.001	-2.45	90.00	AVRG
cis-1,3-Dichloropropene	0.4621700	0.4628064	0.4628064	0.001	0.14	90.00	AVRG
4-Methyl-2-pentanone	0.2172300	0.1767315	0.1767315	0.001	-18.64	90.00	AVRG
Toluene	1.3669000	1.1969227	1.1969227	0.001	-12.44	20.00	AVRG
trans-1,3-Dichloropropene	0.5348100	0.5012160	0.5012160	0.001	-6.28	90.00	AVRG
1,1,2-Trichloroethane	0.2679800	0.2549762	0.2549762	0.001	-4.85	90.00	AVRG
Tetrachloroethene	125.63079	125.00000	0.4677793	0.001	0.50	90.00	LINR
2-hexanone	0.1515900	0.1212575	0.1212575	0.001	-20.01	90.00	AVRG
Dibromochloromethane	0.3825100	0.3612713	0.3612713	0.001	-5.55	90.00	AVRG
1,2-Dibromoethane	0.2775600	0.2725856	0.2725856	0.001	-1.79	90.00	AVRG
Chlorobenzene	1.3739800	1.2592246	1.2592246	0.3	-8.35	90.00	AVRG
Ethylbenzene	0.7995300	0.6806167	0.6806167	0.001	-14.87	20.00	AVRG
m,p-Xylene	237.31970	250.00000	0.8342510	0.001	-5.07	90.00	LINR
o-Xylene	119.67827	125.00000	0.8031077	0.001	-4.26	90.00	LINR
Styrene	117.29986	125.00000	1.2505415	0.001	-6.16	90.00	LINR
Bromoform	0.2006200	0.1902802	0.1902802	0.1	-5.15	90.00	AVRG
Isopropyl Benzene	117.79794	125.00000	2.1094264	0.001	-5.76	90.00	LINR
1,1,2,2-Tetrachloroethane	0.7156100	0.6413283	0.6413283	0.3	-10.38	90.00	AVRG

J-MDL
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FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C18003-TUN173 BFB Injection Date: 03/18/09

Instrument ID: 5972HP73 BFB Injection Time: 1219

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.9
75	30.0 - 60.0% of mass 95	41.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	86.5
175	5.0 - 9.0% of mass 174	6.3 (7.3)1
176	95.0 - 101.0% of mass 174	84.6 (97.8)1
177	5.0 - 9.0% of mass 176	5.8 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C18003-CCV	9C18003-CCV173	03/18/09	1249
02	VBLKGY	9031808-BLK	9031808-BLK173	03/18/09	1343
03	VGYLCS	9031808-BS1	9031808-BS173	03/18/09	1424
04	VGYLCSD	9031808-BSD	9031808-BSD173	03/18/09	1453
05	YS01-FB01-030909	0903044-03	0903044-03R73	03/18/09	1642
06	YS01-EB01-030909	0903044-04	0903044-0473	03/18/09	1711
07	YS01-EB02-030909	0903044-05	0903044-0573	03/18/09	1740
08	YS01-GW23-0309	0903044-07	0903044-0773	03/18/09	1846
09	YS01-GW24-0309	0903044-08	0903044-0873	03/18/09	1915
10	YS01-GW05-0309	0903044-09	0903044-0973	03/18/09	1945
11	YS01-GW25-0309	0903044-10	0903044-1073	03/18/09	2014
12	YS01-GW05A-0309	0903044-11	0903044-1173	03/18/09	2043
13	YS01-EB01-031009	0903044-12	0903044-1273	03/18/09	2112
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/18/09 Time: 1249

Lab File ID: 9C18003-CCV173 Init. Calib. Date(s): 03/16/09 03/16/09

Init. Calib. Times: 1056 1253

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.7319000	0.7460696	0.7460696	0.001	1.94	90.00	AVRG	
Chloromethane	0.4225100	0.3686804	0.3686804	0.1	-12.74	90.00	AVRG	
Vinyl Chloride	0.2011900	0.2123556	0.2123556	0.001	5.55	20.00	AVRG	
Bromomethane	0.1105000	0.0952874	0.0952874	0.001	-13.77	90.00	AVRG	
Chloroethane	0.0800500	0.0843668	0.0843668	0.001	5.39	90.00	AVRG	
Trichlorofluoromethane	0.2682700	0.2831399	0.2831399	0.001	5.54	90.00	AVRG	
1,1-Dichloroethene	0.3854600	0.3979480	0.3979480	0.001	3.24	20.00	AVRG	
Carbon disulfide	1.4775200	1.5197566	1.5197566	0.001	2.86	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	129.18737	125.00000	0.2351260	0.001	3.35	90.00	LINR	
Acetone	566.58893	625.00000	0.0331771	0.001	-9.34	90.00	LINR	L/R
Methyl acetate	0.2772100	0.2498506	0.2498506	0.001	-9.87	90.00	AVRG	
Methylene Chloride	0.3771000	0.3803656	0.3803656	0.001	0.86	90.00	AVRG	
trans-1,2-Dichloroethene	0.4291000	0.4553799	0.4553799	0.001	6.12	90.00	AVRG	
ethyl-tert-butyl ether	0.5190000	0.4925409	0.4925409	0.001	-5.10	90.00	AVRG	
1,1-Dichloroethane	0.7121300	0.7019855	0.7019855	0.1	-1.42	90.00	AVRG	
cis-1,2-Dichloroethene	0.4020100	0.4119369	0.4119369	0.001	2.47	90.00	AVRG	
2-butanone	0.0626600	0.0522070	0.0522070	0.001	-16.68	90.00	AVRG	OK JLM 06209
Chloroform	0.6590400	0.6562316	0.6562316	0.001	-0.43	20.00	AVRG	
1,1,1-Trichloroethane	0.5893100	0.5616000	0.5616000	0.001	-4.70	90.00	AVRG	
Carbon Tetrachloride	0.5183300	0.4894290	0.4894290	0.001	-5.58	90.00	AVRG	
Benzene	1.4415300	1.4621045	1.4621045	0.001	1.43	90.00	AVRG	
1,2-Dichloroethane	0.2977200	0.2908083	0.2908083	0.001	-2.32	90.00	AVRG	
Trichloroethene	130.96074	125.00000	0.4294000	0.001	4.77	90.00	LINR	
1,2-Dichloropropane	0.3223400	0.3159454	0.3159454	0.001	-1.98	20.00	AVRG	
Bromodichloromethane	0.4336000	0.4166919	0.4166919	0.001	-3.90	90.00	AVRG	
cis-1,3-Dichloropropene	0.4621700	0.4534150	0.4534150	0.001	-1.89	90.00	AVRG	
4-Methyl-2-pentanone	0.2172300	0.1742283	0.1742283	0.001	-19.80	90.00	AVRG	
Toluene	1.3669000	1.2283982	1.2283982	0.001	-10.13	20.00	AVRG	
trans-1,3-Dichloropropene	0.5348100	0.4750323	0.4750323	0.001	-11.18	90.00	AVRG	
1,1,2-Trichloroethane	0.2679800	0.2458359	0.2458359	0.001	-8.26	90.00	AVRG	
Tetrachloroethene	124.45260	125.00000	0.4636494	0.001	-0.44	90.00	LINR	
2-hexanone	0.1515900	0.1173629	0.1173629	0.001	-22.58	90.00	AVRG	JLM 06209
Dibromochloromethane	0.3825100	0.3509665	0.3509665	0.001	-8.25	90.00	AVRG	
1,2-Dibromoethane	0.2775600	0.2551653	0.2551653	0.001	-8.07	90.00	AVRG	
Chlorobenzene	1.3739800	1.2619773	1.2619773	0.3	-8.15	90.00	AVRG	
Ethylbenzene	0.7995300	0.6833664	0.6833664	0.001	-14.53	20.00	AVRG	
m,p-Xylene	242.89151	250.00000	0.8523000	0.001	-2.84	90.00	LINR	
o-Xylene	120.08860	125.00000	0.8056618	0.001	-3.93	90.00	LINR	
Styrene	115.16031	125.00000	1.2290736	0.001	-7.87	90.00	LINR	
Bromoform	0.2006200	0.1837092	0.1837092	0.1	-8.43	90.00	AVRG	
Isopropyl Benzene	111.33258	125.00000	2.0019546	0.001	-10.93	90.00	LINR	
1,2,2-Tetrachloroethane	0.7156100	0.6602770	0.6602770	0.3	-7.73	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C19002-TUN173 BFB Injection Date: 03/19/09

Instrument ID: 5972HP73 BFB Injection Time: 0929

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.1
75	30.0 - 60.0% of mass 95	41.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	87.6
175	5.0 - 9.0% of mass 174	6.4 (7.3)1
176	95.0 - 101.0% of mass 174	86.4 (98.7)1
177	5.0 - 9.0% of mass 176	5.3 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C19002-CCV	9C19002-CCV173	03/19/09	1009
02	VBLKHB	9031905-BLK	9031905-BLK173	03/19/09	1055
03	VHBLCS	9031905-BS1	9031905-BS173	03/19/09	1137
04	YS01-TB01-030909	0903044-06	0903044-06R73	03/19/09	1248
05	YS01-GW23-0309MS	9031905-MS1	9031905-MS173	03/19/09	1317
06	YS01-GW23-0309MSD	9031905-MSD	9031905-MSD173	03/19/09	1346
07	YS01-GW18-0309	0903044-15	0903044-1573	03/19/09	1536
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/19/09 Time: 1009

Lab File ID: 9C19002-CCV173 Init. Calib. Date(s): 03/16/09 03/16/09

Init. Calib. Times: 1056 1253

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.7319000	0.7504972	0.7504972	0.001	2.54	90.00	AVRG	
Chloromethane	0.4225100	0.3835121	0.3835121	0.1	-9.23	90.00	AVRG	
Vinyl Chloride	0.2011900	0.2103804	0.2103804	0.001	4.57	20.00	AVRG	
Bromomethane	0.1105000	0.1018361	0.1018361	0.001	-7.84	90.00	AVRG	
Chloroethane	0.0800500	0.0878708	0.0878708	0.001	9.77	90.00	AVRG	
Trichlorofluoromethane	0.2682700	0.3099919	0.3099919	0.001	15.55	90.00	AVRG	
1,1-Dichloroethene	0.3854600	0.4094750	0.4094750	0.001	6.23	20.00	AVRG	
Carbon disulfide	1.4775200	1.5666660	1.5666660	0.001	6.03	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	135.18954	125.00000	0.2455758	0.001	8.15	90.00	LINR	
Acetone	548.53982	625.00000	0.0321995	0.001	-12.23	90.00	LINR	4/R
Methyl acetate	0.2772100	0.2447727	0.2447727	0.001	-11.70	90.00	AVRG	
Methylene Chloride	0.3771000	0.3877469	0.3877469	0.001	2.82	90.00	AVRG	
rans-1,2-Dichloroethene	0.4291000	0.4741830	0.4741830	0.001	10.51	90.00	AVRG	
thyl-tert-butyl ether	0.5190000	0.4890422	0.4890422	0.001	-5.77	90.00	AVRG	
1,1-Dichloroethane	0.7121300	0.7192020	0.7192020	0.1	0.99	90.00	AVRG	
cis-1,2-Dichloroethene	0.4020100	0.4206349	0.4206349	0.001	4.63	90.00	AVRG	
2-butanone	0.0626600	0.0534506	0.0534506	0.001	-14.70	90.00	AVRG	
Chloroform	0.6590400	0.6840092	0.6840092	0.001	3.79	20.00	AVRG	
1,1,1-Trichloroethane	0.5893100	0.5783907	0.5783907	0.001	-1.85	90.00	AVRG	
Carbon Tetrachloride	0.5183300	0.5247704	0.5247704	0.001	1.24	90.00	AVRG	
Benzene	1.4415300	1.4713535	1.4713535	0.001	2.07	90.00	AVRG	
1,2-Dichloroethane	0.2977200	0.2941262	0.2941262	0.001	-1.21	90.00	AVRG	
Trichloroethene	137.04665	125.00000	0.4492158	0.001	9.64	90.00	LINR	
1,2-Dichloropropane	0.3223400	0.3173105	0.3173105	0.001	-1.56	20.00	AVRG	
Bromodichloromethane	0.4336000	0.4186299	0.4186299	0.001	-3.45	90.00	AVRG	
cis-1,3-Dichloropropene	0.4621700	0.4477757	0.4477757	0.001	-3.11	90.00	AVRG	
4-Methyl-2-pentanone	0.2172300	0.1710872	0.1710872	0.001	-21.24	90.00	AVRG	J MOD
Toluene	1.3669000	1.2768079	1.2768079	0.001	-6.59	20.00	AVRG	
trans-1,3-Dichloropropene	0.5348100	0.4913925	0.4913925	0.001	-8.12	90.00	AVRG	
1,1,2-Trichloroethane	0.2679800	0.2668453	0.2668453	0.001	-0.42	90.00	AVRG	
Tetrachloroethene	138.75877	125.00000	0.5137967	0.001	11.01	90.00	LINR	J MOD
2-hexanone	0.1515900	0.1161767	0.1161767	0.001	-23.36	90.00	AVRG	
Dibromochloromethane	0.3825100	0.3864673	0.3864673	0.001	1.03	90.00	AVRG	
1,2-Dibromoethane	0.2775600	0.2755567	0.2755567	0.001	-0.72	90.00	AVRG	
Chlorobenzene	1.3739800	1.3374975	1.3374975	0.3	-2.66	90.00	AVRG	
Ethylbenzene	0.7995300	0.7129471	0.7129471	0.001	-10.83	20.00	AVRG	
m,p-Xylene	249.73985	250.00000	0.8744239	0.001	-0.10	90.00	LINR	
o-Xylene	124.68872	125.00000	0.8342949	0.001	-0.25	90.00	LINR	
Styrene	121.66891	125.00000	1.2943797	0.001	-2.66	90.00	LINR	
Bromoform	0.2006200	0.2021353	0.2021353	0.1	0.76	90.00	AVRG	
Isopropyl Benzene	121.33837	125.00000	2.1682781	0.001	-2.93	90.00	LINR	
1,2,2-Tetrachloroethane	0.7156100	0.6475017	0.6475017	0.3	-9.52	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C20008-TUN173 BFB Injection Date: 03/20/09

Instrument ID: 5972HP73 BFB Injection Time: 2153

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.5
75	30.0 - 60.0% of mass 95	41.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.2
175	5.0 - 9.0% of mass 174	5.8 (7.0)1
176	95.0 - 101.0% of mass 174	78.7 (95.8)1
177	5.0 - 9.0% of mass 176	5.1 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C20008-CCV	9C20008-CCV173	03/20/09	2212
02	VBLKDH	9032035-BLK	9032035-BLK173	03/20/09	2243
03	VDHLCS	9032035-BS1	9032035-BS173	03/20/09	2312
04	VDHLCSD	9032035-BSD	9032035-BSD173	03/20/09	2341
05	YS01-EB02-031009	0903044-13	0903044-13R273	03/21/09	0011
06	YS01-TB01-031009	0903044-14	0903044-14R73	03/21/09	0040
07	YS01-GW19-0309	0903044-16	0903044-16R73	03/21/09	0109
08	YS01-EB01-031109	0903044-17	0903044-17R73	03/21/09	0138
09	YS01-TB01-031109	0903044-19	0903044-19R73	03/21/09	0237
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

ab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/20/09 Time: 2212

Lab File ID: 9C20008-CCV173 Init. Calib. Date(s): 03/20/09 03/20/09

Init. Calib. Times: 1215 1610

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.8162600	0.7841033	0.7841033	0.001	-3.94	90.00	AVRG
Chloromethane	0.4439300	0.4551617	0.4551617	0.1	2.53	90.00	AVRG
Vinyl Chloride	0.2661400	0.2510384	0.2510384	0.001	-5.67	20.00	AVRG
Bromomethane	0.1487100	0.1424899	0.1424899	0.001	-4.18	90.00	AVRG
Chloroethane	122.56517	125.00000	0.1014989	0.001	-1.95	90.00	LINR
Trichlorofluoromethane	0.3816400	0.3544199	0.3544199	0.001	-7.13	90.00	AVRG
1,1-Dichloroethene	0.4396200	0.3773335	0.3773335	0.001	-14.17	20.00	AVRG
Carbon disulfide	1.7279500	1.6977688	1.6977688	0.001	-1.75	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2763400	0.2516228	0.2516228	0.001	-8.94	90.00	AVRG
Acetone	637.99873	625.00000	0.0371752	0.001	2.08	90.00	LINR
Methyl acetate	0.2819700	0.2791910	0.2791910	0.001	-0.98	90.00	AVRG
Methylene Chloride	0.4508000	0.4228525	0.4228525	0.001	-6.20	90.00	AVRG
ans-1,2-Dichloroethene	0.5029500	0.4870507	0.4870507	0.001	-3.16	90.00	AVRG
hyl-tert-butyl ether	0.4907600	0.4463504	0.4463504	0.001	-9.05	90.00	AVRG
1,1-Dichloroethane	0.8110400	0.7935451	0.7935451	0.1	-2.16	90.00	AVRG
cis-1,2-Dichloroethene	0.4554400	0.4299712	0.4299712	0.001	-5.59	90.00	AVRG
2-butanone	0.0550400	0.0508076	0.0508076	0.001	-7.69	90.00	AVRG
Chloroform	0.7572800	0.7472286	0.7472286	0.001	-1.33	20.00	AVRG
1,1,1-Trichloroethane	0.6288600	0.6167050	0.6167050	0.001	-1.93	90.00	AVRG
Carbon Tetrachloride	0.5638200	0.5447692	0.5447692	0.001	-3.38	90.00	AVRG
Benzene	1.6358700	1.5759500	1.5759500	0.001	-3.66	90.00	AVRG
1,2-Dichloroethane	0.3291600	0.3427674	0.3427674	0.001	4.13	90.00	AVRG
Trichloroethene	0.4756900	0.4225157	0.4225157	0.001	-11.18	90.00	AVRG
1,2-Dichloropropane	0.3663600	0.3822846	0.3822846	0.001	4.35	20.00	AVRG
Bromodichloromethane	0.4541900	0.4829775	0.4829775	0.001	6.34	90.00	AVRG
cis-1,3-Dichloropropene	0.4709600	0.4434142	0.4434142	0.001	-5.85	90.00	AVRG
4-Methyl-2-pentanone	0.1818700	0.1738173	0.1738173	0.001	-4.43	90.00	AVRG
Toluene	1.3490100	1.2419227	1.2419227	0.001	-7.94	20.00	AVRG
trans-1,3-Dichloropropene	0.5366200	0.5327586	0.5327586	0.001	-0.72	90.00	AVRG
1,1,2-Trichloroethane	0.2962900	0.2710558	0.2710558	0.001	-8.52	90.00	AVRG
Tetrachloroethene	0.5575200	0.4616250	0.4616250	0.001	-17.20	90.00	AVRG
2-hexanone	0.1163300	0.1116186	0.1116186	0.001	-4.05	90.00	AVRG
Dibromochloromethane	0.3936600	0.3566333	0.3566333	0.001	-9.40	90.00	AVRG
1,2-Dibromoethane	0.2873000	0.2654666	0.2654666	0.001	-7.60	90.00	AVRG
Chlorobenzene	1.4585300	1.3049100	1.3049100	0.3	-10.53	90.00	AVRG
Ethylbenzene	0.7799200	0.6836509	0.6836509	0.001	-12.34	20.00	AVRG
m,p-Xylene	0.9446000	0.8321592	0.8321592	0.001	-11.90	90.00	AVRG
o-Xylene	0.8895900	0.8044332	0.8044332	0.001	-9.57	90.00	AVRG
Styrene	1.3593900	1.2277085	1.2277085	0.001	-9.69	90.00	AVRG
Bromoform	0.1954500	0.1875450	0.1875450	0.1	-4.04	90.00	AVRG
Isopropyl Benzene	2.3713400	2.0517388	2.0517388	0.001	-13.48	90.00	AVRG
,2,2-Tetrachloroethane	0.7104500	0.6869292	0.6869292	0.3	-3.31	90.00	AVRG

4R

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/20/09 Time: 2212

Lab File ID: 9C20008-CCV173 Init. Calib. Date(s): 03/20/09 03/20/09

Init. Calib. Times: 1215 1610

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
1,3-Dichlorobenzene	2.5578800	2.0055570	2.0055570	0.001	-21.59	90.00	AVRG	J no D
1,4-Dichlorobenzene	2.5951400	2.0361005	2.0361005	0.001	-21.54	90.00	AVRG	J no D
1,2-Dichlorobenzene	2.0074900	1.6329281	1.6329281	0.001	-18.66	90.00	AVRG	
1,2-Dibromo-3-Chloropropane	121.81929	125.00000	0.0788096	0.001	-2.54	90.00	LINR	
1,2,4-Trichlorobenzene	1.2426400	0.9601786	0.9601786	0.001	-22.73	90.00	AVRG	J no D
1,2-Dichloroethene (total)	0.4792000	0.4585110	0.4585110	0.001	-4.32	90.00	AVRG	
Xylene (total)	0.8895900	0.8044332	0.8044332	0.001	-9.57	90.00	AVRG	
Cyclohexane	0.5877900	0.4659507	0.4659507	0.001	-20.73	90.00	AVRG	J
Methylcyclohexane	0.6245200	0.5190721	0.5190721	0.001	-16.88	90.00	AVRG	
Dibromofluoromethane	0.4536600	0.4849867	0.4849867	0.001	6.90	90.00	AVRG	
1,2-Dichloroethane-d4	0.2838700	0.3125682	0.3125682	0.001	10.11	90.00	AVRG	
Toluene-d8	2.1000000	2.0435108	2.0435108	0.001	-2.69	90.00	AVRG	
Bromofluorobenzene	1.4851700	1.4097082	1.4097082	0.001	-5.08	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDH

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9032035-BLK173_T Lab Sample ID: 9032035-BLK1

Date Analyzed: 03/20/09 Time Analyzed: 2243

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDHLCS	9032035-BS1	9032035-BS17	2312
02	VDHLCSD	9032035-BSD1	9032035-BSD1	2341
03	YS01-EB02-031009	0903044-13	0903044-13R2	0011
04	YS01-TB01-031009	0903044-14	0903044-14R7	0040
B-05	YS01-GW19-0309	0903044-16	0903044-16R7	0109
06	YS01-EB01-031109	0903044-17	0903044-17R7	0138
07	YS01-TB01-031109	0903044-19	0903044-19R7	0237
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COMMENTS: Methylene Chl 0.135 ug/L (0.50)

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9031905-BLK173 Lab Sample ID: 9031905-BLK1

Date Analyzed: 03/19/09 Time Analyzed: 1055

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHBLCS	9031905-BS1	9031905-BS17	1137
02	YS01-TB01-030909	0903044-06	0903044-06R7	1248
03	YS01-GW23-0309MS	9031905-MS1	9031905-MS17	1317
04	YS01-GW23-0309MSD	9031905-MSD1	9031905-MSD1	1346
B-05	YS01-GW18-0309	0903044-15	0903044-1573	1536
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COMMENTS: Methylene Chl 0.11J (0.50)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKGY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9031808-BLK173_T Lab Sample ID: 9031808-BLK1

Date Analyzed: 03/18/09 Time Analyzed: 1343

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VGYLCS	9031808-BS1	9031808-BS17	1424
02	VGYLCSD	9031808-BSD1	9031808-BSD1	1453
03	YS01-FB01-030909	0903044-03	0903044-03R7	1642
04	YS01-EB01-030909	0903044-04	0903044-0473	1711
05	YS01-EB02-030909	0903044-05	0903044-0573	1740
B-06	YS01-GW23-0309	0903044-07	0903044-0773	1846
B-07	YS01-GW24-0309	0903044-08	0903044-0873	1915
B-08	YS01-GW05-0309	0903044-09	0903044-0973	1945
B-09	YS01-GW25-0309	0903044-10	0903044-1073	2014
B-10	YS01-GW05A-0309	0903044-11	0903044-1173	2043
11	YS01-EB01-031009	0903044-12	0903044-1273	2112
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COMMENTS: Methylene Chl 0.11J (0.50)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKGV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9031706-BLK173_T Lab Sample ID: 9031706-BLK1

Date Analyzed: 03/17/09 Time Analyzed: 1148

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VGVLCS	9031706-BS1	9031706-BS17	1237
02	VGVLCSD	9031706-BSD1	9031706-BSD1	1307
B 03	YS01-GW13-0309	0903044-01	0903044-0173	2115
B 04	YS01-GW13A-0309	0903044-02	0903044-0273	2144
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COMMENTS: Methylene Chl 0.11 J ug/L (0.50)

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS01-GW12A-0309
Duplicate Sample ID: YS01-GW12AP-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
cis-1,2-dichloroethene	15	28	60
trichloroethene	57	95	50
1,2-dichloroethene (total)	14	26	60
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COMMENTS: Per QAPP qualifications <25% qualifications were required.

* result below the CRQL

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0903044
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-GW13-0309, YS01-GW13A-0309, YS01-FB01-030909, YS01-EB01-030909, YS01-EB02-030909, YS01-TB01-030909, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-EB01-0309, YS01-EB02-031009, YS01-TB01-031009, YS01-GW18-0309, YS01-GW19-0309, YS01-EB01-031109, YS01-EB02-031109, YS01-TB01-031109, YS01-GW12A-0309, YS01-GW21-0309, YS01-GW17-0309, YS01-EB01-031209, YS01-GW12AP-0309, AND YS01-TB01-031209

The 25 aqueous samples listed above were received intact, refrigerated between 0.4°C and 3.8°C, with proper documentation, in sealed shipping containers, on March 10, 11 and 13, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903044 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, samples YS01-GW12A-0309 and YS01-GW12AP-0309 were initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9C16001-CAL173, 9C16001-CAL273, 9C16001-CAL3R73, 9C16001-CAL473, 9C16001-CAL573, 9C2003-CAL173, 9C2003-CAL273, 9C2003-CAL3R73, 9C2003-CAL573, 9C25004-CAL191 and 9C25004-CAL291, process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS01-GW23-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy

Patricia A Murphy
Senior Scientist
March 30, 2009

15621 139 131

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO 166

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or (N)

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland ST STE 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Mark L Ott	Are high concentrations expected? Y or (N) If yes, which ID(s)?

Requested Analysis (include method and bottle type): Vic Olmcm-? * 40mL; Filtered Metals 1000mL Limos 3*; Metals Total 1000mL Limos 3*; Chl. Sulfate Alk 250mL; Toc (fixed/ice) 40mL; MEE RSK 175 40mL; *

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	Vic	Filtered Metals	Metals Total	Chl. Sulfate Alk	Toc	MEE RSK 175				Sample Info (Lab Use): Total / Dissolved / TOC / Total metals / Diss metals
C903044-01 0903045-2	YS01-GW13-0309	3/9 09	1520	GW	10	X		X	X			3	1	1	1	2	2				<2 <2 <2
0903044-02 0903045-1	YS01-GW13A-0309	3/9 09	1540	GW	18	X		X	X			3	1	1	1	2	2				<2 <2 <2
0903044-06	YS01-TB01-030909	3/9 09	1640	TB	3	X						3	–	–	–	–	–	(3) larger than pea size air bubbles			
C903044-04 0903045-3	YS01-EB01-030909	3/9 09	1615	EB	9	X		X	X			3	1	–	1*	2*	2*				– – <2
C903044-03	YS01-FB-030909	3/9 09	1700	FB	9							3	–	1	1*	2*	2*				– <2 –
0903044-05 0903045-4	YS01-EB02-030909	3/9 09	1630	EB	9	X		X	X			3	1	–	1*	2*	2*	(1) MEE EB02 was labelled EB01			<2

3/10/09 [initials]

* analyses cancelled per Chelsea / See memo CiD 3/10/09

Lab Use Only

Sample Unpacked By: [signature]	Cyanide samples checked for sulfide & chlorine? Y or (NA)
Sample Order Entry By: [signature]	625 & Phenol samples checked for chlorine? Y or (NA)
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or (NA)
If no, explain:	

Comments: Note: Do not collect Total Metals for Equipment Blank. No Filter Metals on Field Blank.

Sample Custody

Relinquished by: [signature]	Date/Time: 3/9/09 1800	Received by: [signature]	Date/Time: 3/10/09 0720
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N — Cooler Temp: 3.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 10, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample IDs were written incorrectly on COC 15621, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-EB01030909	YS01-EB01-030909	3/9/2009	16:15
YS01-FB-030909	YS01-FB01-030909	3/9/2009	

Several analyses were incorrectly requested for various samples on COC 15621, and need to be cancelled. Please cancel the analyses listed with the samples below:

Sample ID	Date Coll'd	Time Coll'd	Chloride, Sulfate 300.0	MEE RSK-175	Alkalinity 310.1	TOC 9060/Lloyd Kahn
YS01-EB01-030909	3/9/2009	16:15	X	X	X	X
YS01-FB01-030909	3/9/2009		X	X	X	X
YS01-EB02-030909	3/9/2009	16:30	X	X	X	X

The sample time is missing for sample YS01-FB01-030909 on COC 15621. Please use the sample time indicated on the sample bottle.

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Cathy Dover

From: Chelsea.Bennet@CH2M.com
Sent: Tuesday, March 10, 2009 9:07 AM
To: Cathy Dover
Subject: Incoming Samples 3/10/09
Attachments: CTF_20090310.doc

Hi Cathy,

You will be receiving coolers of samples today for Yorktown CTO-166. FedEx tracking numbers are as follows:

8546 1194 6024

There are some corrections to the COCs as noted in the attached corrections to file memo. Please make all corrections as requested in the memo. A copy of this memo should be included in the hard copy Case Narrative. Login summary reports are due within **24-hours** of sample receipt. Also, regarding sample YS01-FB01-030909, please let me know what the sample time is noted on the bottles you receive.

Please note that these samples are on a **28-Day TAT**. Please notify me immediately if you foresee any schedule delays or tardiness in result delivery.

Chelsea Bennet Leigh
Environmental Data Manager
CH2M HILL
5700 Cleveland St. Ste 101
Virginia Beach, VA 23462
Direct - 757.671.6208
Fax - 773.695.1378
www.ch2mhill.com

Solutions Without Boundaries

3 Coolers

15586

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO-166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or (N)

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: NWS Yorktown Site 1
Address: 5700 Cleveland ST STE 101	Sampling Location
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: MLOST	Are high concentrations expected? Y or (N) If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	40ml Vac pH<2 pH>3.4 *	40ml Tox 9060/LK	250 Cl, Alk, Sulfate	40ml Mee RSK 175	PL Total Metals Tuma SA	PL Dissolved Metals Tuma SA	* Methods we run SW-846	pH / Sample Info (Lab Use): TOC	TH Metals	Diss Metals
0903044-01	YS01-GW23-0309	3/10/09	0940	GW	30	X		X	X			9	6	3	6	3	3	RUN QC	<2	<2	<2
0903044-02	YS01-GW24-0309	3/10/09	1015	GW	10	X		X	X			3	2	1	2	1	1		<2	<2	<2
0903044-12	YS01-EB01-031009	3/10/09	1040	EB	5	X		X				3	-	-	-	1	1		<2	<2	<2
0903044-04	YS01-GW05-0309	3/10/09	1330	GW	10	X		X	X			3	2	1	2	1	1		<2	<2	<2
0903044-10	YS01-GW25-0309	3/10/09	1410	GW	10	X		X	X			3	2	1	2	1	1		<2	<2	<2
0903044-13	YS01-EB02-031009	3/10/09	1530	EB	5							3	-	-	-	1	1			<2	<2
0903044-14	YS01-TB 031009	3/10/09	1555	TB	3	X						3	-	-	-	-	-				
	"	YS01-TB01-031009	"																		
0903044-11	not on COC.	(YS01-GW05A-0309)		on 3/10/09 @ 1510								* 3	2	1	2	1	1		<2	<2	<2

Lab Use Only — Comments

Sample Unpacked By: Diana Byrd
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

1) YS01-GW23-0309 Bottles Labeled YS01-16W23-0309
2) RUN QC YS01-GW23-0309

* Received sample YS01-GW05A-0309 3/10/09 1510
Sample Custody YS01-TB-031009 all vials have smaller than pea size bubble DAR 3/11/09

Relinquished by:	Date/Time: 3/10/09 1800	Received by: Diana Byrd	Date/Time: 3/11/09 0900
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.4°, 1.0 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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Cathy Dover

From: Chelsea.Bennet@CH2M.com
Sent: Wednesday, March 11, 2009 7:26 AM
To: Cathy Dover
Subject: Incoming Samples
Attachments: CTF_20090311.doc

Hello,

You will be receiving coolers of samples today for Yorktown CTO-166. I believe that there may be 3 coolers, but I only have tracking numbers for two coolers. FedEx tracking numbers are as follows:

7906 5484 3362
7912 1570 1898

There are some corrections to the sample IDs as noted in the attached corrections to file memo. Please correct the Sample IDs as requested in the memo. A copy of this memo should be included in the hard copy Case Narrative. Login summary reports are due within **24-hours** of sample receipt.

Please note that these samples are on a **28-Day TAT**. Please notify me immediately if you foresee any schedule delays or tardiness in result delivery.

Thanks!

Chelsea Bennet Leigh
Environmental Data Manager
CH2M HILL
5700 Cleveland St, Ste 101
Virginia Beach, VA 23462
Direct - 757.671.6208
Fax - 773.695.1378
www.ch2mhill.com

Solutions Without Boundaries

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 11, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample ID was written incorrectly on COC 15586, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-TB-031009	YS01-TB01-031009	3/10/2009	15:55

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1 Cooler

CHAIN OF CUSTODY

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CompuChem
a division of Liberty Analytical Corp. CTO-166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland St STE 101	Sampling Location: Site 1
City: Virginia Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671 8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: ML OST	Are high concentrations expected? Y or N? If yes, which ID(s)? No

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC SW 8260 40ml	MEE RSK 175 40ml	AIK, Chloride, Sulfate 250 ml	TOC 9060 4oz	Total Metals ILM05.3 100ml **	Dissolved Metals ILM05.3 100ml **	* parameters have specific holding times	pH (Lab Use)	Sample Info (Lab Use): Total Metals	Sample Info (Lab Use): Diss. Metals
09B3044-13	YS01-GW18-030909	3/11/09	1120	GW	10	X		X	X			3	2	1	2	1	1			<2	<2
09B3044-14	YS01-GW19-030909	3/11/09	1140	GW	10	X		X	X			3	2	1	2	1	1			<2	<2
09B3044-17	YS01-EB01-031109	3/11/09	1500	EB GW	5	X		X				3	-	-	-	1	1			<2	<2
09B3044-18	YS01-EB02-031109	3/11/09	1510	EB	5	X		X				3	-	-	-	1	1			<2	<2
09B3044-19	YS01-TB01-031109	3/11/09	1515	TB	3	X						3	-	-	-	-	1				

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain.

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 3/11/09 1600	Received by:	Date/Time: 3/12/09 0950
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 1.9 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

CHAIN OF CUSTODY

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CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

1 Cooler

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Navy Yorktown
Address: 5700 Cleveland St Ste 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: ML. Ott	Are high concentrations expected? (Y) or N? If yes, which ID(s)? * GW012A and GW012AP

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOC	TOC 9060 L/K	MEE RSK 175	Total Metals ILM05.3	Dissolved Metals ILM05.3	Alk, Chloride, Sulfate	DISS MTL	Hi Sample Info (Lab Use): Total Metals	Diss. Metals	TDS
0903044-20	YS01-GW012A-0309	3/12/09	1035	GW	10	X		X	X			3	2	2	1	1	1	0903045-16	22	22	22
0903044-21	YS01-GW012AP-0309	3/12/09	1650	GW	5	X		X				3	-	-	TD*	1	(1)*	0903045-20	22	22	
0903044-21	YS01-GW021-0309	3/12/09	1415	GW	10	X		X	X			3	2	2	1	1	1	0903045-17	22	22	22
0903044-22	YS01-GW017-0309	3/12/09	1542	GW	10	X		X	X			3	2	2	1	1	1	0903045-18	22	22	22
-23	YS01-EB01-031209	3/12/09	1620	EB	5	X		X				3	-	-	(1)*	1	(1)*	0903045-19	22	22	
-25	YS01-TB01-031209	3/12/09	1615	TB	3	X						3	-	-	-	-	-				

*rec'd total metals for YS01-GW012AP 0309 & YS01-EB01-031209 (the alk/Cl/SO4 columns accidentally marked) ML Ott 3/13/09

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

1) PH 12-13 ON GW012A and GW012AP
2) Double Preservative GW012A and GW012AP Note

Sample Custody

Relinquished by:	Date/Time: 3/12/09 1800	Received by:	Date/Time: 3/13/09 0945
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/9-3/12
Received Date: 3/10-3/13
Prep. Dates: no prep – dissolved; 3/17 ICP total; 3/16 dissolved, 3/17 total Hg
Analysis Dates: 3/18-3/19 dissolved, 3/21 total ICP; 3/18 dissolved, 3/19 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	iron	21.160B ug/L	105.8 ug/L	B	BL
	potassium	591.835B ug/L	2959.2 ug/L	B	BL
	silver	0.613B ug/L	3.065 g/L	B	BL
	sodium	316.855B ug/L	1584.275	B	BL
ICB/CCB – dissolved metals	vanadium	0.5 B ug/L	2.5 ug/L	B	BL
	copper	1.0B ug/L	5.0 ug/L	B	BL
	mercury	-0.111B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	aluminum	66B ug/L	330 ug/L	B	BL
	arsenic	2.9B ug/L	14.5 ug/L	B	BL
	beryllium	0.7B ug/L	3.5 ug/L	B	BL
YS01-EB02-031009 –dissolved	zinc	1.0B ug/L	5.0 ug/L	B	BL
YS01-EB01-031209-dissolved	zinc	2.8B ug/L	14 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW12A-0309, YS01-GW19-0309, YS01-GW23-0309	iron	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW18-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	potassium	B	BL
YS01-GW13-0309, YS01-GW13A-0309, YS01-GW25-0309	silver	B	BL
YS01-GW19-0309	sodium	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13A-0309, YS01-GW18-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	vanadium	B	BL
YS01-GW13-0309,. YS01-GW13A-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309, YS01-GW05-0309	copper	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW19-0309, YS01-GW21-0309	aluminum	B	BL
YS01-GW12AP-0309, YS01-GW19-0309, YS01-GW21-0309	arsenic	B	BL
YS01-GW21AP-0309, YS01-GW21-0309	beryllium	B	BL
YS01-GW05A-0309, YS01-GW23-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW21-0309	zinc	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	-1.617B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
ICB/CCB – total metals	mercury	-0.146B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	arsenic	2.8B ug/L	14 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	lead	L/UL	BL
all total metals field samples	mercury	L/UL	BL
YS01-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	arsenic	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	nickel	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS01-GW23-0309 analyzed for total metals exhibited a non-compliant recovery for Fe in the MSD (using SAP QC limits of 80-120) but the MS was OK so no qualifications were required. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS01-GW23-0309 analyzed for the ICP dissolved metals exhibited compliant recoveries for all analytes with the exception of selenium (124.7/144.8). All positive results for selenium in the dissolved metals samples were qualified as biased high K. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses of samples YS01-GW23-0309 for total metals exhibited acceptable %Ds for all analytes. No qualifications were required.

The serial dilution analyses of samples YS01-GW23-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (135.1%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: YS03-GW12A-0309 Duplicate Sample ID: YS03-GW12AP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	34300	33400	3%
manganese	11300	13300	16%
sodium	7020	7530	7%

Comments: No qualifications were required.

Total Metals

Sample ID: YS01-GW12A-0309 Duplicate Sample ID: YS01-GW12AP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	720	778	8%
calcium	53500	67700	23%
iron	669	954	35%
manganese	59.8	110	59%
potassium	19200	9080	72%
sodium	10500	7350	35%

Comments: Flag Fe, Mn, K and Na as estimated J.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS01-GW13A-0309
COMPOUND: POTASSIUM
CONCENTRATION: 1660 ug/L
%Solids – na
50 ml

Raw Data result: 1664.224 ug/L

1664.224 ug/L * 0.05L/0.05L = 1664.224 ug/L

Total Metals

EPA SAMPLE ID: YS01-GW05-0309
COMPOUND: magnesium
CONCENTRATION: 17000 ug/L
%Solids – na
50 ml

Raw Data result: 17046.44 ug/L
17046.44 ug/L * 0.05L/0.05L = 17046.44 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JCleveland **Date:** 6/8/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903044

The indicated Sample Delivery Group (SDG) consisting of nineteen (19) water samples was received into the laboratory information management system (LIMS) on March 10, 11, and 13, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 3.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903044-07 ID YS01-GW23-0309S and YS01-GW23-0309SD were inside control limits for the requested analytes except iron.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903044-07 ID YS01-GW23-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903044-07 ID YS01-GW23-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
March 23, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.8	B	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.420	U	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-209.3	B	-184.0	B	-195.1	B	-188.5	B	-194.136	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	-1.617	B	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	-0.146	B	0.100	U	-0.174	B	-0.135	B	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	10.2	B	9.900	U	P
Selenium	2.8	B	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

NQ

YS01-GW23 YS01-GW33
GW13A
GW24
GW35

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 4	C	2 5	C	3 6	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			2.4	U	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	B	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-193.2	B	-200.3	B	-200.2	B	See PBLK		P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			-0.149	B	0.100	U	-0.130	B	See PBLK		CV
Nickel			0.7	U	0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.4	B	NQ		P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	3.3	U	3.3	U			P
Vanadium			0.6	U	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

YS01-GW13
GW13A
GW24
GW05

YS01-GW25
GW05S4
GW18
GW19
GW12A
GW21

GW17
GW12AP

✓ flag as noted in report

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	3175.0660		928.5754		2000.00	112.3		P
Antimony	75 - 125	514.1901		7.1103	B	500.00	101.4		P
Arsenic	75 - 125	44.0686		3.3896	B	40.00	101.7		P
Barium	75 - 125	2093.6490		21.2380	B	2000.00	103.6		P
Beryllium	75 - 125	50.6522		0.4200	U	50.00	101.3		P
Cadmium	75 - 125	50.4392		0.6400	U	50.00	100.9		P
Chromium	75 - 125	208.9497		4.9318	B	200.00	102.0		P
Cobalt	75 - 125	497.3037		1.6000	U	500.00	99.5		P
Copper	75 - 125	265.7635		1.5398	B	250.00	105.7		P
Iron	75 - 125	3064.5560		2059.6680		1000.00	100.5		P
Lead	75 - 125	21.0251		2.4135	B	20.00	93.1		P
Manganese	75 - 125	583.9935		80.9418		500.00	100.6		P
Mercury	75 - 125	1.1700		0.1000	U	1.00	117.0		CV
Nickel	75 - 125	502.3146		2.6030	B	500.00	99.9		P
Selenium	75 - 125	10.7476		2.2000	U	10.00	107.5		P
Silver	75 - 125	48.6565		0.6200	U	50.00	97.3		P
Thallium	75 - 125	43.2162		3.3000	U	50.00	86.4		P
Vanadium	75 - 125	509.3877		5.1885	B	500.00	100.8		P
Zinc	75 - 125	515.5772		10.5877	B	500.00	101.0		P

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	3340.5060		928.5754		2000.00	120.6		P
Antimony	75 - 125	517.1937		7.1103	B	500.00	102.0		P
Arsenic	75 - 125	43.5902		3.3896	B	40.00	100.5		P
Barium	75 - 125	2109.6370		21.2380	B	2000.00	104.4		P
Beryllium	75 - 125	51.1092		0.4200	U	50.00	102.2		P
Cadmium	75 - 125	51.5284		0.6400	U	50.00	103.1		P
Chromium	75 - 125	212.2576		4.9318	B	200.00	103.7		P
Cobalt	75 - 125	501.6727		1.6000	U	500.00	100.3		P
Copper	75 - 125	264.8564		1.5398	B	250.00	105.3		P
Iron	75 - 125	4303.5920		2059.6680		1000.00	224.4	N	P
Lead	75 - 125	22.4579		2.4135	B	20.00	100.2		P
Manganese	75 - 125	590.0679		80.9418		500.00	101.8		P
Mercury	75 - 125	1.1500		0.1000	U	1.00	115.0		CV
Nickel	75 - 125	508.4020		2.6030	B	500.00	101.2		P
Selenium	75 - 125	9.9515		2.2000	U	10.00	99.5		P
Silver	75 - 125	48.5473		0.6200	U	50.00	97.1		P
Thallium	75 - 125	47.3932		3.3000	U	50.00	94.8		P
Vanadium	75 - 125	515.4055		5.1885	B	500.00	102.0		P
Zinc	75 - 125	521.8187		10.5877	B	500.00	102.2		P

NQ MS OK

Comments:

SW846 - METALS

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Iron		2212.09		2059.67		200.0	76.2		P

Comments:

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903045

The indicated Sample Delivery Group (SDG) consisting of twenty (20) dissolved water samples was received into the laboratory information management system (LIMS) on March 10 and 11, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 3.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903045-05 ID YS01-GW23-0309S and YS01-GW23-0309SD were inside control limits for the requested analytes except selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903045-05 ID YS01-GW23-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903045-05 ID YS01-GW23-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

P. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
March 20, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	44.1	U	44.1	U	44.1	U	44.1	U	44.100	U	P
Antimony	2.7	U	2.7	U	2.7	U	2.7	U	2.700	U	P
Arsenic	2.8	U	2.8	U	2.8	U	2.8	U	2.800	U	P
Barium	0.2	U	0.2	U	0.2	U	0.2	B	0.200	U	P
Beryllium	-0.4	B	-0.5	B	-0.5	B	-0.4	B	-0.507	B	P
Cadmium	0.3	U	0.3	U	0.3	U	0.5	B	0.340	U	P
Calcium	31.5	U	42.1	B	31.5	U	55.0	B	31.500	U	P
Chromium	0.9	U	0.9	U	0.9	U	0.9	U	0.880	U	P
Cobalt	0.6	U	0.6	U	0.6	U	0.6	U	0.650	U	P
Copper	0.9	U	0.9	U	0.9	U	1.0	B	0.900	U	P
Iron	19.9	U	19.9	U	19.9	U	39.4	B	21.160	B	P
Lead	2.6	U	2.6	U	2.6	U	2.6	U	2.600	U	P
Magnesium	18.6	U	41.3	B	18.6	U	76.4	B	32.926	B	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.430	U	P
Mercury	-0.111	B	-0.151	B	0.100	U	0.100	U	0.100	U	CV
Nickel	1.3	U	-1.5	B	1.3	U	1.3	U	1.300	U	P
Potassium	574.0	B	582.6	B	588.2	B	592.3	B	591.835	B	P
Selenium	4.1	U	4.1	U	4.1	U	4.1	U	4.100	U	P
Silver	0.7	B	0.6	U	0.6	U	0.6	U	0.613	B	P
Sodium	214.8	U	214.8	U	226.5	B	220.0	B	316.855	B	P
Thallium	6.2	U	6.2	U	6.8	B	6.2	U	6.200	U	P
Vanadium	0.5	B	0.5	U	0.5	U	0.6	B	0.470	U	P
Zinc	0.7	U	0.7	U	0.7	U	0.7	U	0.740	U	P

Hg - all assoc.

none assoc

YS01-GW23
GW13
GW13A

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 4 1	C	5 2	C	6 3	C	Preparation Blank	C	M
Aluminum			44.1	U	-58.0	B					P
Antimony			2.7	U	2.7	U					P
Arsenic			2.8	U	2.8	U					P
Barium			0.2	U	0.2	U					P
Beryllium			-0.7	B	-0.8	B					P
Cadmium			0.3	U	0.3	U					P
Calcium			31.5	U	31.5	U					P
Chromium			0.9	U	0.9	U					P
Cobalt			0.6	U	0.6	U					P
Copper			1.0	B	1.1	B					P
Iron			19.9	U	19.9	U					P
Lead			2.6	U	2.6	U					P
Magnesium			18.6	U	18.6	U					P
Manganese			0.4	U	0.4	U					P
Mercury			-0.113	B	see ICB						CV
Nickel			1.3	U	1.3	U					P
Potassium			586.5	B	586.8	B					P
Selenium			4.1	U	4.1	U					P
Silver			0.6	U	0.6	U					P
Sodium			214.8	U	295.2	B					P
Thallium			6.2	U	6.2	U					P
Vanadium			0.5	U	0.7	B					P
Zinc			0.7	U	0.7	U					P

see PBBK

see PBBK

see PBBK

BNQ

BNQ

BNQ

YS01-GW23
13
13A

YS01-GW24
GW05
GW25
GW05A

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	44.1	U	61.0	B	66.0	B					P
Antimony	2.7	U	2.7	U	2.7	U					P
Arsenic	2.8	U	2.8	U	2.9	B					P
Barium	0.2	U	0.2	U	0.2	U					P
Beryllium	0.3	U	0.3	B	0.7	B					P
Cadmium	0.3	U	0.3	U	0.3	U					P
Calcium	31.5	U	58.8	B	32.8	B					P
Chromium	0.9	U	0.9	U	0.9	U					P
Cobalt	0.6	U	0.6	U	0.6	U					P
Copper	0.9	U	0.9	U	0.9	U					P
Iron	19.9	U	22.4	B	19.9	U					P
Lead	2.6	U	2.6	U	2.6	U					P
Magnesium	18.6	U	61.7	B	23.9	B					P
Manganese	0.4	U	0.4	U	0.4	U					P
Nickel	1.3	U	1.3	U	1.3	U					P
Potassium	581.2	B	570.9	B	588.3	B					P
Selenium	4.1	U	4.1	U	4.1	U					P
Silver	0.6	U	0.6	U	0.6	U					P
Sodium	214.8	U	214.8	U	214.8	U					P
Thallium	6.2	U	6.2	U	6.2	U					P
Vanadium	0.5	U	0.5	U	0.5	U					P
Zinc	0.7	U	0.7	U	0.7	U					P

YS01 - GW18
GW19
GW12A
GW21
GW17
GW12AP

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2018.9850		44.1000	U	2000.00	100.9		P
Antimony	75 - 125	520.7358		2.7000	U	500.00	104.1		P
Arsenic	75 - 125	43.8249		2.8000	U	40.00	109.6		P
Barium	75 - 125	2106.4210		19.6783	B	2000.00	104.3		P
Beryllium	75 - 125	49.2446		0.3200	U	50.00	98.5		P
Cadmium	75 - 125	50.7717		0.3400	U	50.00	101.5		P
Chromium	75 - 125	205.2988		0.8800	U	200.00	102.6		P
Cobalt	75 - 125	509.6381		0.6500	U	500.00	101.9		P
Copper	75 - 125	257.2584		1.0300	B	250.00	102.5		P
Iron	75 - 125	1080.9520		33.6088	B	1000.00	104.7		P
Lead	75 - 125	19.0106		2.6000	U	20.00	95.1		P
Manganese	75 - 125	577.3612		64.7983		500.00	102.5		P
Mercury	75 - 125	1.0100		0.1000	U	1.00	101.0		CV
Nickel	75 - 125	507.8190		1.3000	U	500.00	101.6		P
Selenium	75 - 125	12.4672		4.1000	U	10.00	124.7		P K+
Silver	75 - 125	45.8378		0.6100	U	50.00	91.7		P
Thallium	75 - 125	48.5403		6.2000	U	50.00	97.1		P
Vanadium	75 - 125	515.4351		0.7858	B	500.00	102.9		P
Zinc	75 - 125	516.2446		2.1862	B	500.00	102.8		P

using 80-120 QAPP

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	1986.6550		44.1000	U	2000.00	99.3		P
Antimony	75 - 125	515.7714		2.7000	U	500.00	103.2		P
Arsenic	75 - 125	44.2518		2.8000	U	40.00	110.6		P
Barium	75 - 125	2077.1590		19.6783	B	2000.00	102.9		P
Beryllium	75 - 125	48.9388		0.3200	U	50.00	97.9		P
Cadmium	75 - 125	50.7787		0.3400	U	50.00	101.6		P
Chromium	75 - 125	203.9088		0.8800	U	200.00	102.0		P
Cobalt	75 - 125	505.9548		0.6500	U	500.00	101.2		P
Copper	75 - 125	258.8393		1.0300	B	250.00	103.1		P
Iron	75 - 125	1076.5710		33.6088	B	1000.00	104.3		P
Lead	75 - 125	18.4566		2.6000	U	20.00	92.3		P
Manganese	75 - 125	572.7685		64.7983		500.00	101.6		P
Mercury	75 - 125	0.9450		0.1000	U	1.00	94.5		CV
Nickel	75 - 125	504.9712		1.3000	U	500.00	101.0		P
Selenium	75 - 125	14.4828		4.1000	U	10.00	144.8	N	P
Silver	75 - 125	46.0413		0.6100	U	50.00	92.1		P
Thallium	75 - 125	49.3416		6.2000	U	50.00	98.7		P
Vanadium	75 - 125	507.3850		0.7858	B	500.00	101.3		P
Zinc	75 - 125	512.1440		2.1862	B	500.00	102.0		P

K+

Comments:

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-GW23-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	44.10	U	220.50	U			P
Antimony	2.70	U	13.50	U			P
Arsenic	2.80	U	14.00	U			P
Barium	19.68	B	18.87	B	4.1		P
Beryllium	0.32	U	1.60	U			P
Cadmium	0.34	U	1.70	U			P
Calcium	96693.23		94733.00		2.0		P
Chromium	0.88	U	4.40	U			P
Cobalt	0.65	U	3.25	U			P
Copper	1.03	B	4.67	B	353.4		P
Iron	33.61	B	99.50	U	100.0		P
Lead	2.60	U	13.00	U			P
Magnesium	1734.76	B	1669.46	B	3.8		P
Manganese	64.80		62.72		3.2		P
Nickel	1.30	U	6.50	U			P
Potassium	1598.39	B	3758.35	B	135.1	E	P
Selenium	4.10	U	20.50	U			P
Silver	0.61	U	3.69	B	100.0		P
Sodium	6581.66		7576.93	B	15.1		P
Thallium	6.20	U	31.00	U			P
Vanadium	0.79	B	3.09	B	291.1		P
Zinc	2.19	B	3.70	U	100.0		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 0903092/0903093, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903092 and 0903093. The data validation was performed in accordance with the SW-846 8260B for volatiles and SW-846 Method 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS01-EB01-031309	0903092-03	water	X	X	X
YS01-EB01-031609	0903092-10	water	X	X	X
YS01-EB02-031609	0903092-09	water	X	X	X
YS01-FB01-031609	0903092-11	water	X	X	X
YS01-GW04-0309	0903092-07	water	X	X	X
YS01-GW04A-0309	0903092-05	water	X	X	X
YS01-GW12-0309	0903092-01	water	X	X	X
YS01-GW14-0309	0903092-02	water	X	X	X
YS01-GW22-0309	0903092-06	water	X	X	X
YS01-GW22P-0309	0903092-08	water	X	X	X
YS01-TB01-031309	0903092-04	water	X		
YS01-TB01-031609	0903092-12	water	X		
YS03-EB01-031709	0903092-17	water	X	X	X
YS03-EB02-031709	0903092-18	water	X	X	X
YS03-GW08B-0309	0903092-21	water	X	X	X
YS03-GW08BP-0309	0903092-23	water	X	X	X
YS03-GW15-0309	0903092-15	water	X	X	X
YS03-GW15A-0309	0903092-13	water	X	X	X
YS03-GW18-0309	0903092-16	water	X	X	X
YS03-GW21-0309	0903092-22	water	X	X	X
YS03-GW23-0309	0903092-20	water	X	X	X
YS03-GW26-0309	0903092-14	water	X	X	X
YS03-TB01-031709	0903092-19	water	X		
YS01-GW04A-0309 MS	0903092-05MS	water	X	X	X
YS01-GW04A-0309 MSD	0903092-05MSD	water	X	X	X

The following quality control samples were provided with this SDG: samples YS01-TB01-031309, YS03-TB01-031709 and YS01-TB01-031609-trip blanks; samples YS01-EB01-031309, YS01-EB01-031609, YS01-EB02-031609 YS03-EB01-031709 and YS03-EB02-031709-equipment blanks; sample YS01-FB01-031609-field blank; sample YS01-GW22P-0309-field duplicate of sample YS01-GW22-0309; and sample YS03-GW08BP-0309-field duplicate of sample YS03-GW08B-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Technical Holding Times	*
• Sample Condition	
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	
• Identification/Quantitation	
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

One sample contained headspace that resulted in qualifying the data as biased low.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

The matrix spike and matrix spike duplicate exhibited one high recovery that resulted in qualifying the corresponding positive result in the associated sample as estimated.

Three samples required a dilution to obtain results within the calibration range.

Total and Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The matrix spike associated with the total metals analysis exhibited non-compliant recoveries for selenium. This analyte was qualified as biased low in the associated field samples.

The serial dilution analysis exhibited non-compliant %Ds in both the total and dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ.

One of the submitted field duplicate pairs exhibited non-compliant RPDs for two analytes in both the total and dissolved analyses. These analytes were flagged as estimated J in the field duplicate pairs only.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/13-18/09 and samples were received at the laboratory 03/14-19/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Sample Condition

VOA

All sample vials for YS01-TB01-031309 contained headspace; therefore results were qualified as biased low (L/UL).

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 03/20/09	acetone	0.0372	YS01-GW12-0309	L/R	CCL
IC 03/25/09	2-butanone	0.0378	YS01-GW14-0309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW22P-0309	L/R	ICL
IC 02/28/09	acetone	0.0405	YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	L/R	ICL
CC 03/29/09	acetone 2-butanone	0.0339 0.0443	YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	L/R	CCL
	chloromethane	-23.81		J	CCH
CC 03/30/09	acetone	0.0402	YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	L/R	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.23J ug/L	0.5 ug/L	1.15 ug/L
VBLKHT	chloromethane	0.19J	0.5	0.95
	acetone	1.3J	2.5	13
	2-hexanone	0.72J	2.5	3.6
	1,2,4-trichlorobenzene	0.16J	0.5	0.8
VBLKDH	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031309	acetone	2.6	2.5	26
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031609	chloromethane	0.23J	0.5	1.15
	acetone	2.2J	2.5	22
YS03-TB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	2.7	2.5	27
	toluene	0.11J	0.5	0.55
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	toluene	0.34J	0.5	1.7
YS03-EB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	3	2.5	30
	methylene chloride	7.6	0.5	76
	chloroform	0.54	0.5	2.7
	toluene	0.72	0.5	3.6
YS03-EB02-031709	chloromethane	0.21J	0.5	1.05
	acetone	3.4	2.5	34
	methylene chloride	7.9	0.5	79
	chloroform	0.56	0.5	2.8
	toluene	0.72	0.5	3.6
YS01-EB01-031609	chloromethane	0.25J	0.5	1.25
	acetone	2.9	2.5	29
	methylene chloride	9.6	0.5	96
	chloroform	0.67	0.5	3.35
	toluene	0.94	0.5	4.7
YS01-EB02-031609	chloromethane	0.21J	0.5	1.05
	acetone	2.5	2.5	25
	methylene chloride	9	0.5	90
	chloroform	0.61	0.5	3.05
	toluene	0.87	0.5	4.35
YS01-EB01-031309	chloromethane	0.32J	0.5	1.6
	acetone	26	2.5	260
	methylene chloride	0.88	0.5	8.8
	2-butanone	3.6	2.5	36
	toluene	0.35J	0.5	1.75

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS03-EB02-031809	chloromethane	0.19J	0.5	0.95
	acetone	7.4	2.5	74
	methylene chloride	3.1	0.5	31
	2-butanone	1.9J	2.5	19
	chloroform	0.22J	0.5	1.1
	toluene	0.34J	0.5	1.7
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
YS01-FB01-031609	chloromethane	0.24J	0.5	1.2
	acetone	2.9	2.5	29
	methylene chloride	9.7	0.5	97
	chloroform	0.66	0.5	3.3
	toluene	0.92	0.5	4.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	B	BL
YS03-GW08B-0309	2-hexanone	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	B	BL
YS03-GW21-0309	2-butanone	B	BL

Total and Dissolved Metals

Preparation, calibration and field blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	nickel	1.003B ug/L	5.015 ug/L	B	BL
	zinc	5.517B ug/L	27.585 ug/L	B	BL
ICB/CCB – dissolved metals	aluminum	74.2 B ug/L	371 ug/L	B	BL
	antimony	3.1B ug/L	15.5 ug/L	B	BL
	arsenic	2.5B ug/L	12.5 ug/L	B	BL
	beryllium	1.9B ug/L	9.5 ug/L	B	BL
	cadmium	0.9B ug/L	4.5 ug/L	B	BL
	cobalt	2.5b ug/L	12.5 ug/L	B	BL
	iron	29.2B ug/L	146 ug/L	B	BL
	selenium	2.7B ug/L	13.5 ug/L	B	BL
	thallium	4.7B ug/L	23.5 ug/L	B	BL
	copper	-1.5 ug/L	≤ 10X MDL (8.0 ug/L)	L/UL	BL
YS03-FB01-031909 –dissolved	potassium	592B ug/L	2960 ug/L	B	BL
YS01-EB01-031309-dissolved	manganese	0.43B ug/L	2.15 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW21-0309	nickel	B	BL
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309	zinc	B	BL
YS01-GW14-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	B	BL
YS01-GW04A-0309	antimony	B	BL
YS01-GW04A-0309	arsenic	B	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	B	BL
YS01-GW04A-0309	iron	B	BL
YS01-GW22-0309	selenium	B	BL
YS01-GW14-0309	thallium	B	BL
all field samples	copper	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	B	BL
YS01-GW12-0309	manganese	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	3.658B ug/L	18.29 ug/L	B	BL
ICB/CCB – total metals	lead	-1.7B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	beryllium	-0.5B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
YS03-EB01-031709	iron	57.1B ug/L	285.5 ug/L	B	BL
	manganese	2.2B ug/L	11 ug/L	B	BL
YS03-EB01-031809	chromium	0.77B ug/L	3.85 ug/L	B	BL
	nickel	0.75B ug/L	3.75 ug/L	B	BL
YS03-EB02-031809	chromium	0.83B ug/L	4.15 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL
YS03-FB01-031909	beryllium	1.1B ug/L	5.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
all total metals field samples	lead	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	L/UL	BL
YS03-GW18-0309	iron	B	BL
YS03-GW18-0309	manganese	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	B	BL
YS03-GW21-0309	beryllium	B	BL

Matrix Spike

VOA

The matrix spike and matrix spike duplicate associated with sample YS01-GW04A-0309 exhibited high recoveries for trichloroethene at 140% and 195% (QC limit 70-125%); therefore the positive result for this compound in the associated sample was qualified as estimated (J), qualifier code: MSH.

Total and Dissolved Metals

The matrix spike analysis of sample YS01-GW04-0309 for total metals exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS01-GW04A-0309	selenium	all total metals field samples	73/79.2	L/UL	MSL

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's for the analyte potassium in both the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS01-GW04A-0309	potassium	all field samples	14.7 20.3	J/UJ	SD

Field Duplicates

Total & Dissolved Metals

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for two analytes. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS01-GW22-0309, YS01-GW22P-0309	aluminum* iron	YS03-GW22-0309, YS03-GW22P-0309 (dissolved)	97 119	J	FD
YS01-GW22-0309, YS01-GW22P-0309	aluminum iron	YS03-GW22-0309, YS03-GW22P-0309 (total)	94 29	J	FD

*Note – this analyte was previously flagged B in the field duplicate due to blank contamination.

Identification/Quantitation

VOA

A dilution was required for samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309 to obtain results within the calibration range. Therefore, E-flagged compound results were not used in the initial analysis of these samples in favor of the corresponding D-flagged compound result in the dilution, qualifier code: DL.

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Reporting Limits

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) were met. No validation action was required.

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS01-TB01-031309	all results	+/-	L/UL	OT
YS01-GW12-0309	acetone	+/-	L/R	CCL
YS01-GW14-0309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW22P-0309	2-butanone	+/-	L/R	ICL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	acetone	+/-	L/R	ICL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	acetone* 2-butanone	+/-	L/R	CCL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	chloromethane	+	J	CCH
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	acetone*	+/-	L/R	CCL
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	+	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	+	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	+	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	+	B	BL
YS03-GW08B-0309	2-hexanone	+	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	+	B	BL
YS03-GW21-0309	2-butanone	+	B	BL

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS01-GW04A-0309	trichloroethene	+	J	MSH
YS01-GW12-0309, YS01-GW22-0309, YS01-GW22P-0309	all E-flagged results	+	R	DL
YS01-GW12-0309DL, YS01-GW22-0309DL, YS01-GW22P-0309DL	all results except D-flagged compounds	+/-	R	DL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	antimony	+ up to action level	B	BL
all total metals field samples	lead	+/- up to action level	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	+/- up to action level	L/UL	BL
YS03-GW18-0309	iron	+ up to action level	B	BL
YS03-GW18-0309	manganese	+ up to action level	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	+ up to action level	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	+ up to action level	B	BL
YS03-GW21-0309	beryllium	+ up to action level	B	BL
all total metals field samples	selenium	+/-	L/UL	MSL
all total metals field samples	potassium	+/-	J/UJ	SD
YS01-GW22-0309, YS01-GW22P-0309	aluminum iron	+	J	FD
all samples	all analytes	+B	J	

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW21-0309	nickel	+ up to action level	B	BL
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309	zinc	+ up to action level	B	BL
YS01-GW14-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	+ up to action level	B	BL
YS01-GW04A-0309	antimony	+ up to action level	B	BL
YS01-GW04A-0309	arsenic	+ up to action level	B	BL

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	+ up to action level	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	+ up to action level	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	+ up to action level	B	BL
YS01-GW04A-0309	iron	+ up to action level	B	BL
YS01-GW22-0309	selenium	+ up to action level	B	BL
YS01-GW14-0309	thallium	+ up to action level	B	BL
all field samples	copper	+/- up to action level	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	+ up to action level	B	BL
YS01-GW12-0309	manganese	+ up to action level	B	BL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
YS01-GW22-0309, YS01-GW22P-0309	aluminum* iron	+	J	FD
all samples	all analytes	+B	J	

*aluminum in field dup sample was flagged B due to blank contamination

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-03R371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.32	~~J~~	J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	26	L	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	0.88		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	3.6	L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.35	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

LM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-03R371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	0.17	J
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WP D60609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-10R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.25	~~U~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.9	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	9.6	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	0.67	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.94	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-10R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060909

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB02-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-09R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.21	~~J~~ J	CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	2.5	L	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	9		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R	CCL
67-66-3	Chloroform	0.10	0.5	0.61		
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.87		
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB02-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-09R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-FB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-11R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.24	~~J~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.9	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	9.7	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	0.66	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.92	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-FB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-11R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060604

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-07R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~JB~~ B DL
75-01-4	Vinyl Chloride	0.10	0.5	0.48	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.1	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	0.15	J
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	20	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

LM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-07R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	20	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0591
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	12	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.21	J
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	3.7	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0591
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.2	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D090609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-0173
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/21/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032035-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	0.14	J
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	~~U~~ R CCL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.14	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	4.3	
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	71	~~E~~ R DL
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VV 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-0173
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/21/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032035-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	4.1	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VV 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-01D91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 4.2

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.42	2.1	ND	U
74-87-3	Chloromethane	0.42	2.1	ND	U
75-01-4	Vinyl Chloride	0.42	2.1	ND	U
74-83-9	Bromomethane	2.0	2.1	ND	U
75-00-3	Chloroethane	0.54	2.1	ND	U
75-69-4	Trichlorofluoromethane	0.42	2.1	ND	U
75-35-4	1,1-Dichloroethene	0.42	2.1	ND	U
75-15-0	Carbon disulfide	0.42	2.1	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.63	2.1	ND	U
67-64-1	Acetone	4.8	10	4.9	DJ
79-20-9	Methyl acetate	0.42	2.1	ND	U
75-09-2	Methylene Chloride	0.42	2.1	ND	U
156-60-5	trans-1,2-Dichloroethene	0.42	2.1	ND	U
1634-04-4	Methyl-tert-butyl ether	0.42	2.1	ND	U
75-34-3	1,1-Dichloroethane	0.42	2.1	ND	U
156-59-2	cis-1,2-Dichloroethene	0.42	2.1	3.2	D
78-93-3	2-butanone	2.1	10	ND	U
67-66-3	Chloroform	0.42	2.1	ND	U
71-55-6	1,1,1-Trichloroethane	0.42	2.1	ND	U
56-23-5	Carbon Tetrachloride	0.42	2.1	ND	U
71-43-2	Benzene	0.42	2.1	ND	U
107-06-2	1,2-Dichloroethane	0.42	2.1	ND	U
79-01-6	Trichloroethene	0.42	2.1	56	D
78-87-5	1,2-Dichloropropane	0.42	2.1	ND	U
75-27-4	Bromodichloromethane	0.42	2.1	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.42	2.1	ND	U
108-10-1	4-Methyl-2-pentanone	2.1	10	ND	U
108-88-3	Toluene	0.42	2.1	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.42	2.1	ND	U
79-00-5	1,1,2-Trichloroethane	0.42	2.1	ND	U
127-18-4	Tetrachloroethene	0.46	2.1	ND	U
591-78-6	2-hexanone	2.1	10	ND	U
124-48-1	Dibromochloromethane	0.42	2.1	ND	U

RDL

RDL

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-01D91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 4.2

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.42	2.1	ND	U
108-90-7	Chlorobenzene	0.42	2.1	ND	U
100-41-4	Ethylbenzene	0.42	2.1	ND	U
108-38-3	m,p-Xylene	0.83	4.2	ND	U
95-47-6	o-Xylene	0.42	2.1	ND	U
100-42-5	Styrene	0.42	2.1	ND	U
75-25-2	Bromoform	0.63	2.1	ND	U
98-82-8	Isopropyl Benzene	0.42	2.1	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	2.1	ND	U
541-73-1	1,3-Dichlorobenzene	0.42	2.1	ND	U
106-46-7	1,4-Dichlorobenzene	0.42	2.1	ND	U
95-50-1	1,2-Dichlorobenzene	0.42	2.1	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	2.1	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.54	2.1	ND	U
540-59-0	1,2-Dichloroethene (total)	0.42	2.1	3.1	D
1330-20-7	Xylene (total)	0.42	2.1	ND	U
110-82-7	Cyclohexane	0.42	2.1	ND	U
108-87-2	Methylcyclohexane	0.42	2.1	ND	U

RDL

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW14-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-02R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	1.7	~~J~~ B BR
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	0.35	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW14-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-02R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0691
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	3.6	
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	8.3	
75-15-0	Carbon disulfide	0.10	0.5	0.37	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	U
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.13	~~J~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.6	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	0.26	J
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	880	~~E~~ DL
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	0.24	J
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	1900	~~E~~ DL
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.25	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	1.7	
127-18-4	Tetrachloroethene	0.11	0.5	0.21	J
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0691
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	850	~~E~~ RDL
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-06D371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1250.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	130	630	ND	U RDL
74-87-3	Chloromethane	130	630	280	DJB
75-01-4	Vinyl Chloride	130	630	ND	U
74-83-9	Bromomethane	590	630	ND	U
75-00-3	Chloroethane	160	630	ND	U
75-69-4	Trichlorofluoromethane	130	630	ND	U
75-35-4	1,1-Dichloroethene	130	630	ND	U
75-15-0	Carbon disulfide	130	630	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	190	630	ND	U
67-64-1	Acetone	ERR	3100	ND	U
79-20-9	Methyl acetate	130	630	ND	U
75-09-2	Methylene Chloride	130	630	ND	U
156-60-5	trans-1,2-Dichloroethene	130	630	ND	U
1634-04-4	Methyl-tert-butyl ether	130	630	ND	U
75-34-3	1,1-Dichloroethane	130	630	ND	U
156-59-2	cis-1,2-Dichloroethene	130	630	3000	D RDL
78-93-3	2-butanone	630	3100	ND	U
67-66-3	Chloroform	130	630	ND	U
71-55-6	1,1,1-Trichloroethane	130	630	ND	U
56-23-5	Carbon Tetrachloride	130	630	ND	U
71-43-2	Benzene	130	630	ND	U
107-06-2	1,2-Dichloroethane	130	630	ND	U
79-01-6	Trichloroethene	130	630	18000	D RDL
78-87-5	1,2-Dichloropropane	130	630	ND	U
75-27-4	Bromodichloromethane	130	630	ND	U
10061-01-5	cis-1,3-Dichloropropene	130	630	ND	U
108-10-1	4-Methyl-2-pentanone	630	3100	ND	U
108-88-3	Toluene	130	630	ND	U
10061-02-6	trans-1,3-Dichloropropene	130	630	ND	U
79-00-5	1,1,2-Trichloroethane	130	630	ND	U
127-18-4	Tetrachloroethene	140	630	ND	U
591-78-6	2-hexanone	630	3100	ND	U
124-48-1	Dibromochloromethane	130	630	ND	U

ND = Not Detected
Q = Qualifier

WN 060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-06D371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1250.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	130	630	ND	U
108-90-7	Chlorobenzene	130	630	ND	U
100-41-4	Ethylbenzene	130	630	ND	U
108-38-3	m,p-Xylene	250	1300	ND	U
95-47-6	o-Xylene	130	630	ND	U
100-42-5	Styrene	130	630	ND	U
75-25-2	Bromoform	190	630	ND	U
98-82-8	Isopropyl Benzene	130	630	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	150	630	ND	U
541-73-1	1,3-Dichlorobenzene	130	630	ND	U
106-46-7	1,4-Dichlorobenzene	130	630	ND	U
95-50-1	1,2-Dichlorobenzene	130	630	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	230	630	ND	U
120-82-1	1,2,4-Trichlorobenzene	160	630	ND	U
540-59-0	1,2-Dichloroethene (total)	130	630	3000	
1330-20-7	Xylene (total)	130	630	ND	U
110-82-7	Cyclohexane	130	630	ND	U
108-87-2	Methylcyclohexane	130	630	ND	U

RDL

RDL

ND = Not Detected
Q = Qualifier

FORM I VOA

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1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	ND	U	
75-01-4	Vinyl Chloride	0.10	0.5	3.6		
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	8.6		
75-15-0	Carbon disulfide	0.10	0.5	0.39	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	1.5	~~J~~ B	BDL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	0.14	~~J~~ B	BDL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.3		
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	0.26	J	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	860	~~E~~ R	RDL
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R	ICL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	0.24	J	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	1800	~~E~~ R	RDL
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.25	~~J~~ B	BDL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	1.6		
127-18-4	Tetrachloroethene	0.11	0.5	0.21	J	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	830	E RDL
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6DLDC1

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-08D271
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1428.6

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	140	710	ND	U RDL
74-87-3	Chloromethane	140	710	290	DJB
75-01-4	Vinyl Chloride	140	710	ND	U
74-83-9	Bromomethane	670	710	ND	U
75-00-3	Chloroethane	190	710	ND	U
75-69-4	Trichlorofluoromethane	140	710	ND	U
75-35-4	1,1-Dichloroethene	140	710	ND	U
75-15-0	Carbon disulfide	140	710	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	210	710	ND	U
67-64-1	Acetone	ERR	3600	ND	U
79-20-9	Methyl acetate	140	710	ND	U
75-09-2	Methylene Chloride	140	710	ND	U
156-60-5	trans-1,2-Dichloroethene	140	710	ND	U
1634-04-4	Methyl-tert-butyl ether	140	710	ND	U
75-34-3	1,1-Dichloroethane	140	710	ND	U
156-59-2	cis-1,2-Dichloroethene	140	710	2900	D
78-93-3	2-butanone	710	3600	ND	U RDL
67-66-3	Chloroform	140	710	ND	U
71-55-6	1,1,1-Trichloroethane	140	710	ND	U
56-23-5	Carbon Tetrachloride	140	710	ND	U
71-43-2	Benzene	140	710	ND	U
107-06-2	1,2-Dichloroethane	140	710	ND	U
79-01-6	Trichloroethene	140	710	17000	D
78-87-5	1,2-Dichloropropane	140	710	ND	U RDL
75-27-4	Bromodichloromethane	140	710	ND	U
10061-01-5	cis-1,3-Dichloropropene	140	710	ND	U
108-10-1	4-Methyl-2-pentanone	710	3600	ND	U
108-88-3	Toluene	140	710	ND	U
10061-02-6	trans-1,3-Dichloropropene	140	710	ND	U
79-00-5	1,1,2-Trichloroethane	140	710	ND	U
127-18-4	Tetrachloroethene	160	710	ND	U
591-78-6	2-hexanone	710	3600	ND	U
124-48-1	Dibromochloromethane	140	710	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

042

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-08D271
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1428.6

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	140	710	ND	U
108-90-7	Chlorobenzene	140	710	ND	U
100-41-4	Ethylbenzene	140	710	ND	U
108-38-3	m,p-Xylene	290	1400	ND	U
95-47-6	o-Xylene	140	710	ND	U
100-42-5	Styrene	140	710	ND	U
75-25-2	Bromoform	210	710	ND	U
98-82-8	Isopropyl Benzene	140	710	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	170	710	ND	U
541-73-1	1,3-Dichlorobenzene	140	710	ND	U
106-46-7	1,4-Dichlorobenzene	140	710	ND	U
95-50-1	1,2-Dichlorobenzene	140	710	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	260	710	ND	U
120-82-1	1,2,4-Trichlorobenzene	190	710	ND	U
540-59-0	1,2-Dichloroethene (total)	140	710	2800	D
1330-20-7	Xylene (total)	140	710	ND	U
110-82-7	Cyclohexane	140	710	ND	U
108-87-2	Methylcyclohexane	140	710	ND	U

RPDL

RPDL

ND = Not Detected
Q = Qualifier

FORM I VOA

06/06/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-04R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.6	L
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6/06/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-04R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

DL OT

ND = Not Detected
Q = Qualifier

FORM I VOA

D060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-12R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~U~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.2	~~U~~ J ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-12R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-17R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JD~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	7.6	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	0.54	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.72	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WC 060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-17R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

MW 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB02-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1871
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~J~~ JCCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.4	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	7.9	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~UR~~ CCL
67-66-3	Chloroform	0.10	0.5	0.56	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.72	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D060609

050

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB02-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1871
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08B-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-21
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-21R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033012-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	0.15	J
74-87-3	Chloromethane	0.10	0.5	0.25	~~JB~~ B BSL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.7	~~B~~ B BSL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.12	~~J~~ B BSL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.12	J
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	4.9	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	0.58	~~JB~~ B BSL
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VM 060609

052

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08B-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-21
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-21R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	0.16	~~JB~~ BPR
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.12	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

MM 060609

053

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08BP-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-23
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-23R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	0.15	J
74-87-3	Chloromethane	0.10	0.5	0.16	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.3	~~JB~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.14	J
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	5	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

06D604

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08BP-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-23
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-23R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.13	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-15R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	2.3	
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	0.35	J
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.9	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	0.1	J
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	3.7	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	3.8	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VM 060609

056

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-15R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	3.7	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

057

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-13R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.7	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.18	J
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ RCCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

058

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-13R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.18	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW18-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-16R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.16	~~JB~~ B PL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	~~U~~ R ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.91	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6060

060

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW18-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-16R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

061

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW21-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-22
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-22R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.91	~~B~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	1.6	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	8.2	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	0.4	J
75-09-2	Methylene Chloride	0.10	0.5	0.32	~~B~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	2.5	
78-93-3	2-butanone	0.50	2.5	2.7	B BL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	2.9	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.58	B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D60609

062

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW21-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-22
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-22R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.17	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	0.11	J
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	2.5	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

063

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW23-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-20R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	0.19	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	12	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	5.9	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ BL CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	9.9	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.1	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D6/6/09

064

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW23-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-20R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.15	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	5.9	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

065

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW26-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-14D71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 20.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	2.0	10	ND	U
74-87-3	Chloromethane	2.0	10	3.5	~~JB~~ BM
75-01-4	Vinyl Chloride	2.0	10	ND	U
74-83-9	Bromomethane	9.4	10	ND	U
75-00-3	Chloroethane	2.6	10	ND	U
75-69-4	Trichlorofluoromethane	2.0	10	ND	U
75-35-4	1,1-Dichloroethene	2.0	10	ND	U
75-15-0	Carbon disulfide	2.0	10	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	3.0	10	ND	U
67-64-1	Acetone	23	50	ND	~~U~~ RICL
79-20-9	Methyl acetate	2.0	10	ND	U
75-09-2	Methylene Chloride	2.0	10	ND	U
156-60-5	trans-1,2-Dichloroethene	2.0	10	ND	U
1634-04-4	Methyl-tert-butyl ether	2.0	10	ND	U
75-34-3	1,1-Dichloroethane	2.0	10	ND	U
156-59-2	cis-1,2-Dichloroethene	2.0	10	330	
78-93-3	2-butanone	10	50	ND	~~U~~ RCL
67-66-3	Chloroform	2.0	10	ND	U
71-55-6	1,1,1-Trichloroethane	2.0	10	ND	U
56-23-5	Carbon Tetrachloride	2.0	10	ND	U
71-43-2	Benzene	2.0	10	ND	U
107-06-2	1,2-Dichloroethane	2.0	10	ND	U
79-01-6	Trichloroethene	2.0	10	130	
78-87-5	1,2-Dichloropropane	2.0	10	ND	U
75-27-4	Bromodichloromethane	2.0	10	ND	U
10061-01-5	cis-1,3-Dichloropropene	2.0	10	ND	U
108-10-1	4-Methyl-2-pentanone	10	50	ND	U
108-88-3	Toluene	2.0	10	ND	U
10061-02-6	trans-1,3-Dichloropropene	2.0	10	ND	U
79-00-5	1,1,2-Trichloroethane	2.0	10	ND	U
127-18-4	Tetrachloroethene	2.2	10	ND	U
591-78-6	2-hexanone	10	50	ND	U
124-48-1	Dibromochloromethane	2.0	10	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VM 060609

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1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW26-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-14D71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 20.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	2.0	10	ND	U
108-90-7	Chlorobenzene	2.0	10	ND	U
100-41-4	Ethylbenzene	2.0	10	ND	U
108-38-3	m,p-Xylene	4.0	20	ND	U
95-47-6	o-Xylene	2.0	10	ND	U
100-42-5	Styrene	2.0	10	ND	U
75-25-2	Bromoform	3.0	10	ND	U
98-82-8	Isopropyl Benzene	2.0	10	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	2.4	10	ND	U
541-73-1	1,3-Dichlorobenzene	2.0	10	ND	U
106-46-7	1,4-Dichlorobenzene	2.0	10	ND	U
95-50-1	1,2-Dichlorobenzene	2.0	10	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	3.6	10	ND	U
120-82-1	1,2,4-Trichlorobenzene	2.6	10	ND	U
540-59-0	1,2-Dichloroethene (total)	2.0	10	330	
1330-20-7	Xylene (total)	2.0	10	ND	U
110-82-7	Cyclohexane	2.0	10	ND	U
108-87-2	Methylcyclohexane	2.0	10	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-TB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1971
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~J~~ JCCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.7	L JCL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.11	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60604

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1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-TB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1971
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MS171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	6.2	
74-87-3	Chloromethane	0.10	0.5	5.4	B
75-01-4	Vinyl Chloride	0.10	0.5	6.7	
74-83-9	Bromomethane	0.47	0.5	5.9	
75-00-3	Chloroethane	0.13	0.5	6.6	
75-69-4	Trichlorofluoromethane	0.10	0.5	6.7	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.7	
75-15-0	Carbon disulfide	0.10	0.5	6.3	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	6.3	
67-64-1	Acetone	1.2	2.5	48	
79-20-9	Methyl acetate	0.10	0.5	6.3	
75-09-2	Methylene Chloride	0.10	0.5	6.1	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.8	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	6.6	
75-34-3	1,1-Dichloroethane	0.10	0.5	6.5	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	6.3	
78-93-3	2-butanone	0.50	2.5	36	
67-66-3	Chloroform	0.10	0.5	6.5	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	6.4	
56-23-5	Carbon Tetrachloride	0.10	0.5	6.6	
71-43-2	Benzene	0.10	0.5	6	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.6	
79-01-6	Trichloroethene	0.10	0.5	11	
78-87-5	1,2-Dichloropropane	0.10	0.5	6.4	
75-27-4	Bromodichloromethane	0.10	0.5	6.4	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	6.1	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	36	
108-88-3	Toluene	0.10	0.5	6	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	6.7	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.7	
127-18-4	Tetrachloroethene	0.11	0.5	5.7	
591-78-6	2-hexanone	0.50	2.5	36	
124-48-1	Dibromochloromethane	0.10	0.5	5.9	

ND = Not Detected
Q = Qualifier

FORM I VOA

070

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MS171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.9	
108-90-7	Chlorobenzene	0.10	0.5	5.9	
100-41-4	Ethylbenzene	0.10	0.5	6.1	
108-38-3	m,p-Xylene	0.20	1	12	
95-47-6	o-Xylene	0.10	0.5	6.1	
100-42-5	Styrene	0.10	0.5	6	
75-25-2	Bromoform	0.15	0.5	5.7	
98-82-8	Isopropyl Benzene	0.10	0.5	6.4	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	5.9	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	5.6	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	5.7	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	5.7	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	6.1	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	6	
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	19	
110-82-7	Cyclohexane	0.10	0.5	6.3	
108-87-2	Methylcyclohexane	0.10	0.5	6.3	

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MSD171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	5.7	
74-87-3	Chloromethane	0.10	0.5	4.9	B
75-01-4	Vinyl Chloride	0.10	0.5	5.9	
74-83-9	Bromomethane	0.47	0.5	5.5	
75-00-3	Chloroethane	0.13	0.5	5.7	
75-69-4	Trichlorofluoromethane	0.10	0.5	5.9	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.5	
75-15-0	Carbon disulfide	0.10	0.5	5.9	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	5.8	
67-64-1	Acetone	1.2	2.5	31	
79-20-9	Methyl acetate	0.10	0.5	5.7	
75-09-2	Methylene Chloride	0.10	0.5	5.7	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.5	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	6.2	
75-34-3	1,1-Dichloroethane	0.10	0.5	6	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	6.2	
78-93-3	2-butanone	0.50	2.5	32	
67-66-3	Chloroform	0.10	0.5	6.1	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	5.9	
56-23-5	Carbon Tetrachloride	0.10	0.5	6	
71-43-2	Benzene	0.10	0.5	5.6	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.1	
79-01-6	Trichloroethene	0.10	0.5	13	
78-87-5	1,2-Dichloropropane	0.10	0.5	5.9	
75-27-4	Bromodichloromethane	0.10	0.5	5.9	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	5.6	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	33	
108-88-3	Toluene	0.10	0.5	5.6	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	6	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.3	
127-18-4	Tetrachloroethene	0.11	0.5	5.4	
591-78-6	2-hexanone	0.50	2.5	33	
124-48-1	Dibromochloromethane	0.10	0.5	5.4	

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MSD171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.5	
108-90-7	Chlorobenzene	0.10	0.5	5.6	
100-41-4	Ethylbenzene	0.10	0.5	5.7	
108-38-3	m,p-Xylene	0.20	1	12	
95-47-6	o-Xylene	0.10	0.5	5.7	
100-42-5	Styrene	0.10	0.5	5.6	
75-25-2	Bromoform	0.15	0.5	5.3	
98-82-8	Isopropyl Benzene	0.10	0.5	6	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	5.5	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	5.4	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	5.4	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	5.7	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	5.6	
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	18	
110-82-7	Cyclohexane	0.10	0.5	5.8	
108-87-2	Methylcyclohexane	0.10	0.5	5.8	

ND = Not Detected
Q = Qualifier

D60609

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW04-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-07

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1300			P
7440-36-0	Antimony	5.1	~~B~~	B BL	P
7440-38-2	Arsenic	5.2	~~B~~	J	P
7440-39-3	Barium	46.7	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	82200			P
7440-47-3	Chromium	2.2	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.85	~~B~~	J	P
7439-89-6	Iron	2170			P
7439-92-1	Lead	1.4	~~B~~	UL BL	P
7439-95-4	Magnesium	2340	~~B~~	J	P
7439-96-5	Manganese	72.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	1130	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	~~B~~	W UL MSL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6670			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.2	~~B~~	J	P
7440-66-6	Zinc	6.3	~~B~~	J	P

JMC 6309

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW04A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-05

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	162	~~B~~	J	P
7440-36-0	Antimony	5.2	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	10.0	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	25200			P
7440-47-3	Chromium	4.0	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.91	~~B~~	J	P
7439-89-6	Iron	320			P
7439-92-1	Lead	1.4	~~U~~	WL BL	P
7439-95-4	Magnesium	425	~~B~~	J	P
7439-96-5	Manganese	26.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.1	~~B~~	J	P
7440-09-7	Potassium	1070	~~B~~	EMJ SD	P
7782-49-2	Selenium	2.2	~~U~~	WL MSA	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5770			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW12-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-01

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	224			P
7440-36-0	Antimony	3.5	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	101	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	UL BL	P
7440-43-9	Cadmium	11.4			P
7440-70-2	Calcium	73900			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	6.0			P
7439-89-6	Iron	375			P
7439-92-1	Lead	1.6	~~B~~	L BL	P
7439-95-4	Magnesium	5640			P
7439-96-5	Manganese	37.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	6.2	~~B~~	B BL	P
7440-09-7	Potassium	2300	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	~~U~~	~~UL~~ MSL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3070	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	2210			P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW14-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-02

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	599			P
7440-36-0	Antimony	4.5	~~B~~	B BL	P
7440-38-2	Arsenic	26.6			P
7440-39-3	Barium	104	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	1920	~~B~~	~~L BL~~	P
7440-47-3	Chromium	1.8	~~B~~	J	P
7440-48-4	Cobalt	4.1	~~B~~	J	P
7440-50-8	Copper	1.8	~~B~~	J	P
7439-89-6	Iron	9910			P
7439-92-1	Lead	6.0		L BL	P
7439-95-4	Magnesium	929	~~B~~	J	P
7439-96-5	Manganese	26.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.2	~~B~~	B BL	P
7440-09-7	Potassium	911	~~B~~	~~L~~ J SD	P
7782-49-2	Selenium	2.2	~~B~~	~~L~~ UL MBL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3050	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.0	~~B~~	J	P
7440-66-6	Zinc	14.5	~~B~~	J	P

J XI corr JAC 61009

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-06

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1420		J FD	P
7440-36-0	Antimony	5.3	B	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	27.7	B	J	P
7440-41-7	Beryllium	0.42	U	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	125000			P
7440-47-3	Chromium	9.0	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.7	B	J	P
7439-89-6	Iron	3960		J FD	P
7439-92-1	Lead	1.4	U	UL BL	P
7439-95-4	Magnesium	4760	B	J	P
7439-96-5	Manganese	103			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.5	B	J	P
7440-09-7	Potassium	2500	B	BJ SD	P
7782-49-2	Selenium	2.2	U	UL NO	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7540			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.9	B	J	P
7440-66-6	Zinc	14.9	B	J	P

JAC 6/30/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW22P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-08

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3920		J FD	P
7440-36-0	Antimony	4.4	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	31.9	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	124000			P
7440-47-3	Chromium	11.5			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.3	~~B~~	J	P
7439-89-6	Iron	5280		J FD	P
7439-92-1	Lead	1.6	~~B~~	L BL	P
7439-95-4	Magnesium	4380	~~B~~	J	P
7439-96-5	Manganese	103			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.6	~~B~~	J	P
7440-09-7	Potassium	2830	~~B~~	~~B~~J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~L~~ UL MSL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7130			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	9.6	~~B~~	J	P
7440-66-6	Zinc	20.8			P

JLC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-21

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	107	~~B~~	J	P
7440-36-0	Antimony	4.7	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	31.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	1.2	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	280			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	2530	~~B~~	J	P
7439-96-5	Manganese	39.2			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	J	P
7440-09-7	Potassium	1040	~~B~~	EJSD	P
7782-49-2	Selenium	2.2	~~U~~	ULMSH	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8660			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.3	~~B~~	J	P
7440-66-6	Zinc	6.6	~~B~~	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-23

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	116	~~B~~	J	P
7440-36-0	Antimony	6.0	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	32.4	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	12.7			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	306			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	2580	~~B~~	J	P
7439-96-5	Manganese	39.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.8	~~B~~	J	P
7440-09-7	Potassium	1090	~~B~~	BJ SD	P
7782-49-2	Selenium	2.2	~~U~~	UL MBL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8950			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	~~B~~	J	P
7440-66-6	Zinc	20.6			P

JLC 6/26/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW15-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-15

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	309			P	
7440-36-0	Antimony	5.0	~~B~~	B BL	P	
7440-38-2	Arsenic	2.2	U		P	
7440-39-3	Barium	49.5	~~B~~	J	P	
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	159000			P	
7440-47-3	Chromium	1.9	~~B~~	J	P	
7440-48-4	Cobalt	2.6	~~B~~	J	P	
7440-50-8	Copper	1.7	~~B~~	J	P	
7439-89-6	Iron	1410			P	
7439-92-1	Lead	1.4	~~U~~	UL BL	P	
7439-95-4	Magnesium	2180	~~B~~	J	P	
7439-96-5	Manganese	219			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.4	~~B~~	J	P	
7440-09-7	Potassium	1060	~~B~~	~~E~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~M~~ UL	P	MSL
7440-22-4	Silver	0.62	U		P	
7440-23-5	Sodium	14200			P	
7440-28-0	Thallium	3.3	U		P	
7440-62-2	Vanadium	1.5	~~B~~	J	P	
7440-66-6	Zinc	19.0	~~B~~	J	P	

JLC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW15A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-13

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	5.4	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.8	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74900			P
7440-47-3	Chromium	1.4	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	1340			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	1040	~~B~~	J	P
7439-96-5	Manganese	47.6			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	751	~~B~~	~~E~~ J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5490			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.8	~~B~~	J	P

JAC 4/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-16

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	181	~~B~~	J	P
7440-36-0	Antimony	5.3	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	39.7	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	31500			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	35.1	~~B~~	B BL	P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	502	~~B~~	J	P
7439-96-5	Manganese	0.42	~~B~~	B BL	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	1480	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	9620			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.4	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-22

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4290			P
7440-36-0	Antimony	7.3	~~B~~	B BL	P
7440-38-2	Arsenic	45.0			P
7440-39-3	Barium	66.0	~~B~~	J	P
7440-41-7	Beryllium	0.45	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	126000			P
7440-47-3	Chromium	20.8			P
7440-48-4	Cobalt	2.7	~~B~~	J	P
7440-50-8	Copper	3.1	~~B~~	J	P
7439-89-6	Iron	11000			P
7439-92-1	Lead	2.5	~~B~~	L BL	P
7439-95-4	Magnesium	4500	~~B~~	J	P
7439-96-5	Manganese	1260			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	9.3	~~B~~	J	P
7440-09-7	Potassium	2950	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~H~~ UL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	29.0			P
7440-66-6	Zinc	21.7			P

NBL

JC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-20

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	193	~~B~~	J	P	
7440-36-0	Antimony	3.9	~~B~~	B BL	P	
7440-38-2	Arsenic	2.7	~~B~~	J	P	
7440-39-3	Barium	38.4	~~B~~	J	P	
7440-41-7	Beryllium	0.42	U		P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	106000			P	
7440-47-3	Chromium	2.8	~~B~~	B BL	P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	2190			P	
7439-92-1	Lead	1.4	~~U~~	UL BL	P	
7439-95-4	Magnesium	2650	~~B~~	J	P	
7439-96-5	Manganese	147			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.4	~~B~~	B BL	P	
7440-09-7	Potassium	1910	~~B~~	EJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	W UL	P	WSL
7440-22-4	Silver	0.62	U		P	
7440-23-5	Sodium	35600			P	
7440-28-0	Thallium	3.3	U		P	
7440-62-2	Vanadium	1.0	~~B~~	J	P	
7440-66-6	Zinc	5.2	U		P	

6309

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW26-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-14

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	713			P
7440-36-0	Antimony	4.5	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	35.4	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	115000			P
7440-47-3	Chromium	5.6	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	2930			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	3810	~~B~~	J	P
7439-96-5	Manganese	79.1			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.1	~~B~~	J	P
7440-09-7	Potassium	1350	~~B~~	~~EJ~~ SD	P
7782-49-2	Selenium	2.2	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	12900			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.3	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB01-031309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-03

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	4.8	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	36.1	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	1.2	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	11.5	~~B~~	~~B~~ J	P
7782-49-2	Selenium	2.2	U	~~U~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	310	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-10

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	4.4	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	90.4	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	2.3	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U	~~W~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	521	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-09

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	3.3	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.52	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~E~~	P
7782-49-2	Selenium	2.2	U	~~N~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	257	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-FB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-11

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	3.7	~~B~~	~~J~~	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~E~~	P
7782-49-2	Selenium	2.2	U	~~N~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	194	~~B~~	~~J~~	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-17

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	3.8	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.40	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	57.1	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	2.2	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U	~~U~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	444	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-18

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	4.6	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	1.3	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U	~~W~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	529	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW04-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-06

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	56.1	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	5.4	~~B~~	J	P
7440-39-3	Barium	42.0	~~B~~	J	P
7440-41-7	Beryllium	1.0	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	91500			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	7.7		L BL	P
7439-89-6	Iron	596			P
7439-92-1	Lead	5.3			P
7439-95-4	Magnesium	2720	~~B~~	J	P
7439-96-5	Manganese	71.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.92	~~B~~	B BL	P
7440-09-7	Potassium	1540	~~B~~	~~E~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7910			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	11.5	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW04A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-04

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.8	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	9.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	27200			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.2	~~B~~	J L	P
7439-89-6	Iron	31.1	~~B~~	B BL	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	470	~~B~~	J	P
7439-96-5	Manganese	14.4			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.0	~~B~~	B BL	P
7440-09-7	Potassium	1390	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6250			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	11.1	~~B~~	B BL	P

BL Xlcorr JRC 6809

JRC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-01

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	103	~~B~~	J	P
7440-41-7	Beryllium	0.50	~~B~~	B BL	P
7440-43-9	Cadmium	13.0			P
7440-70-2	Calcium	81200			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	4.1	~~B~~	~~J~~ L	P BL
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	6550			P
7439-96-5	Manganese	0.99	~~B~~	B BL	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.6	~~B~~	J	P
7440-09-7	Potassium	3190	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3270	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	2470			P

XICorr JAC 6809

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW14-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-02

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	442			P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	103	~~B~~	J	P
7440-41-7	Beryllium	0.55	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	2040	~~B~~	J	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	3.4	~~B~~	B BL	P
7440-50-8	Copper	0.95	~~B~~	~~J~~ L	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	1040	~~B~~	J	P
7439-96-5	Manganese	25.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.9	~~B~~	B BL	P
7440-09-7	Potassium	1260	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3150	~~B~~	J	P
7440-28-0	Thallium	5.9	~~B~~	B BL	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	11.8	~~B~~	B BL	P

BL XICAR JAC 6809

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-05

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	582		J FD	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.9	~~B~~	J	P
7440-39-3	Barium	26.3	~~B~~	J	P
7440-41-7	Beryllium	0.83	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	138000			P
7440-47-3	Chromium	1.4	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.5	~~B~~	J L	P
7439-89-6	Iron	1500		J FD	P
7439-92-1	Lead	2.9	~~B~~	J	P
7439-95-4	Magnesium	5200			P
7439-96-5	Manganese	125			P
7439-97-6	Mercury	0.14	~~B~~	J	CV
7440-02-0	Nickel	2.3	~~B~~	B BL	P
7440-09-7	Potassium	2810	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	3.1	~~B~~	B BL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8320			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.1	~~B~~	J	P
7440-66-6	Zinc	15.6	~~B~~	B BL	P

BL Xlcorr JAC 6809

JAC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW22P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-07

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	202		B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.6	~~B~~	J	P
7440-41-7	Beryllium	0.71	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	129000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	BL BL	P
7439-89-6	Iron	382		J FD	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4800	~~B~~	J	P
7439-96-5	Manganese	98.2			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.7	~~B~~	B BL	P
7440-09-7	Potassium	2740	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8370			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.0	~~B~~	J	P
7440-66-6	Zinc	8.0	~~B~~	B BL	P

JMC 6309

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-18

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	73.5	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.5	~~B~~	J	P
7440-39-3	Barium	32.4	~~B~~	J	P
7440-41-7	Beryllium	1.9	~~B~~	B BL	P
7440-43-9	Cadmium	0.86	~~B~~	B BL	P
7440-70-2	Calcium	134000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	2.6	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	3050	~~B~~	J	P
7439-96-5	Manganese	32.8			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	~~B~~	B BL	P
7440-09-7	Potassium	1480	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10400			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	24.1		B BL	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW08BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-19

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	69.6	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.7	~~B~~	J	P
7440-39-3	Barium	31.2	~~B~~	J	P
7440-41-7	Beryllium	1.8	~~B~~	B BL	P
7440-43-9	Cadmium	0.75	~~B~~	B BL	P
7440-70-2	Calcium	132000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.9	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	ML BL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2970	~~B~~	J	P
7439-96-5	Manganese	34.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.6	~~B~~	B BL	P
7440-09-7	Potassium	1450	~~B~~	EB BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10100			P
7440-28-0	Thallium	4.1	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	12.0	~~B~~	B BL	P

JLC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW15-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-13

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	70.2	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.1	~~B~~	J	P
7440-39-3	Barium	48.5	~~B~~	J	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	175000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	2.7	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	UC BL	P
7439-89-6	Iron	956			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2550	~~B~~	J	P
7439-96-5	Manganese	226			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.2	~~B~~	B BL	P
7440-09-7	Potassium	1440	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	16900			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	8.5	~~B~~	B BL	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW15A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-11

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	19.7	~~B~~	J	P
7440-41-7	Beryllium	1.2	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	81900			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	119			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	1220	~~B~~	J	P
7439-96-5	Manganese	25.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.1	~~B~~	B BL	P
7440-09-7	Potassium	1090	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6300			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	8.7	~~B~~	B BL	P

JAK 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-14

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	264		B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	37.4	~~B~~	J	P
7440-41-7	Beryllium	1.6	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	31000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	590	~~B~~	J	P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.2	~~B~~	B BL	P
7440-09-7	Potassium	2110	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.0	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-20

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	108	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	34.7			P
7440-39-3	Barium	44.5	~~B~~	J	P
7440-41-7	Beryllium	2.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.93	~~B~~	B BL	P
7440-70-2	Calcium	116000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	3.1	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	2010			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4090	~~B~~	J	P
7439-96-5	Manganese	1260			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.7	~~B~~	B BL	P
7440-09-7	Potassium	1660	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.3	~~B~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	12000			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-17

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	69.6	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	6.0	~~B~~	J	P
7440-39-3	Barium	37.5	~~B~~	J	P
7440-41-7	Beryllium	1.5	~~B~~	B BL	P
7440-43-9	Cadmium	0.75	~~B~~	B BL	P
7440-70-2	Calcium	114000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	2.0	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	VL BL	P
7439-89-6	Iron	1800			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	3050	~~B~~	J	P
7439-96-5	Manganese	152			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.97	~~B~~	B BL	P
7440-09-7	Potassium	2550	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	41800			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW26-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-12

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.1	B	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.1	B	J	P
7440-39-3	Barium	33.5	B	J	P
7440-41-7	Beryllium	1.4	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	127000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	B	UL BL	P
7439-89-6	Iron	1960			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4330	B	J	P
7439-96-5	Manganese	76.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	1580	B	EB BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	14700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB01-031309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-03

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.43	~~U~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	16.4	~~U~~	~~J~~ J	P
7782-49-2	Selenium	2.4	~~U~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	~~U~~	J	P

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-09

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.1	~~U~~	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-08

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.66	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-FB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-10

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.92	~~B~~	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	~~B~~	J	P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

MC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-15

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	56.1	B	J	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.3	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	7.5	B	J	P

KC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-16

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.2	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	6.3	B	J	P

MC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 227 French Landing Drive, Suite 550 • Nashville, TN 37228 • 615-345-1115 • (fax) 615-846-5426

44265

Send Results to:	Send Invoice to:
Name Chelsea Bennett	Name
Company CH2M Hill	Company
Address 5700 Cleveland St Ste 101	Address
City VA Beach	City
State, Zip VA 23462	State, Zip
Phone 757 671 8311	Phone
Fax	Fax
E-mail	E-mail
Project No./Name: NWS Yorktown Site 1	**Sampler's (Signature):**

Analysis Requirements: VOC SW 846; MEE RSK 175; TOC 9060 As; Total Metals Fe, Mn; Dissolved Fe, Mn; Alk, Chloride, Sulfate; TDM pH; DIM pH; TDC pH

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	VOC SW 846	MEE RSK 175	TOC 9060 As	Total Metals Fe, Mn	Dissolved Fe, Mn	Alk, Chloride, Sulfate	TDM pH	DIM pH	TDC pH	Comments	No. of Bottles	Lab Use Only Containers/Pres.
0903092-01 0903093-01	3/13/09 1045	YSO1-GW012-031309	GW	3	2	2	1	1	1	<2	<2	<2	May be High	10	
0903092-02 0903093-02	3/13/09 1145	YSO1-GW014-031309	GW	3	2	2	1	1	1	<2	<2	<2	Low PH 2.5	10	
0903092-04	3/13/09 1200	YSO1-TB01-031309	TB	3											
0903092-03 0903093-03	3/13/09 1215	YSO1-EB01-031309	EB	3	—	—	1	1		<2	<2				

Have pea size air bubble in vials in cooler trip blank JK 3.17.09

Rec'd IPL for Total Metals for YSO1-EB01-031309 but did not rec. Alk, Chloride. JK 3.17.09

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
Relinquished by: (Signature)	Date/Time 3/13/09 1700	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 3.14.09 12:05	Temperature 1.1°C

REMARKS: GW012 May be High Conc.

GW014 Low PH 2-5

Details:

Page 1 of 1

Cooler No. 1 of 1

Date Shipped 3/13/09

Shipped By Fedex

Turnaround Per Contract

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

114129

2 Coolers CTO

15591

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

1606 501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 1
City: Virginia Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757-671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Pat Murphy, Mark Osborn	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs SW846 (40mL vials)	Metals ILM05.3	Filtered Metals ILM05.3	MEE RSK-175	TOC 9060/Lloyd Kahn	Chloride, Sulfate 300.0 Alkalinity 310.1					pH / Sample Info (Lab Use): Filtered Metals	Metals	Toc
0903092-06 / 0903093-05	YS01-GW22-0309	3/16/09	1100	AQ	10	5		2	2			3	1	1	2	2	1							
0903092-07 / 0903093-06	YS01-GW22P-0309	3/16/09	1115	AQ	5	3		2				3	1	1										
0903092-05 / 0903093-04	YS01-GWOHA-0309	3/16/09	1435	AQ	30	15		6	6			9	3	3	6	6	3							
0903092-09 / 0903093-08	YS01-EB02-031609	3/16/09	1525	AQ	5	3		2				3	1	1										
0903092-03 / 0903093-02	YS01-GWDH-0309	3/16/09	1410	AQ	10	5		2	2			3	1	1	2	2	1							
0903092-10 / 0903093-09	YS01-EB01-031609	3/16/09	1445	AQ	5	3		2				3	1	1										
0903092-12	YS01-TB01-031609	3/16/09	1500	AQ	3	3						3												
0903092-11 / 0903093-10	YS01-FB01-031609	3/16/09	1515	AQ	5	3		2				3	1	1										

Lab Use Only

Sample Unpacked By: PM
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

AQ=GW
Run QC on GWOHA (MS/MSD)
Metals were field filtered

Sample Custody

Relinquished by: PM	Date/Time: 3/16/09 1630	Received by: Kelly Burden	Date/Time: 3/17/09 0950		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontact? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.1, 0.6 °C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTT

CTO-166

2 coolers

15592

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CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4140

Page 1 of 1

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 3
City: Virginia Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Pat Murphy, Mark Ost, C. Burton	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type) — Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40 ml	Metals ILM05.3 PL (40 ml)	F Metals ILM05.3 PL	MEE RSK-175 40 ml	TOC 9060/Lloyd Kahn 4 ml	Chloride Sulfate 300.0 250 Alkalinity 310.1	pH / Sample Info (Lab Use): Metals	F Metals	TOC		
0903092-13 (0903098-11)	YS03-GW15A-0309	3/17/09	1105	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-14 (0903098-12)	YS03-GW26-0309	3/17/09	1115	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-15 (0903098-13)	YS03-GW15-0309	3/17/09	1255	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-16 (0903098-14)	YS03-GW18-0309	3/17/09	1535	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-17 (0903098-15)	YS03-EB01-031709	3/17/09	1630	GW	5	3		2				3	1	1				<2	<2	<5		
0903092-18 (0903098-16)	YS03-EB02-031709	3/17/09	1635	GW	5	3		2				3	1	1				<2	<2			
0903092-19	YS03-TB01-031709	3/17/09	1635	TB	3	3						3										

3/18/09

Lab Use Only

Sample Unpacked By: Dianne Byrd
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Metals were field filtered
YS03-GW15-0309 - all VOA vials have smaller than pea size bubble. **YS03-TB01-031709 - 1 of 3 vials has pea size bubble. ***YS03-GW15-0309 - MEE vials 1 has smaller than pea size and 1 has headspace bubble. 3/18/09

Sample Custody

Relinquished by:		Date/Time: 3/17/09 1730	Received by: Dianne Byrd	Date/Time: 03/18/09 0930	
Relinquished by:		Date/Time:	Received by:	Date/Time:	
Subcontact? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.6, 0.7	°C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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CTO-166

2 coolers

15593

Page 1 of 1

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CompuChem
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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW 846 40ML	Metals ILM05.3 100ML	F Metals ILM05.3 100ML	MEE RSK-175 40ML	TOC 9060/L Hcl 40ML Hahn	Chloride Sulfate 300.0 Alkalinity 310.1 250ML	pH / Sample Info (Lab Use): Metals	F Metals	F&D
090B113-01 (090B114-01)	YS03-GW08A-0309	3/18/09	1140	GW	30	15		6	6			9	3	3	6	6	3			
090B092-18 (090B093-17)	YS03-GW23-0309	3/18/09	1555	GW	10	5		2	2			3	1	1	2	2	1			
090B113-02 (090B114-02)	YS03-EB01-031809	3/18/09	1630	GW	5	3		2				3	1	1						
090B113-03 (090B114-03)	YS03-EB02-031809	3/18/09	1640	GW	5	3		2				3	1	1						
090B113-04	YS03-TB01-031809	3/18/09	0830	TB	3	3						3								
090B092-21 (090B093-18)	YS03-GW08B-0309	3/18/09	1030	GW	10	5		2	2			3	1	1	2	2	1			
090B092-22 (090B093-19)	YS03-GW08BP-0309	3/18/09	1035	GW	5	3		2				3	1	1						
090B092-19 (090B093-20)	YS03-GW21-0309	3/18/09	1210	GW	10	5		2	2			3	1	1	2	2	1			

Lab Use Only:

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:

Metals were field filtered
GW08A Run QA/QC (MS/MSD)

Sample Custody

Relinquished by: [signature] PM	Date/Time: 3/18/09 1730	Received by: [signature]	Date/Time: 3/19/09 0912		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontact? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.8 0.4 °C		

Samples stored 60 days after date report mailed at no extra charge

White & Yellow copy to lab • Pink copy for customer

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MEMORANDUM **CH2MHILL**

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 14, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample IDs were written incorrectly on COC 44265, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-GW012-0309	YS01-GW12-0309	3/13/2009	9:45
YS01-GW014-0309	YS01-GW14-0309	3/13/2009	11:45

For the following samples, the following analyses were requested on the COC and should be deleted. Do NOT analyze the following samples for TOC, Chloride, Sulfate, or Alkalinity:

Sample ID	Date Coll'd	Time Coll'd
YS01-EB01-031309	3/13/2009	12:15

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Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/13-16/09
Received Date: 03/14-17/09
Analysis Dates: 03/21-30/09

Cooler Temps: 0.1-1.1°C

All holding time requirements were met. All sample vials for YS01-TB01-031309 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS01-TB01-031609, YS01-TB01-031309, YS03-TB01-031809, YS03-TB01-031709- trip blanks; YS01-EB01-031609, YS01-EB02-031609, YS01-EB01-031309, YS03-EB01-031809, YS03-EB02-031809, YS03-EB01-031709 and YS03-EB02-031709- equipment blanks; YS01-FB01-031609, YS01-FB01-030909 and YS03-FB01-031909- field blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.23J ug/L	0.5 ug/L	1.15 ug/L
VBLKHT	chloromethane	0.19J	0.5	0.95
	acetone	1.3J	2.5	13
	2-hexanone	0.72J	2.5	3.6
	1,2,4-trichlorobenzene	0.16J	0.5	0.8
VBLKDH	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031309	acetone	2.6	2.5	26
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031609	chloromethane	0.23J	0.5	1.15
	acetone	2.2J	2.5	22
YS03-TB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	2.7	2.5	27
	toluene	0.11J	0.5	0.55
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	trichloroethene	0.11	0.5	0.55
	toluene	0.34J	0.5	1.7
YS03-EB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	3	2.5	30
	methylene chloride	7.6	0.5	76
	chloroform	0.54	0.5	2.7
	toluene	0.72	0.5	3.6
YS03-EB02-031709	chloromethane	0.21J	0.5	1.05
	acetone	3.4	2.5	34
	methylene chloride	7.9	0.5	79
	chloroform	0.56	0.5	2.8
	toluene	0.72	0.5	3.6
YS01-EB01-031609	chloromethane	0.25J	0.5	1.25
	acetone	2.9	2.5	29
	methylene chloride	9.6	0.5	96
	chloroform	0.67	0.5	3.35
	toluene	0.94	0.5	4.7
YS01-EB02-031609	chloromethane	0.21J	0.5	1.05
	acetone	2.5	2.5	25
	methylene chloride	9	0.5	90
	chloroform	0.61	0.5	3.05
	toluene	0.87	0.5	4.35
YS01-EB01-031309	chloromethane	0.32J	0.5	1.6
	acetone	26	2.5	260
	methylene chloride	0.88	0.5	8.8
	2-butanone	3.6	2.5	36
	toluene	0.35J	0.5	1.75

YS03-EB02-031809	chloromethane	0.19J	0.5	0.95
	acetone	7.4	2.5	74
	methylene chloride	3.1	0.5	31
	2-butanone	1.9J	2.5	19
	chloroform	0.22J	0.5	1.1
	toluene	0.34J	0.5	1.7
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
	ethylbenzene	0.11J	0.5	0.55
YS01-FB01-031609	chloromethane	0.24J	0.5	1.2
	acetone	2.9	2.5	29
	methylene chloride	9.7	0.5	97
	chloroform	0.66	0.5	3.3
	toluene	0.92	0.5	4.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	B	BL
YS03-GW08B-0309	2-hexanone	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	B	BL
YS03-GW21-0309	2-butanone	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS01-GW04A-0309—the MS and MSD exhibited high recoveries for trichloroethene at 140% and 195% (QC limit 70-125%); therefore the positive result for this compound in the associated sample was qualified as estimated (J), qualifier code: MSH.

Field Duplicate Sample

A field duplicate was submitted for samples YS01-GW22-0309 and YS03-GW08B-0309—no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments. Dilutions were required for samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309 to obtain results within the calibration range.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascuch **Date:** 6/5/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C20008-TUN173 BFB Injection Date: 03/20/09

Instrument ID: 5972HP73 BFB Injection Time: 2153

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.5
75	30.0 - 60.0% of mass 95	41.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.2
175	5.0 - 9.0% of mass 174	5.8 (7.0)1
176	95.0 - 101.0% of mass 174	78.7 (95.8)1
177	5.0 - 9.0% of mass 176	5.1 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C20008-CCV	9C20008-CCV173	03/20/09	2212
02	VBLKDH	9032035-BLK	9032035-BLK173	03/20/09	2243
03	VDHLCS	9032035-BS1	9032035-BS173	03/20/09	2312
04	VDHLCSD	9032035-BSD	9032035-BSD173	03/20/09	2341
05	YS01-GW12-0309	0903092-01	0903092-0173	03/21/09	0730
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP73 Calibration Date: 03/20/09 Time: 2212

Lab File ID: 9C20008-CCV173 Init. Calib. Date(s): 03/20/09 03/20/09

Init. Calib. Times: 1215 1610

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.8162600	0.7841033	0.7841033	0.001	-3.94	90.00	AVRG
Chloromethane	0.4439300	0.4551617	0.4551617	0.1	2.53	90.00	AVRG
Vinyl Chloride	0.2661400	0.2510384	0.2510384	0.001	-5.67	20.00	AVRG
Bromomethane	0.1487100	0.1424899	0.1424899	0.001	-4.18	90.00	AVRG
Chloroethane	122.56517	125.00000	0.1014989	0.001	-1.95	90.00	LINR
Trichlorofluoromethane	0.3816400	0.3544199	0.3544199	0.001	-7.13	90.00	AVRG
1,1-Dichloroethene	0.4396200	0.3773335	0.3773335	0.001	-14.17	20.00	AVRG
Carbon disulfide	1.7279500	1.6977688	1.6977688	0.001	-1.75	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2763400	0.2516228	0.2516228	0.001	-8.94	90.00	AVRG
Acetone	637.99873	625.00000	0.0371752	0.001	2.08	90.00	LINR
Methyl acetate	0.2819700	0.2791910	0.2791910	0.001	-0.98	90.00	AVRG
Methylene Chloride	0.4508000	0.4228525	0.4228525	0.001	-6.20	90.00	AVRG
trans-1,2-Dichloroethene	0.5029500	0.4870507	0.4870507	0.001	-3.16	90.00	AVRG
Methyl-tert-butyl ether	0.4907600	0.4463504	0.4463504	0.001	-9.05	90.00	AVRG
1,1-Dichloroethane	0.8110400	0.7935451	0.7935451	0.1	-2.16	90.00	AVRG
cis-1,2-Dichloroethene	0.4554400	0.4299712	0.4299712	0.001	-5.59	90.00	AVRG
2-butanone	0.0550400	0.0508076	0.0508076	0.001	-7.69	90.00	AVRG
Chloroform	0.7572800	0.7472286	0.7472286	0.001	-1.33	20.00	AVRG
1,1,1-Trichloroethane	0.6288600	0.6167050	0.6167050	0.001	-1.93	90.00	AVRG
Carbon Tetrachloride	0.5638200	0.5447692	0.5447692	0.001	-3.38	90.00	AVRG
Benzene	1.6358700	1.5759500	1.5759500	0.001	-3.66	90.00	AVRG
1,2-Dichloroethane	0.3291600	0.3427674	0.3427674	0.001	4.13	90.00	AVRG
Trichloroethene	0.4756900	0.4225157	0.4225157	0.001	-11.18	90.00	AVRG
1,2-Dichloropropane	0.3663600	0.3822846	0.3822846	0.001	4.35	20.00	AVRG
Bromodichloromethane	0.4541900	0.4829775	0.4829775	0.001	6.34	90.00	AVRG
cis-1,3-Dichloropropene	0.4709600	0.4434142	0.4434142	0.001	-5.85	90.00	AVRG
4-Methyl-2-pentanone	0.1818700	0.1738173	0.1738173	0.001	-4.43	90.00	AVRG
Toluene	1.3490100	1.2419227	1.2419227	0.001	-7.94	20.00	AVRG
trans-1,3-Dichloropropene	0.5366200	0.5327586	0.5327586	0.001	-0.72	90.00	AVRG
1,1,2-Trichloroethane	0.2962900	0.2710558	0.2710558	0.001	-8.52	90.00	AVRG
Tetrachloroethene	0.5575200	0.4616250	0.4616250	0.001	-17.20	90.00	AVRG
2-hexanone	0.1163300	0.1116186	0.1116186	0.001	-4.05	90.00	AVRG
Dibromochloromethane	0.3936600	0.3566333	0.3566333	0.001	-9.40	90.00	AVRG
1,2-Dibromoethane	0.2873000	0.2654666	0.2654666	0.001	-7.60	90.00	AVRG
Chlorobenzene	1.4585300	1.3049100	1.3049100	0.3	-10.53	90.00	AVRG
Ethylbenzene	0.7799200	0.6836509	0.6836509	0.001	-12.34	20.00	AVRG
m,p-Xylene	0.9446000	0.8321592	0.8321592	0.001	-11.90	90.00	AVRG
o-Xylene	0.8895900	0.8044332	0.8044332	0.001	-9.57	90.00	AVRG
Styrene	1.3593900	1.2277085	1.2277085	0.001	-9.69	90.00	AVRG
Bromoform	0.1954500	0.1875450	0.1875450	0.1	-4.04	90.00	AVRG
Isopropyl Benzene	2.3713400	2.0517388	2.0517388	0.001	-13.48	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.7104500	0.6869292	0.6869292	0.3	-3.31	90.00	AVRG

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C25004-TUN191 BFB Injection Date: 03/25/09

Instrument ID: 5975HPMS91 BFB Injection Time: 1140

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.2
75	30.0 - 60.0% of mass 95	48.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	Greater than 50.0% of mass 95	71.3
175	5.0 - 9.0% of mass 174	5.1 (7.1)1
176	95.0 - 101.0% of mass 174	70.8 (99.3)1
177	5.0 - 9.0% of mass 176	4.8 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9C25004-CAL	9C25004-CAL291	03/25/09	1236
02	VSTD0.5	9C25004-CAL	9C25004-CAL191	03/25/09	1303
03	VSTD010	9C25004-CAL	9C25004-CAL491	03/25/09	1329
04	VSTD025	9C25004-CAL	9C25004-CAL591	03/25/09	1356
05	VSTD005	9C25004-CAL	9C25004-CAL3R9	03/25/09	1423
06	VBLKHK	9032514-BLK	9032514-BLK191	03/25/09	1517
07	VHKLCS	9032514-BS1	9032514-BS191	03/25/09	1558
08	VHKLCSD	9032514-BSD	9032514-BSD191	03/25/09	1625
09	YS01-GW14-0309	0903092-02	0903092-02R91	03/25/09	1959
10	YS01-TB01-031309	0903092-04	0903092-04R91	03/25/09	2052
11	YS01-GW12-0309DL	0903092-01R	0903092-01D91	03/25/09	2119
12	YS01-GW04A-0309	0903092-05	0903092-0591	03/25/09	2146
13	YS01-GW22-0309	0903092-06	0903092-0691	03/25/09	2213
14	YS01-GW22P-0309	0903092-08	0903092-0891	03/25/09	2306
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FORM V VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5975HPMS91 Calibration Date(s): 03/25/09 03/25/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1236 1423

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.51639363	6.463	15.000
Chloromethane	AVRG		0.28866206	6.278	15.000
Vinyl Chloride	AVRG		0.21510427	4.544	30.000
Bromomethane	AVRG		0.11990001	6.429	15.000
Chloroethane	AVRG		0.09942060	5.858	15.000
Trichlorofluoromethane	AVRG		0.31945817	5.740	15.000
1,1-Dichloroethene	AVRG		0.30880241	7.986	30.000
Carbon disulfide	AVRG		1.15931112	3.973	15.000
1,1,2-trichloro-1,2,2-triflu	LINR	-0.0933805	6.67395608	0.9997276	0.9950000
Acetone	LINR	-0.6546255	48.4616942	0.9998817	0.9950000
Methyl acetate	AVRG		0.17969017	5.744	15.000
Methylene Chloride	AVRG		0.25291476	6.909	15.000
trans-1,2-Dichloroethene	AVRG		0.34305477	3.923	15.000
Methyl-tert-butyl ether	AVRG		0.41780166	5.781	15.000
1,1-Dichloroethane	AVRG		0.59742005	2.304	15.000
cis-1,2-Dichloroethene	AVRG		0.31135818	2.133	15.000
-butanone	AVRG		0.03784098	2.520	15.000
Chloroform	AVRG		0.54048274	3.736	30.000
1,1,1-Trichloroethane	AVRG		0.54456031	8.187	15.000
Carbon Tetrachloride	AVRG		0.46926736	8.828	15.000
Benzene	AVRG		1.33049463	4.758	15.000
1,2-Dichloroethane	AVRG		0.25787247	2.332	15.000
Trichloroethene	LINR	0.03136040	3.07949233	0.9985392	0.9950000
1,2-Dichloropropane	AVRG		0.29017511	3.920	30.000
Bromodichloromethane	AVRG		0.32642963	3.737	15.000
cis-1,3-Dichloropropene	AVRG		0.36817730	4.318	15.000
4-Methyl-2-pentanone	AVRG		0.14419064	3.697	15.000
Toluene	AVRG		1.28461479	9.983	30.000
trans-1,3-Dichloropropene	AVRG		0.47591574	3.932	15.000
1,1,2-Trichloroethane	AVRG		0.21322162	5.547	15.000
Tetrachloroethene	LINR	0.02115304	2.59666488	0.9978995	0.9950000
2-hexanone	AVRG		0.10273527	1.959	15.000
Dibromochloromethane	AVRG		0.24403015	4.680	15.000
1,2-Dibromoethane	AVRG		0.18977112	5.086	15.000
Chlorobenzene	AVRG		1.25921926	10.184	15.000
Ethylbenzene	AVRG		0.77881791	12.963	30.000
m,p-Xylene	AVRG		0.95544407	12.032	15.000
o-Xylene	AVRG		0.87243378	11.139	15.000
Styrene	AVRG		1.34392039	6.985	15.000
Bromoform	AVRG		0.10959230	8.058	15.000
Isopropyl Benzene	AVRG		2.41398611	14.188	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.51679800	6.821	15.000
1,3-Dichlorobenzene	LINR	0.00336942	0.52854731	0.9987682	0.9950000
1,4-Dichlorobenzene	LINR	0.00147604	0.53771092	0.9989098	0.9950000

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FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000
Chloromethane	AVRG		0.27044445	12.062	15.000
Vinyl Chloride	AVRG		0.23003478	8.624	30.000
Bromomethane	AVRG		0.15750282	9.483	15.000
Chloroethane	AVRG		0.09293606	4.050	15.000
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000
Carbon disulfide	AVRG		1.08532070	9.621	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000
Acetone	AVRG		0.04053702	10.407	15.000
Methyl acetate	AVRG		0.26289378	2.681	15.000
Methylene Chloride	AVRG		0.27597997	5.241	15.000
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000
.-butanone	AVRG		0.05249255	6.112	15.000
Chloroform	AVRG		0.50756846	6.234	30.000
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000
Benzene	AVRG		1.00716400	6.418	15.000
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000
Trichloroethene	AVRG		0.33002699	6.711	15.000
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000
Bromodichloromethane	AVRG		0.33298211	7.620	15.000
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000
Toluene	AVRG		0.93480306	5.691	30.000
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000
Tetrachloroethene	AVRG		0.31078865	10.185	15.000
2-hexanone	AVRG		0.10893166	9.712	15.000
Dibromochloromethane	AVRG		0.31932787	6.449	15.000
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000
Chlorobenzene	AVRG		0.95964278	5.742	15.000
Ethylbenzene	AVRG		0.48273954	9.366	30.000
m,p-Xylene	AVRG		0.59028287	9.153	15.000
o-Xylene	AVRG		0.56958706	7.286	15.000
Styrene	AVRG		0.93611935	7.857	15.000
Bromoform	AVRG		0.16353005	7.565	15.000
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C29001-TUN171 BFB Injection Date: 03/29/09

Instrument ID: 5972HP71 BFB Injection Time: 1121

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	42.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.6
175	5.0 - 9.0% of mass 174	5.7 (7.5)1
176	95.0 - 101.0% of mass 174	75.5 (98.6)1
177	5.0 - 9.0% of mass 176	4.9 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C29001-CCV	9C29001-CCV171	03/29/09	1140
02	VBLKDJ	9032902-BLK	9032902-BLK171	03/29/09	1209
03	VDJLCS	9032902-BS1	9032902-BS1R71	03/29/09	1335
04	YS01-EB01-031309	0903092-03	0903092-03R371	03/29/09	1412
05	YS01-GW04-0309	0903092-07	0903092-07R71	03/29/09	1509
06	YS01-GW22P-0309DL	0903092-08R	0903092-08D271	03/29/09	1537
07	YS01-GW22-0309DL	0903092-06R	0903092-06D371	03/29/09	1605
08	YS01-EB02-031609	0903092-09	0903092-09R71	03/29/09	1633
09	YS01-EB01-031609	0903092-10	0903092-10R71	03/29/09	1702
10	YS01-FB01-031609	0903092-11	0903092-11R71	03/29/09	1730
11	YS01-TB01-031609	0903092-12	0903092-12R71	03/29/09	1758
12	YS03-GW15A-0309	0903092-13	0903092-13R71	03/29/09	1826
13	YS03-GW26-0309	0903092-14	0903092-14D71	03/29/09	1855
14	YS03-GW15-0309	0903092-15	0903092-15R71	03/29/09	1923
15	YS03-GW18-0309	0903092-16	0903092-16R71	03/29/09	1951
16	YS03-EB01-031709	0903092-17	0903092-17R71	03/29/09	2020
17	YS03-EB02-031709	0903092-18	0903092-1871	03/29/09	2048
18	YS03-TB01-031709	0903092-19	0903092-1971	03/29/09	2116
19	YS03-GW23-0309	0903092-20	0903092-20R71	03/29/09	2144
20	YS01-GW04A-0309MS	9032902-MS1	9032902-MS171	03/29/09	2212
21	YS01-GW04A-0309MSD	9032902-MSD	9032902-MSD171	03/29/09	2241
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP71 Calibration Date: 03/29/09 Time: 1140

Lab File ID: 9C29001-CCV171 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.3090179	0.3090179	0.001	-16.41	90.00	AVRG	
Chloromethane	0.2704400	0.2060524	0.2060524	0.1	-23.81	90.00	AVRG	J
Vinyl Chloride	0.2300400	0.1999415	0.1999415	0.001	-13.08	20.00	AVRG	
Bromomethane	0.1575000	0.1246797	0.1246797	0.001	-20.84	90.00	AVRG	
Chloroethane	0.0929400	0.0742999	0.0742999	0.001	-20.06	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.2703015	0.2703015	0.001	-10.53	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.2542115	0.2542115	0.001	-13.64	20.00	AVRG	
Carbon disulfide	1.0853200	0.9002200	0.9002200	0.001	-17.05	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1421030	0.1421030	0.001	-5.96	90.00	AVRG	
Acetone	0.0405400	0.0339072	0.0339072	0.001	-16.36	90.00	AVRG	LR
Methyl acetate	0.2628900	0.2319009	0.2319009	0.001	-11.79	90.00	AVRG	
Methylene Chloride	0.2759800	0.2293820	0.2293820	0.001	-16.88	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.2594218	0.2594218	0.001	-15.99	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2222331	0.2222331	0.001	-17.43	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.4413508	0.4413508	0.1	-15.02	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.2541413	0.2541413	0.001	-15.69	90.00	AVRG	
2-butanone	0.0524900	0.0442668	0.0442668	0.001	-15.67	90.00	AVRG	LR
Chloroform	0.5075700	0.4554585	0.4554585	0.001	-10.27	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.3455751	0.3455751	0.001	-11.97	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.2301392	0.2301392	0.001	-11.87	90.00	AVRG	
Benzene	1.0071600	0.8678294	0.8678294	0.001	-13.83	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2416271	0.2416271	0.001	-9.22	90.00	AVRG	
Trichloroethene	0.3300200	0.2906677	0.2906677	0.001	-11.92	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2245751	0.2245751	0.001	-9.10	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3136172	0.3136172	0.001	-5.82	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3110340	0.3110340	0.001	-4.52	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1463749	0.1463749	0.001	-17.77	90.00	AVRG	
Toluene	0.9348000	0.8089995	0.8089995	0.001	-13.46	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3406199	0.3406199	0.001	-7.42	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2151573	0.2151573	0.001	-7.81	90.00	AVRG	
Tetrachloroethene	0.3107900	0.2811320	0.2811320	0.001	-9.54	90.00	AVRG	
2-hexanone	0.1089300	0.0896709	0.0896709	0.001	-17.68	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3076141	0.3076141	0.001	-3.67	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2241209	0.2241209	0.001	-4.73	90.00	AVRG	
Chlorobenzene	0.9596400	0.8897911	0.8897911	0.3	-7.28	90.00	AVRG	
Ethylbenzene	0.4827400	0.4503940	0.4503940	0.001	-6.70	20.00	AVRG	
m,p-Xylene	0.5902800	0.5631066	0.5631066	0.001	-4.60	90.00	AVRG	
o-Xylene	0.5695900	0.5394981	0.5394981	0.001	-5.28	90.00	AVRG	
Styrene	0.9361200	0.9129681	0.9129681	0.001	-2.47	90.00	AVRG	
Bromoform	0.1635300	0.1668220	0.1668220	0.1	2.01	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.4260014	1.4260014	0.001	-4.24	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.5861500	0.5610901	0.5610901	0.3	-4.28	90.00	AVRG	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C30002-TUN171 BFB Injection Date: 03/30/09

Instrument ID: 5972HP71 BFB Injection Time: 1027

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	45.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.0
175	5.0 - 9.0% of mass 174	6.1 (7.7)1
176	95.0 - 101.0% of mass 174	76.7 (97.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C30002-CCV	9C30002-CCV1R7	03/30/09	1150
02	VBLKHT	9033012-BLK	9033012-BLK171	03/30/09	1229
03	VHTLCS	9033012-BS1	9033012-BS171	03/30/09	1310
04	VHTLCSD	9033012-BSD	9033012-BSD171	03/30/09	1338
05	YS03-GW08B-0309	0903092-21	0903092-21R71	03/30/09	1406
06	YS03-GW21-0309	0903092-22	0903092-22R71	03/30/09	1435
07	YS03-GW08BP-0309	0903092-23	0903092-23R71	03/30/09	1503
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP71 Calibration Date: 03/30/09 Time: 1150

Lab File ID: 9C30002-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.3696800	0.3978304	0.3978304	0.001	7.61	90.00	AVRG
Chloromethane	0.2704400	0.1821529	0.1821529	0.1	-32.64	90.00	AVRG
Vinyl Chloride	0.2300400	0.2172002	0.2172002	0.001	-5.58	20.00	AVRG
Bromomethane	0.1575000	0.1312390	0.1312390	0.001	-16.67	90.00	AVRG
Chloroethane	0.0929400	0.0813952	0.0813952	0.001	-12.42	90.00	AVRG
Trichlorofluoromethane	0.3021100	0.2887076	0.2887076	0.001	-4.44	90.00	AVRG
1,1-Dichloroethene	0.2943500	0.2856794	0.2856794	0.001	-2.94	20.00	AVRG
Carbon disulfide	1.0853200	1.0598244	1.0598244	0.001	-2.35	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1636671	0.1636671	0.001	8.31	90.00	AVRG
Acetone	0.0405400	0.0402414	0.0402414	0.001	-0.74	90.00	AVRG
Methyl acetate	0.2628900	0.2558894	0.2558894	0.001	-2.66	90.00	AVRG
Methylene Chloride	0.2759800	0.2717010	0.2717010	0.001	-1.55	90.00	AVRG
rans-1,2-Dichloroethene	0.3088100	0.3074680	0.3074680	0.001	-0.43	90.00	AVRG
ethyl-tert-butyl ether	0.2691400	0.2771136	0.2771136	0.001	2.96	90.00	AVRG
1,1-Dichloroethane	0.5193300	0.5073585	0.5073585	0.1	-2.30	90.00	AVRG
cis-1,2-Dichloroethene	0.3014500	0.2988226	0.2988226	0.001	-0.87	90.00	AVRG
2-butanone	0.0524900	0.0550133	0.0550133	0.001	4.81	90.00	AVRG
Chloroform	0.5075700	0.5139680	0.5139680	0.001	1.26	20.00	AVRG
1,1,1-Trichloroethane	0.3925800	0.3979289	0.3979289	0.001	1.36	90.00	AVRG
Carbon Tetrachloride	0.2611400	0.2887190	0.2887190	0.001	10.56	90.00	AVRG
Benzene	1.0071600	0.9869344	0.9869344	0.001	-2.01	90.00	AVRG
1,2-Dichloroethane	0.2661800	0.2754015	0.2754015	0.001	3.46	90.00	AVRG
Trichloroethene	0.3300200	0.3324685	0.3324685	0.001	0.74	90.00	AVRG
1,2-Dichloropropane	0.2470600	0.2410720	0.2410720	0.001	-2.42	20.00	AVRG
Bromodichloromethane	0.3329800	0.3425418	0.3425418	0.001	2.87	90.00	AVRG
cis-1,3-Dichloropropene	0.3257500	0.3380420	0.3380420	0.001	3.77	90.00	AVRG
4-Methyl-2-pentanone	0.1780100	0.1740339	0.1740339	0.001	-2.23	90.00	AVRG
Toluene	0.9348000	0.8765514	0.8765514	0.001	-6.23	20.00	AVRG
trans-1,3-Dichloropropene	0.3679300	0.3602359	0.3602359	0.001	-2.09	90.00	AVRG
1,1,2-Trichloroethane	0.2333800	0.2162937	0.2162937	0.001	-7.32	90.00	AVRG
Tetrachloroethene	0.3107900	0.3188347	0.3188347	0.001	2.59	90.00	AVRG
2-hexanone	0.1089300	0.1048387	0.1048387	0.001	-3.76	90.00	AVRG
Dibromochloromethane	0.3193300	0.3218802	0.3218802	0.001	0.80	90.00	AVRG
1,2-Dibromoethane	0.2352400	0.2304110	0.2304110	0.001	-2.05	90.00	AVRG
Chlorobenzene	0.9596400	0.9469425	0.9469425	0.3	-1.32	90.00	AVRG
Ethylbenzene	0.4827400	0.4763685	0.4763685	0.001	-1.32	20.00	AVRG
m,p-Xylene	0.5902800	0.5913993	0.5913993	0.001	0.19	90.00	AVRG
o-Xylene	0.5695900	0.5629688	0.5629688	0.001	-1.16	90.00	AVRG
Styrene	0.9361200	0.9341311	0.9341311	0.001	-0.21	90.00	AVRG
Bromoform	0.1635300	0.1704151	0.1704151	0.1	4.21	90.00	AVRG
Isopropyl Benzene	1.4891700	1.4849933	1.4849933	0.001	-0.28	90.00	AVRG
,1,2,2-Tetrachloroethane	0.5861500	0.5498200	0.5498200	0.3	-6.20	90.00	AVRG

4R

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDJ

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9032902-BLK171 Lab Sample ID: 9032902-BLK1

Date Analyzed: 03/29/09 Time Analyzed: 1209

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDJLCS	9032902-BS1	9032902-BS1R	1335
02	YS01-EB01-031309	0903092-03	0903092-03R3	1412
B-03	YS01-GW04-0309	0903092-07	0903092-07R7	1509
04	YS01-GW22P-0309DL	0903092-08RE1	0903092-08D2	1537
05	YS01-GW22-0309DL	0903092-06RE1	0903092-06D3	1605
06	YS01-EB02-031609	0903092-09	0903092-09R7	1633
07	YS01-EB01-031609	0903092-10	0903092-10R7	1702
08	YS01-FB01-031609	0903092-11	0903092-11R7	1730
09	YS01-TB01-031609	0903092-12	0903092-12R7	1758
B-10	YS03-GW15A-0309	0903092-13	0903092-13R7	1826
B-11	YS03-GW26-0309	0903092-14	0903092-14D7	1855
B-12	YS03-GW15-0309	0903092-15	0903092-15R7	1923
B-13	YS03-GW18-0309	0903092-16	0903092-16R7	1951
14	YS03-EB01-031709	0903092-17	0903092-17R7	2020
15	YS03-EB02-031709	0903092-18	0903092-1871	2048
16	YS03-TB01-031709	0903092-19	0903092-1971	2116
B-17	YS03-GW23-0309	0903092-20	0903092-20R7	2144
18	YS01-GW04A-0309MS	9032902-MS1	9032902-MS17	2212
19	YS01-GW04A-0309MSD	9032902-MSD1	9032902-MSD1	2241
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COMMENTS: Chloromethane 0.23J ug/L (0.5)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHT

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9033012-BLK171 Lab Sample ID: 9033012-BLK1

Date Analyzed: 03/30/09 Time Analyzed: 1229

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

C A 2n 1,2,4

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHTLCS	9033012-BS1	9033012-BS17	1310
02	VHTLCSD	9033012-BSD1	9033012-BSD1	1338
B B B B 03	YS03-GW08B-0309	0903092-21	0903092-21R7	1406
B B 04	YS03-GW21-0309	0903092-22	0903092-22R7	1435
B B 05	YS03-GW08BP-0309	0903092-23	0903092-23R7	1503
06				
07				
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30				

COMMENTS: Chloromethane 0.19J (0.5)
acetone 1.3J (2.5)
2-hexanone 0.72J (0.5)
1,2,4-trichlorobenzene 0.16J (0.5)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDH

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9032035-BLK173_T Lab Sample ID: 9032035-BLK1

Date Analyzed: 03/20/09 Time Analyzed: 2243

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDHLCS	9032035-BS1	9032035-BS17	2312
02	VDHLCSD	9032035-BSD1	9032035-BSD1	2341
B 03	YS01-GW12-0309	0903092-01	0903092-0173	0730
04				
05				
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30				

COMMENTS: Methylene Chl 0.13J ug/L (0.5)

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5	0.0	6.189	124	30-155
Chloromethane	5	0.0	5.358	107	40-125
Vinyl Chloride	5	0.0	6.675	134	50-145
Bromomethane	5	0.0	5.892	118	30-145
Chloroethane	5	0.0	6.602	132	60-135
Trichlorofluoromethane	5	0.0	6.715	134	60-145
1,1-Dichloroethene	5	0.0	5.693	114	70-130
Carbon disulfide	5	0.0	6.346	127	35-160
1,1,2-trichloro-1,2,2-t	5	0.0	6.276	126	50-150
Acetone	25	11.63	47.69	144	30-155
Methyl acetate	5	0.0	6.312	126	50-150
Methylene Chloride	5	0.0	6.109	122	55-140
trans-1,2-Dichloroethen	5	0.0	5.8	116	60-140
Methyl-tert-butyl ether	5	0.0	6.591	132*	65-125
1,1-Dichloroethane	5	0.0	6.537	131	70-135
cis-1,2-Dichloroethene	5	0.21	6.3	122	70-125
2-butanone	25	0.0	35.73	143	30-150
Chloroform	5	0.0	6.5	130	65-135
1,1,1-Trichloroethane	5	0.0	6.383	128	65-130
Carbon Tetrachloride	5	0.0	6.558	131	65-145
Benzene	5	0.0	6.044	121*	80-120
1,2-Dichloroethane	5	0.0	6.618	132*	70-130
Trichloroethene	5	3.667	10.68	140*	70-125
1,2-Dichloropropane	5	0.0	6.404	128*	75-125
Bromodichloromethane	5	0.0	6.427	129*	75-120
cis-1,3-Dichloropropene	5	0.0	6.118	122	70-130
4-Methyl-2-pentanone	25	0.0	36.11	144*	60-135
Toluene	5	0.0	5.978	120	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5	0.0	6.658	133	55-140
1,1,2-Trichloroethane	5	0.0	5.662	113	75-152
Tetrachloroethene	5	0.0	5.724	114	45-150
2-hexanone	25	0.0	36.48	146*	55-130
Dibromochloromethane	5	0.0	5.866	117	60-135
1,2-Dibromoethane	5	0.0	5.945	119	80-120
Chlorobenzene	5	0.0	5.933	119	80-120
Ethylbenzene	5	0.0	6.139	123	75-125
Styrene	5	0.0	5.983	120	65-135
Bromoform	5	0.0	5.66	113	70-130
Isopropyl Benzene	5	0.0	6.447	129*	75-125
1,1,2,2-Tetrachloroetha	5	0.0	5.86	117	80-130
1,3-Dichlorobenzene	5	0.0	5.595	112	75-125
1,4-Dichlorobenzene	5	0.0	5.656	113	75-125
1,2-Dichlorobenzene	5	0.0	5.716	114	70-120
1,2-Dibromo-3-Chloropro	5	0.0	6.113	122	50-130
1,2,4-Trichlorobenzene	5	0.0	5.981	120	65-135
1,2-Dichloroethene (tot	10	0.2	12	118	30-155
Xylene (total)	15	0.0	18.96	126	50-150
Cyclohexane	5	0.0	6.26	125	50-150
Methylcyclohexane	5	0.0	6.299	126	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	5.725	115	8	30	30-155
Chloromethane	5	4.861	97	10	30	40-125
Vinyl Chloride	5	5.859	117	13	30	50-145
Bromomethane	5	5.538	111	6	30	30-145
Chloroethane	5	5.726	115	14	30	60-135
Trichlorofluoromethane	5	5.94	119	12	30	60-145
1,1-Dichloroethene	5	5.512	110	3	30	70-130
Carbon disulfide	5	5.917	118	7	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.754	115	9	30	50-150
Acetone	25	31.18	78	42*	30	30-155
Methyl acetate	5	5.673	113	11	30	50-150
Methylene Chloride	5	5.689	114	7	30	55-140
trans-1,2-Dichloroethen	5	5.5	110	5	30	60-140
Methyl-tert-butyl ether	5	6.162	123	7	30	65-125
1,1-Dichloroethane	5	6.025	121	8	30	70-135
cis-1,2-Dichloroethene	5	6.2	120	2	30	70-125
2-butanone	25	32.34	129	10	30	30-150
Chloroform	5	6.057	121	7	30	65-135
1,1,1-Trichloroethane	5	5.865	117	8	30	65-130
Carbon Tetrachloride	5	6.042	121	8	30	65-145
Benzene	5	5.647	113	7	30	80-120
1,2-Dichloroethane	5	6.123	122	8	30	70-130
Trichloroethene	5	13.43	195*	23	30	70-125
1,2-Dichloropropane	5	5.916	118	8	30	75-125
Bromodichloromethane	5	5.929	119	8	30	75-120
cis-1,3-Dichloropropene	5	5.649	113	8	30	70-130
4-Methyl-2-pentanone	25	32.82	131	10	30	60-135
Toluene	5	5.637	113	6	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	6.027	121	10	30	55-140
1,1,2-Trichloroethane	5	5.331	107	6	30	75-152
Tetrachloroethene	5	5.445	109	5	30	45-150
2-hexanone	25	32.72	131*	11	30	55-130
Dibromochloromethane	5	5.393	108	8	30	60-135
1,2-Dibromoethane	5	5.469	109	8	30	80-120
Chlorobenzene	5	5.636	113	5	30	80-120
Ethylbenzene	5	5.74	115	7	30	75-125
Styrene	5	5.596	112	7	30	65-135
Bromoform	5	5.288	106	7	30	70-130
Isopropyl Benzene	5	5.972	119	8	30	75-125
1,1,2,2-Tetrachloroetha	5	5.543	111	6	30	80-130
1,3-Dichlorobenzene	5	5.382	108	4	30	75-125
1,4-Dichlorobenzene	5	5.393	108	5	30	75-125
1,2-Dichlorobenzene	5	5.426	109	5	30	70-120
1,2-Dibromo-3-Chloropro	5	5.744	115	6	30	50-130
1,2,4-Trichlorobenzene	5	5.568	111	7	30	65-135
1,2-Dichloroethene (tot	10	12	118	0	30	30-155
Xylene (total)	15	17.82	119	6	30	50-150
Cyclohexane	5	5.821	116	7	30	50-150
Methylcyclohexane	5	5.815	116	8	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 49 outside limits
Spike Recovery: 11 out of 98 outside limits

COMMENTS: _____

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS01-GW22-0309
Duplicate Sample ID: YS01-GW22P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
vinyl chloride	3.6	3.6	0
1,1-dichloridethene	8.3	8.6	4
carbon disulfide *	0.37	0.39	5
trans-1,2-dichloroethene	5.6	5.3	6
1,1-dichloroethane*	0.26	0.26	0
benzene*	0.24	0.24	0
1,1,2-trichloroethane	1.7	1.6	6
tetrachloroethene*	0.21	0.21	0
cis-1,2-dichloroethene	3000	2900	3
trichloroethene	18000	17000	6
1,2-dichloroethene(total)	3000	2800	7
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: Per QAPP qualifications <25% qualifications were required.
No qualifications.

* result below the CRQL

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS01-GW22-0309
Duplicate Sample ID: YS01-GW22P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
dichlorodifluoromethane*	0.15	0.15	0
cis-1,2-dichloroethene*	0.12	0.14	15
trichloroethene	4.9	5	2
1,2-dichloroethene (total)*	0.12	0.13	8
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			#DIV/0!

COMMENTS: Per QAPP qualifications <25% qualifications were required.
No qualifications.

* result below the CRQL

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0903092
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-GW12-0309, YS01-GW14-0309, YS01-EB01-031309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309 AND YS03-GW08BP-0309

The 23 aqueous samples listed above were received intact, refrigerated between 0.1°C and 1.1°C, with proper documentation, in sealed shipping containers, on March 14, 17, 18 and 19, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903092 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. In the initial analyses of samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309, the on-column amount exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The samples were reanalyzed using a smaller aliquot of raw sample to bring the on-column amount into range. We have reported both analyses of samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309. Due to the results of a screen sample YS03-GW26-0309 was initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 91 on 3/25/09 associated with the BFB injected at 1140. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VI. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard. Manual integrations were performed on 9C25004-CAL191, 9C25004-CAL291, 9C28002-CAL171, 9C28002-CAL271, 9C28002-CAL471, 9C2003-CAL173, 9C2003-CAL273, 9C2003-CAL3R273, 9C2003-CAL573, 9C25004-CAL191, 9C25004-CAL291, 9C30002-CCV1R71, and YS01-GW22-0309 and YS01-GW22P-0309 process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS01-GW04A-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 2, 2009

This SDG contains dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/13, 3/16, 3/17, 3/18
Received Date: 3/14-3/19
Prep. Dates: no prep – dissolved; 3/31 ICP total; 3/20 Hg
Analysis Dates: 3/27 dissolved, 4/7 total ICP; 3/24 Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

  L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	nickel	1.003B ug/L	5.015 ug/L	B	BL
	zinc	5.517B ug/L	27.585 ug/L	B	BL
ICB/CCB – dissolved metals	aluminum	74.2 B ug/L	371 ug/L	B	BL
	antimony	3.1B ug/L	15.5 ug/L	B	BL
	arsenic	2.5B ug/L	12.5 ug/L	B	BL
	beryllium	1.9B ug/L	9.5 ug/L	B	BL
	cadmium	0.9B ug/L	4.5 ug/L	B	BL
	cobalt	2.5b ug/L	12.5 ug/L	B	BL
	iron	29.2B ug/L	146 ug/L	B	BL
	selenium	2.7B ug/L	13.5 ug/L	B	BL
	thallium	4.7B ug/L	23.5 ug/L	B	BL
	copper	-1.5 ug/L	≤ 10X MDL (8.0 ug/L)	L/UL	BL
YS03-FB01-031909 –dissolved	potassium	592B ug/L	2960 ug/L	B	BL
YS01-EB01-031309-dissolved	manganese	0.43B ug/L	2.15 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW14-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	B	BL
YS01-GW04A-0309	antimony	B	BL
YS01-GW04A-0309	arsenic	B	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	B	BL
YS01-GW04A-0309	iron	B	BL
YS01-GW22-0309	selenium	B	BL
YS01-GW14-0309	thallium	B	BL
all field samples	copper	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	B	BL
YS01-GW12-0309	manganese	B	BL

added flags for nickel & zinc to table in dv rep. JAC 61009

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	3.658B ug/L	18.29 ug/L	B	BL
ICB/CCB – total metals	lead	-1.7B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	beryllium	-0.5B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
YS03-EB01-031709	iron	57.1B ug/L	285.5 ug/L	B	BL
	manganese	2.2B ug/L	11 ug/L	B	BL
YS03-EB01-031809	chromium	0.77B ug/L	3.85 ug/L	B	BL
	nickel	0.75B ug/L	3.75 ug/L	B	BL
YS03-EB02-031809	chromium	0.83B ug/L	4.15 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL
YS03-FB01-031909	beryllium	1.1B ug/L	5.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
all total metals field samples	lead	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	L/UL	BL
YS03-GW18-0309	iron	B	BL
YS03-GW18-0309	manganese	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	B	BL
YS03-GW21-0309	beryllium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS01-GW04A-0309 analyzed for total metals exhibited non-compliant recoveries for Se in both the MS & MSD (using SAP QC limits of 80-120). All total metals samples results for Se were qualified as biased low L/UL. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS01-GW04A-0309 analyzed for the ICP dissolved metals exhibited compliant recoveries for all analytes. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable. No qualifications were required.

SERIAL DILUTIONS

The serial dilution analyses of samples YS01-GW04A-0309 for total metals exhibited acceptable %Ds for all analytes except potassium (14.7). All reported results for potassium in the total metals field samples were qualified as estimated J/UJ.

The serial dilution analyses of samples YS01-GW04A-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (20.3%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: YS03-GW08B-0309 Duplicate Sample ID: YS03-GW08BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	134000	132000	2%
manganese	32.8	34.9	6%
sodium	10400	10100	3%

Comments: No qualifications were required.

Sample ID: YS01-GW22-0309 Duplicate Sample ID: YS01-GW22P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	582	202	97%
calcium	138000	129000	7%
iron	1500	382	119%
magnesium	5200	4800	8%
manganese	125	98.2	24%
sodium	8320	8370	1%

Comments: Flag aluminum and iron as estimated J in field duplicate pair.

Total Metals

Sample ID: YS03-GW08B-0309 Duplicate Sample ID: YS03-GW08BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	121000	121000	0%
iron	280	306	9%
manganese	39.2	39	1%
sodium	8660	8950	3%

Comments: No qualifications were required.

Sample ID: YS01-GW22-0309 Duplicate Sample ID: YS01-GW22P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1420	3920	94%
calcium	125000	124000	1%
iron	3960	5280	29%
manganese	103	103	0%
sodium	7540	7130	6%

Comments: Flag aluminum and iron as estimated J in field duplicate pair.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS03-GW18-0309
COMPOUND: magnesium
CONCENTRATION: 590 ug/L
%Solids – na
50 ml

Raw Data result: 589.6628 ug/L

589.6628 ug/L * 0.05L/0.05L = 589.6628 ug/L

Total Metals

EPA SAMPLE ID: YS01-GW04-0309
COMPOUND: manganese
CONCENTRATION: 72.3 ug/L
%Solids – na
50 ml

Raw Data result: 72.26426 ug/L

72.26426 ug/L * 0.05L/0.05L = 72.26426 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JCleveland **Date:** 6/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903092

The indicated Sample Delivery Group (SDG) consisting of twenty (20) water samples was received into the laboratory information management system (LIMS) on March 14, 17, 18, and 19, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903092-05 ID YS01-GW04A-0309S and YS01-GW04A-0309SD were inside control limits for the requested analytes except selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903092-05 ID YS01-GW04A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903092-05 ID YS01-GW04A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forneto for Susan Bass

Susan W. Bass
Senior Chemist
April 7, 2009

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903093

The indicated Sample Delivery Group (SDG) consisting of twenty (20) dissolved water samples was received into the laboratory information management system (LIMS) on March 14, 17, 18, and 19, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903093-04 ID YS01-GW04-0309S and YS01-GW04-0309SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903093-04 ID YS01-GW04-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903093-04 ID YS01-GW04-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
March 31, 2009

SW846 - METALS

3

BLANKS

Totals metals

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	3.658	B	P ✓
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.420	U	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-207.6	B	-180.9	B	-184.0	B	181.9	B	-193.690	B	P ✓
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	-1.7	B	-2.1	B	-2.3	B	-1.7	B	1.400	U	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	224.012	B	P NQ
Thallium	4.6	B NQ	3.5	B	3.8	B NQ	3.8	B NQ	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

See ICB

See ICB

~~GW04A~~ YS01-GW04A YS01-GW12 GW14 GW22 GW04

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2 (5)	C	3 (6)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			2.4	U	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			-0.5	B	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-195.4	B See ICB	209.0	B See ICB	199.9	B See ICB			P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	-2.0	B See ICB	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U							CV
Nickel			0.7	U	0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			4.0	B NQ	3.3	U	3.9	B NQ			P
Vanadium			0.6	U	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

YS01-GW12 → GW14 → GW22 → GW04

YS01-GW22P
YS03-GW15A → GW26-0309 → GW15 → GW18

YS03-GW23 → GW08B → GW21 → GW08BP

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW04A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2029.7120		161.6319	B	2000.00	93.4		P
Antimony	75 - 125	494.4866		5.1941	B	500.00	97.9		P
Arsenic	75 - 125	35.6030		2.2000	U	40.00	89.0		P
Barium	75 - 125	2042.5040		10.0294	B	2000.00	101.6		P
Beryllium	75 - 125	49.9753		0.4200	U	50.00	100.0		P
Cadmium	75 - 125	48.8425		0.6400	U	50.00	97.7		P
Chromium	75 - 125	200.5329		4.0320	B	200.00	98.3		P
Cobalt	75 - 125	492.3300		1.6000	U	500.00	98.5		P
Copper	75 - 125	250.6859		0.9131	B	250.00	99.9		P
Iron	75 - 125	1276.1440		319.8321		1000.00	95.6		P
Lead	75 - 125	19.1137		1.4000	U	20.00	95.6		P
Manganese	75 - 125	520.3440		26.9034		500.00	98.7		P
Mercury	75 - 125	1.1900		0.1000	U	1.00	119.0		CV
Nickel	75 - 125	486.2415		2.1160	B	500.00	96.8		P
Selenium	75 - 125	7.2958		2.2000	U	10.00	73.0	N	P
Silver	75 - 125	46.5433		0.6200	U	50.00	93.1		P
Thallium	75 - 125	46.7046		3.3000	U	50.00	93.4		P
Vanadium	75 - 125	504.5857		0.5700	U	500.00	100.9		P
Zinc	75 - 125	489.5227		5.2000	U	500.00	97.9		P

JMJ

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW04A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2024.2650		161.6319	B	2000.00	93.1		P
Antimony	75 - 125	495.6350		5.1941	B	500.00	98.1		P
Arsenic	75 - 125	37.3643		2.2000	U	40.00	93.4		P
Barium	75 - 125	2062.0530		10.0294	B	2000.00	102.6		P
Beryllium	75 - 125	50.1570		0.4200	U	50.00	100.3		P
Cadmium	75 - 125	48.8818		0.6400	U	50.00	97.8		P
Chromium	75 - 125	204.1920		4.0320	B	200.00	100.1		P
Cobalt	75 - 125	493.9054		1.6000	U	500.00	98.8		P
Copper	75 - 125	252.8952		0.9131	B	250.00	100.8		P
Iron	75 - 125	1286.9230		319.8321		1000.00	96.7		P
Lead	75 - 125	18.3528		1.4000	U	20.00	91.8		P
Manganese	75 - 125	525.5657		26.9034		500.00	99.7		P
Mercury	75 - 125	1.1500		0.1000	U	1.00	115.0		CV
Nickel	75 - 125	488.0742		2.1160	B	500.00	97.2		P
Selenium	75 - 125	7.9178		2.2000	U	10.00	79.2		P
Silver	75 - 125	47.5113		0.6200	U	50.00	95.0		P
Thallium	75 - 125	45.2082		3.3000	U	50.00	90.4		P
Vanadium	75 - 125	509.3906		0.5700	U	500.00	101.9		P
Zinc	75 - 125	495.7763		5.2000	U	500.00	99.2		P

Comments:

SW846 - METALS

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW04A-0309A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Selenium		6.72		2.20	U	10.0	67.2		P

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-GW04A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	161.63	B	267.00	U	100.0		P
Antimony	5.19	B	12.00	U	100.0		P
Arsenic	2.20	U	11.00	U			P
Barium	10.03	B	10.38	B	3.5		P
Beryllium	0.42	U	2.10	U			P
Cadmium	0.64	U	3.20	U			P
Calcium	25150.64		23261.46	B	7.5		P
Chromium	4.03	B	5.22	B	29.5		P
Cobalt	1.60	U	8.00	U			P
Copper	0.91	B	6.31	B	593.4		P
Iron	319.83		389.32	B	21.7		P
Lead	1.40	U	7.00	U			P
Magnesium	425.23	B	425.34	B	0.0		P
Manganese	26.90		26.61	B	1.1		P
Mercury	0.10	U	0.50	U			CV
Nickel	2.12	B	3.35	U	100.0		P
Potassium	1073.37	B	915.73	B	14.7	E	P
Selenium	2.20	U	11.00	U			P
Silver	0.62	U	3.10	U			P
Sodium	5773.59		5237.41	B	9.3		P
Thallium	3.30	U	18.95	B	100.0		P
Vanadium	0.57	U	2.85	U			P
Zinc	5.20	U	26.00	U			P

JWJ

SW846 - METALS

3

BLANKS

Dissolved

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.5	B	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	-0.5	B	0.4	U	0.4	U	-0.677	B	P NQ
Cadmium	0.6	U	0.6	U	0.7	B	0.7	B	0.640	U	P
Calcium	-196.7	B NQ	-216.1	B	-195.2	B	-188.6	B NQ	-209.968	B	P NQ
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	1.1	B	0.9	B	1.003	B	P ✓
Potassium	9.9	U	9.9	U	9.9	U	11.7	B NQ	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.7	B	3.3	U	4.0	B NQ	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.517	B	P ✓

GW04A1

✓flag as noted in report

SW846 - METALS

3

BLANKS

Dissolved

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U	66.0	B	74.2	B	Δ Al		P
Antimony			3.1	B	2.4	U	2.4	U	/ Sb		P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	B	0.3	U	0.3	U			P
Beryllium			0.4	U	1.3	B	1.9	B	X Be		P
Cadmium			0.8	B	0.7	B	0.9	B	□ Cd		P
Calcium			-185.7	B	-191.1	B	-212.7	B			P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	B	2.5	B	V Co		P
Copper			0.8	U	0.8	U	-1.3	B	~ Cu		P
Iron			26.3	B	29.2	B	24.6	U	* Fe		P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U							CV
Nickel			0.7	U	0.7	U	0.7	U			P
Potassium			14.8	B	16.2	B	12.4	B			P
Selenium			2.4	B	2.7	B	2.2	U	O Se		P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	4.7	B	3.3	U	◊ Tl		P
Vanadium			0.6	U	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

YS01-GW04A/ * YS01-GW12 × 14 × V ◊ 22 O X 04 Δ X 22P X Δ

YS03-GW15A × YS03-GW08BP Δ X □ V 21 Δ X □ V 26 Δ X ↓ 15 Δ X V 18 X Δ 23 Δ X □ V 08B V □ X Δ

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Dissolved

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			55.2	B							P
Antimony			2.4	U							P
Arsenic			2.2	U							P
Barium			0.3	U							P
Beryllium			1.6	B							P
Cadmium			0.8	B							P
Calcium			-214.7	B							P
Chromium			0.7	U							P
Cobalt			1.9	B							P
Copper			-1.5	B							P
Iron			24.6	U							P
Lead			1.4	U							P
Magnesium			31.0	U							P
Manganese			0.4	U							P
Nickel			0.7	U							P
Potassium			10.4	B							P
Selenium			2.2	U							P
Silver			0.6	U							P
Sodium			159.5	U							P
Thallium			3.3	U							P
Vanadium			0.6	U							P
Zinc			5.2	U							P

YS03-GW088P ↓ 21 > see prev. page for flags

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-GW04A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	53.40	U	267.00	U			P
Antimony	2.77	B	21.61	B	680.1		P
Arsenic	2.20	U	11.00	U			P
Barium	9.32	B	11.02	B	18.2		P
Beryllium	0.42	U	2.10	U			P
Cadmium	0.64	U	3.20	U			P
Calcium	27243.56		26190.93		3.9		P
Chromium	0.70	U	3.50	U			P
Cobalt	1.60	U	8.00	U			P
Copper	1.16	B	4.20	U	100.0		P
Iron	31.09	B	144.09	B	363.5		P
Lead	1.40	U	7.00	U			P
Magnesium	470.23	B	433.72	B	7.8		P
Manganese	14.38		14.59	B	1.5		P
Mercury	0.10	U	0.50	U			CV
Nickel	1.00	B	3.35	U	100.0		P
Potassium	1393.19	B	1110.89	B	20.3	E	P
Selenium	2.20	U	11.00	U			P
Silver	0.62	U	3.10	U			P
Sodium	6246.53		5923.57	B	5.2		P
Thallium	3.30	U	16.50	U			P
Vanadium	0.57	U	2.85	U			P
Zinc	11.06	B	67.37	B	509.1		P

JW

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 14, 2009
SDG # 0903113 & 0903114, CompuChem
NWS Yorktown

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903113 and 0903114. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles and 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS03-EB01-031809	0903113-02	water	X	X	X
YS03-EB01-031909	0903113-11	water	X	X	X
YS03-EB01-032009	0903113-18	water	X	X	X
YS03-EB02-031809	0903113-03	water	X	X	X
YS03-EB02-031909	0903113-10	water	X	X	X
YS03-EB02-032009	0903113-19	water	X	X	X
YS03-FB01-031909	0903113-09	water	X	X	X
YS03-GW06-0309	0903113-05	water	X	X	X
YS03-GW08A-0309	0903113-01	water	X	X	X
YS03-GW19-0309	0903113-06	water	X	X	X
YS03-GW20-0309	0903113-16	water	X	X	X
YS03-GW20A-0309	0903113-15	water	X	X	X
YS03-GW22-0309	0903113-08	water	X	X	X
YS03-GW25-0309	0903113-13	water	X	X	X
YS03-GW25P-0309	0903113-17	water	X	X	X
YS03-GW27-0309	0903113-14	water	X	X	X
YS03-GW28-0309	0903113-07	water	X	X	X
YS03-TB01-031809	0903113-04	water	X		
YS03-TB01-031909	0903113-12	water	X		
YS03-TB01-031909	0903113-20	water	X		
YS03-GW08A-0309 MS	0903113-01 MS	water	X	X	X
YS03-GW08A-0309 MSD	0903113-01 MSD	water	X	X	X

The following quality control samples were provided with this SDG: sample YS03-TB01-031809, YS03-TB01-031909 and YS03-TB01-031909-trip blanks; samples YS03-

EB01-031809, YS03-EB01-031909, YS03-EB01-032009, YS03-EB01-032009, YS03-EB02-031809, YS03-EB02-031909, and YS03-EB02-032009-equipment blanks; sample YS03-FB01-031909-field blank; and sample YS03-GW25P-0309-field duplicate of sample YS03-GW25-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Sample Condition
- GC/MS Tuning *
- GC Performance *
- Initial/Continuing Calibrations
- CRI Standards *
- Interference Check Sample *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions
- Field Duplicates
- Identification/Quantitation *
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required some non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

One sample contained headspace that resulted in qualifying the data as estimated.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total & Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The MS/MSD pair analyzed for the dissolved metals exhibited one analyte with low recoveries. This analyte was qualified as biased low L/UL in the dissolved metals field samples.

The serial dilution analysis exhibited non-compliant %Ds in the total and dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the total and dissolved metals field samples.

One of the submitted field duplicate pairs exhibited non-compliant RPDs for one analyte in the dissolved analysis. This analyte was flagged as estimated J in the field duplicate pair only.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/18-20/09 and samples were received at the laboratory 03/19-21/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Sample Condition

VOA

All sample vials for YS03-GW28-0309 contained headspace; therefore results were qualified as biased low (L/UL).

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/28/09	acetone	0.0405	all samples	L/R	ICL
CC 03/30/09	acetone	0.0402/0.0363	all samples	L/R	CCL
CC 03/31/09	chloromethane	-32.64/-28.12		J	CCL
CC 03/31/09	2-butanone	0.0435	YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009, YS03-TB01-032009	L/R	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.19J ug/L	0.50 ug/L	0.95
	acetone	1.3J	2.5	13
VBLKHV	chloromethane	0.16J	0.5	0.8
YS03-TB01-031909	chloromethane	0.19J	0.5	0.95
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS03-TB01-032009	chloromethane	0.19J	0.5	0.95
	acetone	4.8	2.5	48
YS03-EB01-031909	chloromethane	0.24J	0.5	1.2
	acetone	9.4	2.5	94
	methylene chloride	1.2	0.5	12
	2-butanone	1.4J	2.5	14
	toluene	0.24J	0.5	1.2
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	toluene	0.34J	0.5	1.7
YS03-EB01-032009	chloromethane	0.22J	0.5	1.1
	acetone	33	2.5	330
	methylene chloride	1.9	0.5	19
	2-butanone	5.5	2.5	55
	toluene	0.43J	0.5	2.2
YS03-EB02-031909	chloromethane	0.17J	0.5	0.85
	acetone	15	2.5	150
	methylene chloride	1.4	0.5	14
	2-butanone	2.8	2.5	28
	toluene	0.23J	0.5	1.2
YS03-EB02-032009	chloromethane	0.19J	0.5	0.95
	acetone	34	2.5	340
	methylene chloride	1.9	0.5	19
	2-butanone	5.6	2.5	56
	toluene	0.42J	0.5	2.1
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309	acetone	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	B	BL
YS03-GW20-0309	2-butanone	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	beryllium	0.771B ug/L	3.855 ug/L	B	BL
	chromium	0.865B ug/L	4.325 ug/L	B	BL
	copper	-1.629B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	lead	-1.867B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	nickel	0.885B ug/L	4.425 ug/L	B	BL
ICB/CCB	antimony	2.4B ug/L	12 ug/L	B	BL
	vanadium	0.6B ug/L	3.0 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	beryllium	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	B	BL
all total metals field samples	copper	L/UL	BL
all total metals field samples	lead	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	B	BL
all total metals field samples	antimony	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	potassium	575.247B ug/L	2876 ug/L	B	BL
CCB – dissolved metals	aluminum	57.4B ug/L	287 ug/L	B	BL
	beryllium	0.6B ug/L	3.0 ug/L	B	BL
	chromium	1.8B ug/L	9 ug/L	B	BL
	cobalt	0.7B ug/L	3.5 ug/L	B	BL
	iron	31.7B ug/L	158.5 ug/L	B	BL
	nickel	2.2B ug/L	11 ug/L	B	BL
	vanadium	1.0B ug/L	5 ug/L	B	BL
	zinc	1.9B ug/L	9.5 ug/L	B	BL
YS03-EB01-031809	silver	0.93B ug/L	4.65 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	potassium	B	BL
YS06-GW19-0309, YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	aluminum	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	beryllium	B	BL
YS06-GW25-0309	chromium	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	cobalt	B	BL
YS06-GW06-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309	iron	B	BL
YS06-GW06-0309, YS06-GW20-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	nickel	B	BL
YS06-GW06-0309, YS06-GW22-0309, YS06-GW27-0309, YS06-GW28-0309	vanadium	B	BL
YS06-GW08A-0309, YS06-GW06-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	zinc	B	BL
YS06-GW08A-0309	silver	B	BL

Total and Dissolved Metals

The matrix spike analysis of sample YS03-GW08A-0309 for dissolved metals exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS03-GW08A-0309	selenium	all dissolved metals field samples	63.7/70.7	L/UL	MSL

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS03-GW08A-0309	potassium	all field samples	11.8 123.1	J/UJ	SD

Field Duplicates

Total & Dissolved Metals

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for one analyte in the dissolved metals analysis. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS03-GW25-0309, YS03-GW25P-0309	selenium	YS03-GW25-0309, YS03-GW25P-0309 (dissolved)	30	J	FD

*Note – this analyte was previously flagged due to low matrix spike recoveries

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) were met. No validation action was required.

Instrument P4 – Total & Dissolved

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS03-GW28-0309	all results	+/-	L/UL	OT
all samples	acetone	+/-	L/R	ICL
all samples	acetone*	+/-	L/R	CCL
all samples	chloromethane	+	J	CCL
YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009, YS03-TB01-032009	2-butanone	+/-	L/R	CCL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	+	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309	acetone	+	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	+	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	+	B	BL
YS03-GW20-0309	2-butanone	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	beryllium	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	+ up to action level	B	BL
all total metals field samples	copper	+/- up to action level	L/UL	BL
all total metals field samples	lead	+/- up to action level	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	+ up to action level	B	BL
all total metals field samples	antimony	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	+ up to action level	B	BL
all total metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all dissolved metals field samples	potassium	+ up to action level	B	BL
YS06-GW19-0309, YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	aluminum	+ up to action level	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	beryllium	+ up to action level	B	BL
YS06-GW25-0309	chromium	+ up to action level	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	cobalt	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309	iron	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW20-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	nickel	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW22-0309, YS06-GW27-0309, YS06-GW28-0309	vanadium	+ up to action level	B	BL
YS06-GW08A-0309, YS06-GW06-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	zinc	+ up to action level	B	BL
YS06-GW08A-0309	silver	+ up to action level	B	BL
all dissolved metals field samples	selenium	+/-	L/UL	MSL
all dissolved metals field samples	potassium *	+/-	J/UJ	SD
YS03-GW25-0309, YS03-GW25P-0309	selenium*	+	J	FD
all samples	all analytes	+B	J	

*selenium was flagged due to matrix spike recoveries and potassium was flagged for blank contamination in field samples

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.2	~~J~~ JCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	6.8	~~B~~ L JCL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	3.2	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	2	J
67-66-3	Chloroform	0.10	0.5	0.23	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.11	J
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.34	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

UJ 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.24	~~J~~ BJ	CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	9.4		LICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	1.2		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	1.4	~~J~~ L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.24	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	0.61	J	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

VW 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	0.15	JB
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	0.19	J

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Method Blank: 9033102-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.22	~~U~~ J	CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	33	L	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	1.9		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	5.5	L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.43	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

06040

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	7.4	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	3.1	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	1.9	J
67-66-3	Chloroform	0.10	0.5	0.22	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.34	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	15	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	1.4	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	2.8	
67-66-3	Chloroform	0.10	0.5	0.1	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.23	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D60409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.19	~~J~~	J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	34	k	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	1.9		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	5.6	L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.42	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

LM 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WC 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-FB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.14	~~J~~ JCCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	4.2	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	8.1	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	0.59	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.74	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-FB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.11	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW06-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.15	J
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.49	J
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW06-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.15	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.6	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.12	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

CW 060404

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW19-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 16.7

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	1.7	8.3	ND	U
74-87-3	Chloromethane	1.7	8.3	2.6	~~JB~~ B BL
75-01-4	Vinyl Chloride	1.7	8.3	58	
74-83-9	Bromomethane	7.8	8.3	ND	U
75-00-3	Chloroethane	2.2	8.3	ND	U
75-69-4	Trichlorofluoromethane	1.7	8.3	ND	U
75-35-4	1,1-Dichloroethene	1.7	8.3	3.4	J
75-15-0	Carbon disulfide	1.7	8.3	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	2.5	8.3	ND	U
67-64-1	Acetone	19	42	ND	U
79-20-9	Methyl acetate	1.7	8.3	ND	U
75-09-2	Methylene Chloride	1.7	8.3	1.9	~~J~~ B BL
156-60-5	trans-1,2-Dichloroethene	1.7	8.3	2.2	J
1634-04-4	Methyl-tert-butyl ether	1.7	8.3	ND	U
75-34-3	1,1-Dichloroethane	1.7	8.3	ND	U
156-59-2	cis-1,2-Dichloroethene	1.7	8.3	330	
78-93-3	2-butanone	8.3	42	ND	U
67-66-3	Chloroform	1.7	8.3	ND	U
71-55-6	1,1,1-Trichloroethane	1.7	8.3	ND	U
56-23-5	Carbon Tetrachloride	1.7	8.3	ND	U
71-43-2	Benzene	1.7	8.3	ND	U
107-06-2	1,2-Dichloroethane	1.7	8.3	ND	U
79-01-6	Trichloroethene	1.7	8.3	190	
78-87-5	1,2-Dichloropropane	1.7	8.3	ND	U
75-27-4	Bromodichloromethane	1.7	8.3	ND	U
10061-01-5	cis-1,3-Dichloropropene	1.7	8.3	ND	U
108-10-1	4-Methyl-2-pentanone	8.3	42	ND	U
108-88-3	Toluene	1.7	8.3	ND	U
10061-02-6	trans-1,3-Dichloropropene	1.7	8.3	ND	U
79-00-5	1,1,2-Trichloroethane	1.7	8.3	ND	U
127-18-4	Tetrachloroethene	1.8	8.3	ND	U
591-78-6	2-hexanone	8.3	42	ND	U
124-48-1	Dibromochloromethane	1.7	8.3	ND	U

ND = Not Detected
Q = Qualifier

D60409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW19-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 16.7

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	1.7	8.3	ND	U
108-90-7	Chlorobenzene	1.7	8.3	ND	U
100-41-4	Ethylbenzene	1.7	8.3	ND	U
108-38-3	m,p-Xylene	3.3	17	ND	U
95-47-6	o-Xylene	1.7	8.3	ND	U
100-42-5	Styrene	1.7	8.3	ND	U
75-25-2	Bromoform	2.5	8.3	ND	U
98-82-8	Isopropyl Benzene	1.7	8.3	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	8.3	ND	U
541-73-1	1,3-Dichlorobenzene	1.7	8.3	ND	U
106-46-7	1,4-Dichlorobenzene	1.7	8.3	ND	U
95-50-1	1,2-Dichlorobenzene	1.7	8.3	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	3.0	8.3	ND	U
120-82-1	1,2,4-Trichlorobenzene	2.2	8.3	ND	U
540-59-0	1,2-Dichloroethene (total)	1.7	8.3	330	
1330-20-7	Xylene (total)	1.7	8.3	ND	U
110-82-7	Cyclohexane	1.7	8.3	ND	U
108-87-2	Methylcyclohexane	1.7	8.3	ND	U

ND = Not Detected
Q = Qualifier

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	10	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	0.71	~~J~~ B BL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.2	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D60401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

VW 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033102-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.4	~~J~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.13	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

LW 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 5.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	2.5	ND	U
74-87-3	Chloromethane	0.50	2.5	0.76	~~JB~~ BL
75-01-4	Vinyl Chloride	0.50	2.5	9.8	
74-83-9	Bromomethane	2.4	2.5	ND	U
75-00-3	Chloroethane	0.65	2.5	ND	U
75-69-4	Trichlorofluoromethane	0.50	2.5	ND	U
75-35-4	1,1-Dichloroethene	0.50	2.5	0.68	J
75-15-0	Carbon disulfide	0.50	2.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.75	2.5	ND	U
67-64-1	Acetone	5.8	13	8.6	~~JB~~ BL
79-20-9	Methyl acetate	0.50	2.5	ND	U
75-09-2	Methylene Chloride	0.50	2.5	0.88	~~J~~ BL
156-60-5	trans-1,2-Dichloroethene	0.50	2.5	0.73	J
1634-04-4	Methyl-tert-butyl ether	0.50	2.5	ND	U
75-34-3	1,1-Dichloroethane	0.50	2.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.50	2.5	110	
78-93-3	2-butanone	2.5	13	ND	U
67-66-3	Chloroform	0.50	2.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.50	2.5	ND	U
56-23-5	Carbon Tetrachloride	0.50	2.5	ND	U
71-43-2	Benzene	0.50	2.5	ND	U
107-06-2	1,2-Dichloroethane	0.50	2.5	ND	U
79-01-6	Trichloroethene	0.50	2.5	63	
78-87-5	1,2-Dichloropropane	0.50	2.5	ND	U
75-27-4	Bromodichloromethane	0.50	2.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.50	2.5	ND	U
108-10-1	4-Methyl-2-pentanone	2.5	13	ND	U
108-88-3	Toluene	0.50	2.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.50	2.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.50	2.5	ND	U
127-18-4	Tetrachloroethene	0.55	2.5	ND	U
591-78-6	2-hexanone	2.5	13	ND	U
124-48-1	Dibromochloromethane	0.50	2.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

04/04/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 5.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	2.5	ND	U
108-90-7	Chlorobenzene	0.50	2.5	ND	U
100-41-4	Ethylbenzene	0.50	2.5	ND	U
108-38-3	m,p-Xylene	1.0	5	ND	U
95-47-6	o-Xylene	0.50	2.5	ND	U
100-42-5	Styrene	0.50	2.5	ND	U
75-25-2	Bromoform	0.75	2.5	ND	U
98-82-8	Isopropyl Benzene	0.50	2.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.60	2.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.50	2.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.50	2.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.50	2.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.90	2.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.65	2.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.50	2.5	100	
1330-20-7	Xylene (total)	0.50	2.5	ND	U
110-82-7	Cyclohexane	0.50	2.5	ND	U
108-87-2	Methylcyclohexane	0.50	2.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

LW 060401

039

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.5

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.25	1.3	ND	U
74-87-3	Chloromethane	0.25	1.3	0.49	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.25	1.3	4.3	
74-83-9	Bromomethane	1.2	1.3	ND	U
75-00-3	Chloroethane	0.33	1.3	ND	U
75-69-4	Trichlorofluoromethane	0.25	1.3	ND	U
75-35-4	1,1-Dichloroethene	0.25	1.3	0.47	J
75-15-0	Carbon disulfide	0.25	1.3	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.38	1.3	ND	U
67-64-1	Acetone	2.9	6.3	4.7	~~J~~ B BL
79-20-9	Methyl acetate	0.25	1.3	ND	U
75-09-2	Methylene Chloride	0.25	1.3	0.47	~~J~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.25	1.3	ND	U
1634-04-4	Methyl-tert-butyl ether	0.25	1.3	ND	U
75-34-3	1,1-Dichloroethane	0.25	1.3	ND	U
156-59-2	cis-1,2-Dichloroethene	0.25	1.3	52	
78-93-3	2-butanone	1.3	6.3	ND	~~U~~ R CCL
67-66-3	Chloroform	0.25	1.3	ND	U
71-55-6	1,1,1-Trichloroethane	0.25	1.3	ND	U
56-23-5	Carbon Tetrachloride	0.25	1.3	ND	U
71-43-2	Benzene	0.25	1.3	ND	U
107-06-2	1,2-Dichloroethane	0.25	1.3	ND	U
79-01-6	Trichloroethene	0.25	1.3	9.6	
78-87-5	1,2-Dichloropropane	0.25	1.3	ND	U
75-27-4	Bromodichloromethane	0.25	1.3	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.25	1.3	ND	U
108-10-1	4-Methyl-2-pentanone	1.3	6.3	ND	U
108-88-3	Toluene	0.25	1.3	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.3	ND	U
79-00-5	1,1,2-Trichloroethane	0.25	1.3	ND	U
127-18-4	Tetrachloroethene	0.28	1.3	ND	U
591-78-6	2-hexanone	1.3	6.3	ND	U
124-48-1	Dibromochloromethane	0.25	1.3	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

DL 04/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.5

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.25	1.3	ND	U
108-90-7	Chlorobenzene	0.25	1.3	ND	U
100-41-4	Ethylbenzene	0.25	1.3	ND	U
108-38-3	m,p-Xylene	0.50	2.5	ND	U
95-47-6	o-Xylene	0.25	1.3	ND	U
100-42-5	Styrene	0.25	1.3	ND	U
75-25-2	Bromoform	0.38	1.3	ND	U
98-82-8	Isopropyl Benzene	0.25	1.3	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.3	ND	U
541-73-1	1,3-Dichlorobenzene	0.25	1.3	ND	U
106-46-7	1,4-Dichlorobenzene	0.25	1.3	0.55	J
95-50-1	1,2-Dichlorobenzene	0.25	1.3	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.45	1.3	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.33	1.3	ND	U
540-59-0	1,2-Dichloroethene (total)	0.25	1.3	51	
1330-20-7	Xylene (total)	0.25	1.3	ND	U
110-82-7	Cyclohexane	0.25	1.3	ND	U
108-87-2	Methylcyclohexane	0.25	1.3	ND	U

ND = Not Detected
Q = Qualifier

041

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.1

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.21	1	ND	U
74-87-3	Chloromethane	0.21	1	0.44	~~JB~~ BBL
75-01-4	Vinyl Chloride	0.21	1	4.9	
74-83-9	Bromomethane	0.98	1	ND	U
75-00-3	Chloroethane	0.27	1	ND	U
75-69-4	Trichlorofluoromethane	0.21	1	ND	U
75-35-4	1,1-Dichloroethene	0.21	1	0.43	J
75-15-0	Carbon disulfide	0.21	1	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.31	1	ND	U
67-64-1	Acetone	2.4	5.2	2.8	~~J~~ BBL
79-20-9	Methyl acetate	0.21	1	ND	U
75-09-2	Methylene Chloride	0.21	1	ND	U
156-60-5	trans-1,2-Dichloroethene	0.21	1	0.27	J
1634-04-4	Methyl-tert-butyl ether	0.21	1	ND	U
75-34-3	1,1-Dichloroethane	0.21	1	ND	U
156-59-2	cis-1,2-Dichloroethene	0.21	1	52	
78-93-3	2-butanone	1.0	5.2	ND	~~U~~ RCL
67-66-3	Chloroform	0.21	1	ND	U
71-55-6	1,1,1-Trichloroethane	0.21	1	ND	U
56-23-5	Carbon Tetrachloride	0.21	1	ND	U
71-43-2	Benzene	0.21	1	ND	U
107-06-2	1,2-Dichloroethane	0.21	1	ND	U
79-01-6	Trichloroethene	0.21	1	9.5	
78-87-5	1,2-Dichloropropane	0.21	1	ND	U
75-27-4	Bromodichloromethane	0.21	1	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.21	1	ND	U
108-10-1	4-Methyl-2-pentanone	1.0	5.2	ND	U
108-88-3	Toluene	0.21	1	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.21	1	ND	U
79-00-5	1,1,2-Trichloroethane	0.21	1	ND	U
127-18-4	Tetrachloroethene	0.23	1	ND	U
591-78-6	2-hexanone	1.0	5.2	ND	U
124-48-1	Dibromochloromethane	0.21	1	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60402

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.1

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.21	1	ND	U
108-90-7	Chlorobenzene	0.21	1	ND	U
100-41-4	Ethylbenzene	0.21	1	ND	U
108-38-3	m,p-Xylene	0.42	2.1	ND	U
95-47-6	o-Xylene	0.21	1	ND	U
100-42-5	Styrene	0.21	1	ND	U
75-25-2	Bromoform	0.31	1	ND	U
98-82-8	Isopropyl Benzene	0.21	1	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1	ND	U
541-73-1	1,3-Dichlorobenzene	0.21	1	ND	U
106-46-7	1,4-Dichlorobenzene	0.21	1	0.56	J
95-50-1	1,2-Dichlorobenzene	0.21	1	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.37	1	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.27	1	ND	U
540-59-0	1,2-Dichloroethene (total)	0.21	1	51	
1330-20-7	Xylene (total)	0.21	1	ND	U
110-82-7	Cyclohexane	0.21	1	ND	U
108-87-2	Methylcyclohexane	0.21	1	ND	U

ND = Not Detected
Q = Qualifier

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW27-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 62.5

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	6.3	31	ND	U
74-87-3	Chloromethane	6.3	31	9.3	~~JB~~ BBL
75-01-4	Vinyl Chloride	6.3	31	1100	
74-83-9	Bromomethane	29	31	ND	U
75-00-3	Chloroethane	8.1	31	ND	U
75-69-4	Trichlorofluoromethane	6.3	31	ND	U
75-35-4	1,1-Dichloroethene	6.3	31	ND	U
75-15-0	Carbon disulfide	6.3	31	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	9.4	31	ND	U
67-64-1	Acetone	72	160	ND	U
79-20-9	Methyl acetate	6.3	31	ND	U
75-09-2	Methylene Chloride	6.3	31	14	~~B~~ BBL
156-60-5	trans-1,2-Dichloroethene	6.3	31	ND	U
1634-04-4	Methyl-tert-butyl ether	6.3	31	ND	U
75-34-3	1,1-Dichloroethane	6.3	31	ND	U
156-59-2	cis-1,2-Dichloroethene	6.3	31	890	
78-93-3	2-butanone	31	160	ND	~~U~~ RCL
67-66-3	Chloroform	6.3	31	ND	U
71-55-6	1,1,1-Trichloroethane	6.3	31	ND	U
56-23-5	Carbon Tetrachloride	6.3	31	ND	U
71-43-2	Benzene	6.3	31	ND	U
107-06-2	1,2-Dichloroethane	6.3	31	ND	U
79-01-6	Trichloroethene	6.3	31	130	
78-87-5	1,2-Dichloropropane	6.3	31	ND	U
75-27-4	Bromodichloromethane	6.3	31	ND	U
10061-01-5	cis-1,3-Dichloropropene	6.3	31	ND	U
108-10-1	4-Methyl-2-pentanone	31	160	ND	U
108-88-3	Toluene	6.3	31	ND	U
10061-02-6	trans-1,3-Dichloropropene	6.3	31	ND	U
79-00-5	1,1,2-Trichloroethane	6.3	31	ND	U
127-18-4	Tetrachloroethene	6.9	31	ND	U
591-78-6	2-hexanone	31	160	ND	U
124-48-1	Dibromochloromethane	6.3	31	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6040

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW27-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 62.5

Soil Extract Volume: _____ (uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	6.3	31	ND	U
108-90-7	Chlorobenzene	6.3	31	ND	U
100-41-4	Ethylbenzene	6.3	31	ND	U
108-38-3	m,p-Xylene	13	63	ND	U
95-47-6	o-Xylene	6.3	31	ND	U
100-42-5	Styrene	6.3	31	ND	U
75-25-2	Bromoform	9.4	31	ND	U
98-82-8	Isopropyl Benzene	6.3	31	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	7.5	31	ND	U
541-73-1	1,3-Dichlorobenzene	6.3	31	ND	U
106-46-7	1,4-Dichlorobenzene	6.3	31	ND	U
95-50-1	1,2-Dichlorobenzene	6.3	31	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	11	31	ND	U
120-82-1	1,2,4-Trichlorobenzene	8.1	31	ND	U
540-59-0	1,2-Dichloroethene (total)	6.3	31	880	
1330-20-7	Xylene (total)	6.3	31	ND	U
110-82-7	Cyclohexane	6.3	31	ND	U
108-87-2	Methylcyclohexane	6.3	31	ND	U

ND = Not Detected
Q = Qualifier

060401

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW28-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 6.3

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033012-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.63	3.1	ND	U UL OT
74-87-3	Chloromethane	0.63	3.1	0.97	JB BL
75-01-4	Vinyl Chloride	0.63	3.1	5.2	L OT
74-83-9	Bromomethane	2.9	3.1	ND	U UL OT
75-00-3	Chloroethane	0.81	3.1	ND	U
75-69-4	Trichlorofluoromethane	0.63	3.1	ND	U
75-35-4	1,1-Dichloroethene	0.63	3.1	ND	U
75-15-0	Carbon disulfide	0.63	3.1	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.94	3.1	ND	U
67-64-1	Acetone	7.2	16	16	B BL
79-20-9	Methyl acetate	0.63	3.1	ND	U UL OT
75-09-2	Methylene Chloride	0.63	3.1	1.6	B BL
156-60-5	trans-1,2-Dichloroethene	0.63	3.1	1.1	J L OT
1634-04-4	Methyl-tert-butyl ether	0.63	3.1	ND	U UL OT
75-34-3	1,1-Dichloroethane	0.63	3.1	ND	U UL OT
156-59-2	cis-1,2-Dichloroethene	0.63	3.1	120	L OT
78-93-3	2-butanone	3.1	16	ND	U UL OT
67-66-3	Chloroform	0.63	3.1	ND	U
71-55-6	1,1,1-Trichloroethane	0.63	3.1	ND	U
56-23-5	Carbon Tetrachloride	0.63	3.1	ND	U
71-43-2	Benzene	0.63	3.1	ND	U
107-06-2	1,2-Dichloroethane	0.63	3.1	ND	U
79-01-6	Trichloroethene	0.63	3.1	36	L
78-87-5	1,2-Dichloropropane	0.63	3.1	ND	U UL
75-27-4	Bromodichloromethane	0.63	3.1	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.63	3.1	ND	U
108-10-1	4-Methyl-2-pentanone	3.1	16	ND	U
108-88-3	Toluene	0.63	3.1	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.63	3.1	ND	U
79-00-5	1,1,2-Trichloroethane	0.63	3.1	ND	U
127-18-4	Tetrachloroethene	0.69	3.1	ND	U
591-78-6	2-hexanone	3.1	16	ND	U
124-48-1	Dibromochloromethane	0.63	3.1	ND	U

ND = Not Detected
Q = Qualifier

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW28-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 6.3

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.63	3.1	ND	U
108-90-7	Chlorobenzene	0.63	3.1	ND	U
100-41-4	Ethylbenzene	0.63	3.1	ND	U
108-38-3	m,p-Xylene	1.3	6.3	ND	U
95-47-6	o-Xylene	0.63	3.1	ND	U
100-42-5	Styrene	0.63	3.1	ND	U
75-25-2	Bromoform	0.94	3.1	ND	U
98-82-8	Isopropyl Benzene	0.63	3.1	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.75	3.1	ND	U
541-73-1	1,3-Dichlorobenzene	0.63	3.1	ND	U
106-46-7	1,4-Dichlorobenzene	0.63	3.1	ND	U
95-50-1	1,2-Dichlorobenzene	0.63	3.1	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.1	3.1	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.81	3.1	ND	U
540-59-0	1,2-Dichloroethene (total)	0.63	3.1	120	
1330-20-7	Xylene (total)	0.63	3.1	ND	U
110-82-7	Cyclohexane	0.63	3.1	ND	U
108-87-2	Methylcyclohexane	0.63	3.1	ND	U

UL OT

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033012-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~JB~~ JCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.8	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.13	J
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WP 060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033102-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~U~~ JCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	~~U~~ R ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

VM 060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-2071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~U~~ J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	4.8	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 040409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-2071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060401

053

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MS171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	8.4	
74-87-3	Chloromethane	0.10	0.5	6.2	B
75-01-4	Vinyl Chloride	0.10	0.5	8	
74-83-9	Bromomethane	0.47	0.5	6.4	
75-00-3	Chloroethane	0.13	0.5	7.5	
75-69-4	Trichlorofluoromethane	0.10	0.5	8.4	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.9	
75-15-0	Carbon disulfide	0.10	0.5	6.4	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	6.9	
67-64-1	Acetone	1.2	2.5	38	
79-20-9	Methyl acetate	0.10	0.5	6.1	
75-09-2	Methylene Chloride	0.10	0.5	6.2	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.9	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	5.5	
75-34-3	1,1-Dichloroethane	0.10	0.5	6.5	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	5.9	
78-93-3	2-butanone	0.50	2.5	31	
67-66-3	Chloroform	0.10	0.5	6.7	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	6.3	
56-23-5	Carbon Tetrachloride	0.10	0.5	6.1	
71-43-2	Benzene	0.10	0.5	6	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.8	
79-01-6	Trichloroethene	0.10	0.5	5.2	
78-87-5	1,2-Dichloropropane	0.10	0.5	6.1	
75-27-4	Bromodichloromethane	0.10	0.5	6.4	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	6	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	31	
108-88-3	Toluene	0.10	0.5	5.4	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	5.8	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.4	
127-18-4	Tetrachloroethene	0.11	0.5	5.1	
591-78-6	2-hexanone	0.50	2.5	32	
124-48-1	Dibromochloromethane	0.10	0.5	5.7	

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MS171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.5	
108-90-7	Chlorobenzene	0.10	0.5	5.3	
100-41-4	Ethylbenzene	0.10	0.5	5.2	
108-38-3	m,p-Xylene	0.20	1	11	
95-47-6	o-Xylene	0.10	0.5	5.2	
100-42-5	Styrene	0.10	0.5	5.3	
75-25-2	Bromoform	0.15	0.5	5.5	
98-82-8	Isopropyl Benzene	0.10	0.5	5.3	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	5.4	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	5	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	4.8	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	5	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	5.8	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	5.1	B
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	16	
110-82-7	Cyclohexane	0.10	0.5	6.2	
108-87-2	Methylcyclohexane	0.10	0.5	6.2	

ND = Not Detected
Q = Qualifier

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VM 060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MSD171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	8.1	
74-87-3	Chloromethane	0.10	0.5	5.4	B
75-01-4	Vinyl Chloride	0.10	0.5	7.5	
74-83-9	Bromomethane	0.47	0.5	6.4	
75-00-3	Chloroethane	0.13	0.5	6.6	
75-69-4	Trichlorofluoromethane	0.10	0.5	7.8	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.9	
75-15-0	Carbon disulfide	0.10	0.5	6.1	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	5.9	
67-64-1	Acetone	1.2	2.5	34	
79-20-9	Methyl acetate	0.10	0.5	5.7	
75-09-2	Methylene Chloride	0.10	0.5	6	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.8	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	5.3	
75-34-3	1,1-Dichloroethane	0.10	0.5	6.2	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	5.8	
78-93-3	2-butanone	0.50	2.5	29	
67-66-3	Chloroform	0.10	0.5	6.3	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	5.7	
56-23-5	Carbon Tetrachloride	0.10	0.5	5.5	
71-43-2	Benzene	0.10	0.5	5.7	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.4	
79-01-6	Trichloroethene	0.10	0.5	5.1	
78-87-5	1,2-Dichloropropane	0.10	0.5	5.8	
75-27-4	Bromodichloromethane	0.10	0.5	6.1	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	5.6	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	29	
108-88-3	Toluene	0.10	0.5	4.9	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	5.5	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.2	
127-18-4	Tetrachloroethene	0.11	0.5	4.4	
591-78-6	2-hexanone	0.50	2.5	29	
124-48-1	Dibromochloromethane	0.10	0.5	5.3	

ND = Not Detected
Q = Qualifier

060409

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MSD171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.3	
108-90-7	Chlorobenzene	0.10	0.5	4.9	
100-41-4	Ethylbenzene	0.10	0.5	4.5	
108-38-3	m,p-Xylene	0.20	1	9	
95-47-6	o-Xylene	0.10	0.5	4.5	
100-42-5	Styrene	0.10	0.5	4.6	
75-25-2	Bromoform	0.15	0.5	5	
98-82-8	Isopropyl Benzene	0.10	0.5	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	4.9	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	4.1	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	4.2	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	4.2	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	5	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	4.3	B
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	14	
110-82-7	Cyclohexane	0.10	0.5	5	
108-87-2	Methylcyclohexane	0.10	0.5	4.9	

ND = Not Detected
Q = Qualifier

0604/09

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW06-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-05

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	134	B	J	P
7440-36-0	Antimony	9.2	B	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	26.0	B	J	P
7440-41-7	Beryllium	0.83	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	88600			P
7440-47-3	Chromium	3.6	B	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	B	UL BL	P
7439-89-6	Iron	419			P
7439-92-1	Lead	1.8	B	L BL	P
7439-95-4	Magnesium	2630	B	J	P
7439-96-5	Manganese	41.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.8	B	B BL	P
7440-09-7	Potassium	1080	B	EJ SN	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.1	B	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW08A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-01

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	119	~~B~~	J	P
7440-36-0	Antimony	10.3		B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.9	~~B~~	J	P
7440-41-7	Beryllium	1.2	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	90000			P
7440-47-3	Chromium	2.5	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	1160			P
7439-92-1	Lead	1.4	~~B~~	UL BL	P
7439-95-4	Magnesium	1390	~~B~~	J	P
7439-96-5	Manganese	77.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.86	~~B~~	B BL	P
7440-09-7	Potassium	1120	~~B~~	E J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6830			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.98	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-06

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	149	~~B~~	J	P
7440-36-0	Antimony	8.2	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	38.5	~~B~~	J	P
7440-41-7	Beryllium	1.1	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	134000			P
7440-47-3	Chromium	4.1	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	54.9			P
7439-89-6	Iron	402			P
7439-92-1	Lead	2.1	~~B~~	~~J~~	P
7439-95-4	Magnesium	4220	~~B~~	J	P
7439-96-5	Manganese	33.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.1	~~B~~	B BL	P
7440-09-7	Potassium	894	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8640			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.1	~~B~~	B BL	P
7440-66-6	Zinc	5.5	~~B~~	J	P

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Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW20-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-16

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	532			P
7440-36-0	Antimony	8.5	B	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.1	B	J	P
7440-41-7	Beryllium	0.93	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74300			P
7440-47-3	Chromium	11.7			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	B	UL BL	P
7439-89-6	Iron	2700			P
7439-92-1	Lead	2.7	B	L BL	P
7439-95-4	Magnesium	1130	B	J	P
7439-96-5	Manganese	25.6			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.4	B	J	P
7440-09-7	Potassium	951	B	BJSD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5180			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.4	B	J	P
7440-66-6	Zinc	10.4	B	J	P

JC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW20A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-15

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	190	~~B~~	~~J~~	P
7440-36-0	Antimony	8.3	~~B~~	~~B BL~~	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	13.5	~~B~~	~~J~~	P
7440-41-7	Beryllium	0.50	~~B~~	~~B BL~~	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	47500			P
7440-47-3	Chromium	3.0	~~B~~	~~B BL~~	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	~~UL BL~~	P
7439-89-6	Iron	1410			P
7439-92-1	Lead	2.0	~~B~~	~~L BL~~	P
7439-95-4	Magnesium	1280	~~B~~	~~J~~	P
7439-96-5	Manganese	80.2			P
7439-97-6	Mercury	0.28			CV
7440-02-0	Nickel	2.0	~~B~~	~~B BL~~	P
7440-09-7	Potassium	1860	~~B~~	~~B J SD~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	14700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.95	~~B~~	~~B BL~~	P
7440-66-6	Zinc	6.2	~~B~~	~~J~~	P

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Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-08

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	162	~~B~~	J	P
7440-36-0	Antimony	7.8	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	61.8	~~B~~	J	P
7440-41-7	Beryllium	1.2	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	174000			P
7440-47-3	Chromium	2.2	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	384			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	3180	~~B~~	J	P
7439-96-5	Manganese	102			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.6	~~B~~	B BL	P
7440-09-7	Potassium	1220	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.6	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-13

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	900			P
7440-36-0	Antimony	9.2	~~B~~	B BL	P
7440-38-2	Arsenic	3.6	~~B~~	J	P
7440-39-3	Barium	38.8	~~B~~	J	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	146000			P
7440-47-3	Chromium	6.1	~~B~~	J	P
7440-48-4	Cobalt	1.8	~~B~~	J	P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	2220			P
7439-92-1	Lead	2.1	~~B~~	L BL	P
7439-95-4	Magnesium	3540	~~B~~	J	P
7439-96-5	Manganese	147			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	~~B~~	B BL	P
7440-09-7	Potassium	1250	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7410			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.5	~~B~~	J	P
7440-66-6	Zinc	7.0	~~B~~	J	P

JMC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

064

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW25P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-17

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	746			P
7440-36-0	Antimony	9.0	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	38.1	~~B~~	J	P
7440-41-7	Beryllium	1.0	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	148000			P
7440-47-3	Chromium	4.9	~~B~~	J	P
7440-48-4	Cobalt	2.7	~~B~~	J	P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	1730			P
7439-92-1	Lead	1.8	~~B~~	J BL	P
7439-95-4	Magnesium	3520	~~B~~	J	P
7439-96-5	Manganese	155			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.1	~~B~~	B BL	P
7440-09-7	Potassium	1130	~~B~~	EJSD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7340			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.0	~~B~~	J	P
7440-66-6	Zinc	6.1	~~B~~	J	P

XICP JAC 6/1009

JAC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

J65

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW27-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-14

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5670			P
7440-36-0	Antimony	10.8		B BL	P
7440-38-2	Arsenic	17.2			P
7440-39-3	Barium	69.8	~~B~~	J	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	161000			P
7440-47-3	Chromium	18.2			P
7440-48-4	Cobalt	5.3			P
7440-50-8	Copper	1.9	~~B~~	L BL	P
7439-89-6	Iron	7250			P
7439-92-1	Lead	4.7		L BL	P
7439-95-4	Magnesium	6340			P
7439-96-5	Manganese	500			P
7439-97-6	Mercury	0.10	~~B~~	J	CV
7440-02-0	Nickel	15.0	~~B~~	J	P
7440-09-7	Potassium	2510	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	13600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	26.1			P
7440-66-6	Zinc	34.8			P

JLC 61009

Color Before: BROWN Clarity Before: CLEAR Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW28-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-07

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	122	~~B~~	~~J~~	P
7440-36-0	Antimony	10.4		B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	13.3	~~B~~	~~J~~	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	85400			P
7440-47-3	Chromium	1.5	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	160			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	1780	~~B~~	~~J~~	P
7439-96-5	Manganese	30.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	~~B~~	B BL	P
7440-09-7	Potassium	872	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6980			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.7	~~B~~	B BL	P
7440-66-6	Zinc	8.4	~~B~~	~~J~~	P

JLC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-02

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.77	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.77	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.75	B	J	P
7440-09-7	Potassium	9.9	U	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-11

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.71	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	L	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JEC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-18

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.65	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-03

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.85	U	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.83	U	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.33			CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-10

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.70	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	B	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.5	B	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-19

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.77	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.73	B	J	P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-09

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.1	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW06-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-04

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	4.9	~~B~~	J	P
7440-39-3	Barium	27.4	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	97600			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	63.5	~~B~~	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2920	~~B~~	J	P
7439-96-5	Manganese	28.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.2	~~B~~	B BL	P
7440-09-7	Potassium	1710	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	6.8		~~J~~ L	P MSL
7440-22-4	Silver	0.93	~~B~~	J	P
7440-23-5	Sodium	6900			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.57	~~B~~	B BL	P
7440-66-6	Zinc	4.8	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-01

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	4.7	~~B~~	J	P
7440-39-3	Barium	24.6	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	91500			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	810			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1460	~~B~~	J	P
7439-96-5	Manganese	77.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1770	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	7.7		~~N~~ L	P MSL
7440-22-4	Silver	0.67	~~B~~	B BL	P
7440-23-5	Sodium	6940			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.79	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-05

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.4	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	4.8	~~B~~	J	P	
7440-39-3	Barium	41.7	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	147000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	100		B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	4640	~~B~~	J	P	
7439-96-5	Manganese	32.8			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	1460	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	9.7		~~M~~ L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	8790			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.47	U		P	
7440-66-6	Zinc	1.0	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW20-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-14

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66.2	~~B~~	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	~~B~~	J	P
7440-39-3	Barium	19.4	~~B~~	J	P
7440-41-7	Beryllium	0.64	~~B~~	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	71700			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.85	~~B~~	B BL	P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	181			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1020	~~B~~	J	P
7439-96-5	Manganese	13.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	B BL	P
7440-09-7	Potassium	1290	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	4.1	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	4750	~~B~~	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.74	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW20A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-13

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.9	~~B~~	J	P
7440-39-3	Barium	13.5	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	49200			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	172			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1310	~~B~~	J	P
7439-96-5	Manganese	59.2			P
7439-97-6	Mercury	0.11	~~B~~	J	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2470	~~B~~	~~E~~ B BL	P
7782-49-2	Selenium	4.4	~~B~~	~~W~~ L	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	14600			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.3	~~B~~	B BL	P

MSL

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-07

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	6.5	~~B~~	J	P	
7440-39-3	Barium	65.1	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	183000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	140		B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	3520	~~B~~	J	P	
7439-96-5	Manganese	121			P	
7439-97-6	Mercury	0.13	~~B~~	J	CV	
7440-02-0	Nickel	2.4	~~B~~	B BL	P	
7440-09-7	Potassium	1820	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	8.4		~~N~~ L	P	MSL
7440-22-4	Silver	0.83	~~B~~	J	P	
7440-23-5	Sodium	11900			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	1.1	~~B~~	B BL	P	
7440-66-6	Zinc	2.0	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-11

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	114	~~B~~	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	7.9	~~B~~	J	P
7440-39-3	Barium	37.7	~~B~~	J	P
7440-41-7	Beryllium	0.74	~~B~~	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	148000			P
7440-47-3	Chromium	0.94	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~B~~	B BL	P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	49.1	~~B~~	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	3540	~~B~~	J	P
7439-96-5	Manganese	148			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	B BL	P
7440-09-7	Potassium	1440	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	8.7		~~N~~ L	P MSL
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	6900			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.6	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW25P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-15

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	78.8	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	5.2	~~B~~	J	P	
7440-39-3	Barium	37.8	~~B~~	J	P	
7440-41-7	Beryllium	0.42	~~B~~	B BL	P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	150000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	1.3	~~B~~	B BL	P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	43.0	~~B~~	B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	3550	~~B~~	J	P	
7439-96-5	Manganese	153			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.9	~~B~~	B BL	P	
7440-09-7	Potassium	1430	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	6.4		~~N~~ L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	7070			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.47	U		P	
7440-66-6	Zinc	3.7	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW27-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-12

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	113	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	5.7	~~B~~	J	P	
7440-39-3	Barium	60.4	~~B~~	J	P	
7440-41-7	Beryllium	0.50	~~B~~	B BL	P	
7440-43-9	Cadmium	0.44	~~B~~	J	P	
7440-70-2	Calcium	176000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	3.5	~~B~~	B BL	P	
7440-50-8	Copper	1.5	~~B~~	J	P	
7439-89-6	Iron	19.9	U		P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	6500			P	
7439-96-5	Manganese	482			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	4.4	~~B~~	B BL	P	
7440-09-7	Potassium	2090	~~B~~	B BL	P	
7782-49-2	Selenium	11.2		L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	15100			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.84	~~B~~	B BL	P	
7440-66-6	Zinc	33.8			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW28-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-06

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	3.2	~~B~~	J	P	
7440-39-3	Barium	13.8	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	91900			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	19.9	U		P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	1950	~~B~~	J	P	
7439-96-5	Manganese	28.2			P	
7439-97-6	Mercury	0.10	~~B~~	J	CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	1490	~~B~~	~~B~~ BBL	P	
7782-49-2	Selenium	5.8		~~B~~ L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	6770			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	1.2	~~B~~	B BL	P	
7440-66-6	Zinc	1.0	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-02

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	2.8	U		P	
7440-39-3	Barium	0.20	U		P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	58.0	~~B~~	J	P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	19.9	U		P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	18.6	U		P	
7439-96-5	Manganese	1.1	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	588	~~B~~	~~B~~ J	P	
7782-49-2	Selenium	4.1	U	~~U~~ J	P	XICorr JAC61009
7440-22-4	Silver	0.76	~~B~~	J	P	
7440-23-5	Sodium	215	U		P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.47	U		P	
7440-66-6	Zinc	1.8	~~B~~	J	P	

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS03-EB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-10

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.24	~~B~~	J	P
7440-41-7	Beryllium	0.33	~~B~~	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	162	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	1.2	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	593	~~B~~	~~B~~ J	P
7782-49-2	Selenium	4.1	U	~~W~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	3.5	~~B~~	J	P

JAC 6/8/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-16

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45.0	~~B~~	J	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.47	~~B~~	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	56.6	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	583	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~N~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.6	~~B~~	J	P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-03

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	63.9	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.56	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	604	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~N~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.3	~~B~~	J	P

6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-09

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	103	~~B~~	J	P
7440-47-3	Chromium	1.2	~~B~~	J	P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.84	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	~~B~~	J	P
7440-09-7	Potassium	610	~~B~~	~~B~~ J	P
7782-49-2	Selenium	4.1	U	~~U~~ J	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	221	~~B~~	J	P
7440-28-0	Thallium	6.9	~~B~~	J	P
7440-62-2	Vanadium	0.47	~~B~~	J	P
7440-66-6	Zinc	3.0	~~B~~	J	P

X Icorr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-17

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	46.1	~~B~~	J	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.51	~~B~~	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	57.0	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.5	~~B~~	J	P
7440-09-7	Potassium	609	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~N~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.3	~~B~~	J	P

JRC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-08

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	31.5	U		P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	592	~~U~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~U~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.74	U		P

JJC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166
2 coolers

15593

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40mL	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	MEE RSK-175 40mL	TOC 9060/Lloyd Kahn 40mL	Chloride Sulfate 300.0 Alkalinity 310.1 250mL					pH / Sample Info (Lab Use): Metals	F. Metals	TOC
0903113-01 (0903114-01)	YS03-GW08A-0309	3/18/09	1140	GW	30	15		6	6			9	3	3	6	6	3							
0903092-20 (0903093-17)	YS03-GW23-0309	3/18/09	1555	GW	10	5		2	2			3	1	1	2	2	1							
0903113-02 (0903114-02)	YS03-EB01-031809	3/18/09	1630	GW	5	3		2				3	1	1										
(DUP) 0903113-03 (0903114-03)	YS03-EB02-031809	3/18/09	1640	GW	5	3		2				3	1	1										
0903113-04	YS03-TB01-031809	3/18/09	0830	TB	3	3						3												
0903092-21 (0903093-18)	YS03-GW08B-0309	3/18/09	1030	GW	10	5		2	2			3	1	1	2	2	1					(MS)		
(MS) 0903092-22 (0903093-19)	YS03-GW08BP-0309	3/18/09	1035	GW	5	3		2				3	1	1										
0903092-23 (0903093-20)	YS03-GW21-0309	3/18/09	1210	GW	10	5		2	2			3	1	1	2	2	1							

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Lab Use Only:

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Metals were field filtered
GW08A Run QA/QC (MS/MSD)

Sample Custody

Relinquished by: PM	Date/Time: 3/18/09 1730	Received by:	Date/Time: 3/19/09 0912
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.8, 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

96

092

CTO-166

2 Coolers

15596

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CompuChem
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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste. 101
City: VA Beach State: VA Zip: 23462
Project Contact: Chelsea Bemet
Phone #: (757) 671-6245
Sampler's Name: P. Murphy, M. Ost

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Site 3
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? (Y) or N
Are high concentrations expected? (Y) or N? If yes, which ID(s)? GW22, GW19

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Requested Analysis (include method and bottle type): VOCs SW846 40 ml; Metals ILM05.3 PL; FMetals ILM05.3 PL; Chloride Sulfate 300.0 Alkalinity 310.1; MEE RSK-175; TOC 9060/Lloyd Kahn

CompuChem No. (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40 ml	Metals ILM05.3 PL	FMetals ILM05.3 PL	Chloride Sulfate 300.0 Alkalinity 310.1	MEE RSK-175	TOC 9060/Lloyd Kahn					pH / Sample Info (Lab Use): Metal	F Metal	TOC
~~0903113-05~~ 0903114-04	YS03-GW06-0309	3/19/09	1035	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2
~~0903113-09~~ 0903114-08	YS03-FB01-031909	3/19/09	1130	GW	5	3		2				3	1	1								<2	<2	
0903113-12	YS03-TB01-031909	3/19/09	1140	~~GW~~ TB	3	3						3												
~~0903113-06~~ 0903114-05	YS03-GW19-0309	3/19/09	1545	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2
~~0903113-10~~ 0903114-09	YS03-EB02-031909	3/19/09	1710	GW	5	3		2				3	1	1								<2	<2	
~~0903113-07~~ 0903114-06	YS03-GW28-0309	3/19/09	1135	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2
~~0903113-08~~ 0903114-07	YS03-GW22-0309	3/19/09	1450	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2
~~0903113-11~~ 0903114-10	YS03-EB01-031909	3/19/09	1550	GW	5	3		2				3	1	1								<2	<2	

Lab Use Only

Sample Unpacked By: Diane Byrd
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Metals were field Filtered
See high concentrations expected but
*YS03-GW28-0309 - All 3 VOC vials have pea size bubble, DB 3/20/09

Sample Custody

Relinquished by: [signature] PM 1900	Date/Time: 3/19/09 1900	Received by: Diane Byrd		Date/Time: 3/20/09 0920	
Relinquished by:	Date/Time:	Received by:		Date/Time:	
Subcontact? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.6, 0.4 °C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

393

CTO-166
2 coolers

15598

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166		GW - Ground water WW - Waste water SW - Surface water SO - Soil/Sediment TB - Trip Blank RI - Rinsate WP - Wipe O - Other
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 3		
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		
Project Contact: Rebekkha Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N		
Sampler's Name: P. Murphy M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?		

CompuChem No (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846	Metals ILM05.3	FMetals ILM05.3	Chloride Sulfate 300.0 & Alkalinity 310.1	MEE RSK-175	TOC 9060/Lloyd Kahn					pH / Sample Info (Lab Use): Metals (total)	FMetals	TOC		
0903113-13 0903114-11	YS03-GW25-0309	3/20/09	0930	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
0903113-14 0903114-15	YS03-GW25P-0309	3/20/09	0940	GW	5	3		2				3	1	1								<2	<2			
0903113-12 0903114-12	YS03-GW27-0309	3/20/09	1055	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
0903113-20	YS03-TB01-032009	3/20/09	1230	TB	3	3						3														
0903113-18 0903114-16	YS03-EB01-032009	3/20/09	1240	GW	5	3		2				3	1	1								<2	<2			
0903113-19 0903114-17	YS03-EB02-032009	3/20/09	1250	GW	5	3		2				3	1	1								<2	<2			
0903113-15 0903114-13	YS03-GW20A-0309	3/20/09	1010	GW	10	3		2	2			3	1	1	1	2	2					<2	<2	<2		
0903113-16 0903114-14	YS03-GW20-0309	3/20/09	1130	GW	10	3		2	2			3	1	1	1	2	2					<2	<2	<2		

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Metals were field filtered

Sample Custody

Relinquished by: PM	Date/Time: 3/20/09 1500	Received by: Diane Byrd	Date/Time: 3-21-09 1135
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.4°, 0.1°C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

98

0944

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/18-20/09
Received Date: 03/19-21/09
Analysis Dates: 03/30-31/09

Cooler Temps: 0.1-0.8°C

All holding time requirements were met. All sample vials for YS03-GW28-0309 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS03-TB01-031909, YS03-TB01-031809, YS03-TB01-032009- trip blanks; YS03-EB02-031909, YS03-EB01-031809, YS03-EB02-032009, YS03-EB01-031909, YS03-EB01-032009- equipment blanks; YS03-FB01-031909- field blank.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.19J ug/L	0.50 ug/L	0.95
	acetone	1.3J	2.5	13
VBLKHV	chloromethane	0.16J	0.5	0.8
YS03-TB01-031909	chloromethane	0.19J	0.5	0.95
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS03-TB01-032009	chloromethane	0.19J	0.5	0.95
	acetone	4.8	2.5	48
YS03-EB01-031909	chloromethane	0.24J	0.5	1.2
	acetone	9.4	2.5	94
	methylene chloride	1.2	0.5	12
	2-butanone	1.4J	2.5	14
	toluene	0.24J	0.5	1.2
	2-hexanone	0.61J	2.5	3.1
	1,2,4-trichlorobenzene	0.15J	0.5	0.75
	methylcyclohexane	0.19J	0.5	0.95
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	trichloroethene	0.11	0.5	0.55
	toluene	0.34J	0.5	1.7
YS03-EB01-032009	chloromethane	0.22J	0.5	1.1
	acetone	33	2.5	330
	methylene chloride	1.9	0.5	19
	2-butanone	5.5	2.5	55
	toluene	0.43J	0.5	2.2
YS03-EB02-031909	chloromethane	0.17J	0.5	0.85
	acetone	15	2.5	150
	methylene chloride	1.4	0.5	14
	2-butanone	2.8	2.5	28
	chloroform	0.1J	0.5	0.5
	toluene	0.23J	0.5	1.2
YS03-EB02-032009	chloromethane	0.19J	0.5	0.95
	acetone	34	2.5	340
	methylene chloride	1.9	0.5	19
	2-butanone	5.6	2.5	56
	toluene	0.42J	0.5	2.1
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
	ethylbenzene	0.11J	0.5	0.55

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309	acetone	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	B	BL
YS03-GW20-0309	2-butanone	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS03-GW08A-0309—the MS and MSD exhibited high recoveries for several compounds however no positive results were exhibited for these compounds therefore no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for sample YS03-GW25-0309—no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Masselink **Date:** 6/3/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
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FORM V VOA

All Samples

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000
Chloromethane	AVRG		0.27044445	12.062	15.000
Vinyl Chloride	AVRG		0.23003478	8.624	30.000
Bromomethane	AVRG		0.15750282	9.483	15.000
Chloroethane	AVRG		0.09293606	4.050	15.000
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000
Carbon disulfide	AVRG		1.08532070	9.621	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000
Acetone	AVRG		0.04053702	10.407	15.000
Methyl acetate	AVRG		0.26289378	2.681	15.000
Methylene Chloride	AVRG		0.27597997	5.241	15.000
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000
-butanone	AVRG		0.05249255	6.112	15.000
Chloroform	AVRG		0.50756846	6.234	30.000
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000
Benzene	AVRG		1.00716400	6.418	15.000
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000
Trichloroethene	AVRG		0.33002699	6.711	15.000
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000
Bromodichloromethane	AVRG		0.33298211	7.620	15.000
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000
Toluene	AVRG		0.93480306	5.691	30.000
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000
Tetrachloroethene	AVRG		0.31078865	10.185	15.000
2-hexanone	AVRG		0.10893166	9.712	15.000
Dibromochloromethane	AVRG		0.31932787	6.449	15.000
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000
Chlorobenzene	AVRG		0.95964278	5.742	15.000
Ethylbenzene	AVRG		0.48273954	9.366	30.000
m,p-Xylene	AVRG		0.59028287	9.153	15.000
o-Xylene	AVRG		0.56958706	7.286	15.000
Styrene	AVRG		0.93611935	7.857	15.000
Bromoform	AVRG		0.16353005	7.565	15.000
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000

4/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9C30002-TUN171 BFB Injection Date: 03/30/09

Instrument ID: 5972HP71 BFB Injection Time: 1027

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	45.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.0
175	5.0 - 9.0% of mass 174	6.1 (7.7)1
176	95.0 - 101.0% of mass 174	76.7 (97.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C30002-CCV	9C30002-CCV1R7	03/30/09	1150
02	VBLKHT	9033012-BLK	9033012-BLK171	03/30/09	1229
03	VHTLCS	9033012-BS1	9033012-BS171	03/30/09	1310
04	VHTLCSD	9033012-BSD	9033012-BSD171	03/30/09	1338
05	YS03-GW08A-0309	0903113-01	0903113-0171	03/30/09	1559
06	YS03-EB01-031809	0903113-02	0903113-0271	03/30/09	1627
07	YS03-EB02-031809	0903113-03	0903113-0371	03/30/09	1655
08	YS03-TB01-031809	0903113-04	0903113-0471	03/30/09	1724
09	YS03-GW06-0309	0903113-05	0903113-0571	03/30/09	1752
10	YS03-GW19-0309	0903113-06	0903113-0671	03/30/09	1820
11	YS03-GW28-0309	0903113-07	0903113-0771	03/30/09	1848
12	YS03-GW22-0309	0903113-08	0903113-0871	03/30/09	1916
13	YS03-FB01-031909	0903113-09	0903113-0971	03/30/09	1945
14	YS03-EB02-031909	0903113-10	0903113-1071	03/30/09	2013
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Instrument ID: 5972HP71 Calibration Date: 03/30/09 Time: 1150

Lab File ID: 9C30002-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.3696800	0.3978304	0.3978304	0.001	7.61	90.00	AVRG
Chloromethane	0.2704400	0.1821529	0.1821529	0.1	-32.64	90.00	AVRG
Vinyl Chloride	0.2300400	0.2172002	0.2172002	0.001	-5.58	20.00	AVRG
Bromomethane	0.1575000	0.1312390	0.1312390	0.001	-16.67	90.00	AVRG
Chloroethane	0.0929400	0.0813952	0.0813952	0.001	-12.42	90.00	AVRG
Trichlorofluoromethane	0.3021100	0.2887076	0.2887076	0.001	-4.44	90.00	AVRG
1,1-Dichloroethene	0.2943500	0.2856794	0.2856794	0.001	-2.94	20.00	AVRG
Carbon disulfide	1.0853200	1.0598244	1.0598244	0.001	-2.35	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1636671	0.1636671	0.001	8.31	90.00	AVRG
Acetone	0.0405400	0.0402414	0.0402414	0.001	-0.74	90.00	AVRG
Methyl acetate	0.2628900	0.2558894	0.2558894	0.001	-2.66	90.00	AVRG
Methylene Chloride	0.2759800	0.2717010	0.2717010	0.001	-1.55	90.00	AVRG
rans-1,2-Dichloroethene	0.3088100	0.3074680	0.3074680	0.001	-0.43	90.00	AVRG
ethyl-tert-butyl ether	0.2691400	0.2771136	0.2771136	0.001	2.96	90.00	AVRG
1,1-Dichloroethane	0.5193300	0.5073585	0.5073585	0.1	-2.30	90.00	AVRG
cis-1,2-Dichloroethene	0.3014500	0.2988226	0.2988226	0.001	-0.87	90.00	AVRG
2-butanone	0.0524900	0.0550133	0.0550133	0.001	4.81	90.00	AVRG
Chloroform	0.5075700	0.5139680	0.5139680	0.001	1.26	20.00	AVRG
1,1,1-Trichloroethane	0.3925800	0.3979289	0.3979289	0.001	1.36	90.00	AVRG
Carbon Tetrachloride	0.2611400	0.2887190	0.2887190	0.001	10.56	90.00	AVRG
Benzene	1.0071600	0.9869344	0.9869344	0.001	-2.01	90.00	AVRG
1,2-Dichloroethane	0.2661800	0.2754015	0.2754015	0.001	3.46	90.00	AVRG
Trichloroethene	0.3300200	0.3324685	0.3324685	0.001	0.74	90.00	AVRG
1,2-Dichloropropane	0.2470600	0.2410720	0.2410720	0.001	-2.42	20.00	AVRG
Bromodichloromethane	0.3329800	0.3425418	0.3425418	0.001	2.87	90.00	AVRG
cis-1,3-Dichloropropene	0.3257500	0.3380420	0.3380420	0.001	3.77	90.00	AVRG
4-Methyl-2-pentanone	0.1780100	0.1740339	0.1740339	0.001	-2.23	90.00	AVRG
Toluene	0.9348000	0.8765514	0.8765514	0.001	-6.23	20.00	AVRG
trans-1,3-Dichloropropene	0.3679300	0.3602359	0.3602359	0.001	-2.09	90.00	AVRG
1,1,2-Trichloroethane	0.2333800	0.2162937	0.2162937	0.001	-7.32	90.00	AVRG
Tetrachloroethene	0.3107900	0.3188347	0.3188347	0.001	2.59	90.00	AVRG
2-hexanone	0.1089300	0.1048387	0.1048387	0.001	-3.76	90.00	AVRG
Dibromochloromethane	0.3193300	0.3218802	0.3218802	0.001	0.80	90.00	AVRG
1,2-Dibromoethane	0.2352400	0.2304110	0.2304110	0.001	-2.05	90.00	AVRG
Chlorobenzene	0.9596400	0.9469425	0.9469425	0.3	-1.32	90.00	AVRG
Ethylbenzene	0.4827400	0.4763685	0.4763685	0.001	-1.32	20.00	AVRG
m,p-Xylene	0.5902800	0.5913993	0.5913993	0.001	0.19	90.00	AVRG
o-Xylene	0.5695900	0.5629688	0.5629688	0.001	-1.16	90.00	AVRG
Styrene	0.9361200	0.9341311	0.9341311	0.001	-0.21	90.00	AVRG
Bromoform	0.1635300	0.1704151	0.1704151	0.1	4.21	90.00	AVRG
Isopropyl Benzene	1.4891700	1.4849933	1.4849933	0.001	-0.28	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5861500	0.5498200	0.5498200	0.3	-6.20	90.00	AVRG

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9C31001-TUN171 BFB Injection Date: 03/31/09

Instrument ID: 5972HP71 BFB Injection Time: 0943

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	44.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.6
175	5.0 - 9.0% of mass 174	6.5 (7.8)1
176	95.0 - 101.0% of mass 174	79.6 (96.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C31001-CCV	9C31001-CCV1R7	03/31/09	1111
02	VBLKHV	9033102-BLK	9033102-BLK171	03/31/09	1147
03	VHVLCS	9033102-BS1	9033102-BS171	03/31/09	1223
04	VHVLCSD	9033102-BSD	9033102-BSD171	03/31/09	1251
05	YS03-EB01-031909	0903113-11	0903113-1171	03/31/09	1320
06	YS03-TB01-031909	0903113-12	0903113-1271	03/31/09	1348
07	YS03-GW25-0309	0903113-13	0903113-1371	03/31/09	1416
08	YS03-GW27-0309	0903113-14	0903113-1471	03/31/09	1445
09	YS03-GW20A-0309	0903113-15	0903113-1571	03/31/09	1513
10	YS03-GW20-0309	0903113-16	0903113-1671	03/31/09	1541
11	YS03-GW25P-0309	0903113-17	0903113-1771	03/31/09	1609
12	YS03-EB01-032009	0903113-18	0903113-1871	03/31/09	1637
13	YS03-EB02-032009	0903113-19	0903113-1971	03/31/09	1706
14	YS03-TB01-032009	0903113-20	0903113-2071	03/31/09	1734
15	YS03-GW08A-0309MS	9033102-MS1	9033102-MS171	03/31/09	1802
16	YS03-GW08A-0309MSD	9033102-MSD	9033102-MSD171	03/31/09	1830
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Instrument ID: 5972HP71 Calibration Date: 03/31/09 Time: 1111

Lab File ID: 9C31001-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4670012	0.4670012	0.001	26.32	90.00	AVRG	
Chloromethane	0.2704400	0.1943766	0.1943766	0.1	-28.12	90.00	AVRG	I
Vinyl Chloride	0.2300400	0.2473023	0.2473023	0.001	7.50	20.00	AVRG	
Bromomethane	0.1575000	0.1358013	0.1358013	0.001	-13.78	90.00	AVRG	
Chloroethane	0.0929400	0.0897082	0.0897082	0.001	-3.48	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3685704	0.3685704	0.001	22.00	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3411470	0.3411470	0.001	15.90	20.00	AVRG	
Carbon disulfide	1.0853200	1.1750394	1.1750394	0.001	8.27	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.2020064	0.2020064	0.001	33.68	90.00	AVRG	
Acetone	0.0405400	0.0363159	0.0363159	0.001	-10.42	90.00	AVRG	4R
Methyl acetate	0.2628900	0.2223396	0.2223396	0.001	-15.42	90.00	AVRG	
Methylene Chloride	0.2759800	0.2831008	0.2831008	0.001	2.58	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3477114	0.3477114	0.001	12.60	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2230815	0.2230815	0.001	-17.11	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5484070	0.5484070	0.1	5.60	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3202205	0.3202205	0.001	6.23	90.00	AVRG	4R
2-butanone	0.0524900	0.0435348	0.0435348	0.001	-17.06	90.00	AVRG	
Chloroform	0.5075700	0.5651640	0.5651640	0.001	11.35	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4624428	0.4624428	0.001	17.80	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3330174	0.3330174	0.001	27.52	90.00	AVRG	
Benzene	1.0071600	1.0800897	1.0800897	0.001	7.24	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2821877	0.2821877	0.001	6.01	90.00	AVRG	
Trichloroethene	0.3300200	0.3800479	0.3800479	0.001	15.16	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2489088	0.2489088	0.001	0.75	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3624158	0.3624158	0.001	8.84	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3381172	0.3381172	0.001	3.80	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1387438	0.1387438	0.001	-22.06	90.00	AVRG	
Toluene	0.9348000	0.9763982	0.9763982	0.001	4.45	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3391677	0.3391677	0.001	-7.82	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2100936	0.2100936	0.001	-9.98	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3837095	0.3837095	0.001	23.46	90.00	AVRG	
2-hexanone	0.1089300	0.0818447	0.0818447	0.001	-24.86	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3230499	0.3230499	0.001	1.16	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2244259	0.2244259	0.001	-4.60	90.00	AVRG	
Chlorobenzene	0.9596400	1.0352672	1.0352672	0.3	7.88	90.00	AVRG	
Ethylbenzene	0.4827400	0.5483445	0.5483445	0.001	13.59	20.00	AVRG	
m,p-Xylene	0.5902800	0.6843277	0.6843277	0.001	15.93	90.00	AVRG	
o-Xylene	0.5695900	0.6417057	0.6417057	0.001	12.66	90.00	AVRG	
Styrene	0.9361200	1.0300525	1.0300525	0.001	10.03	90.00	AVRG	
Bromoform	0.1635300	0.1653898	0.1653898	0.1	1.14	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.8279037	1.8279037	0.001	22.75	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.5861500	0.5036221	0.5036221	0.3	-14.08	90.00	AVRG	

FORM VII VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHT

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9033012-BLK171 Lab Sample ID: 9033012-BLK1

Date Analyzed: 03/30/09 Time Analyzed: 1229

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

		SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
Chl	1				
	01	VHTLCS	9033012-BS1	9033012-BS17	1310
	02	VHTLCSD	9033012-BSD1	9033012-BSD1	1338
B	B	03 YS03-GW08A-0309	0903113-01	0903113-0171	1559
	04	YS03-EB01-031809	0903113-02	0903113-0271	1627
	05	YS03-EB02-031809	0903113-03	0903113-0371	1655
	06	YS03-TB01-031809	0903113-04	0903113-0471	1724
B	B	07 YS03-GW06-0309	0903113-05	0903113-0571	1752
B		08 YS03-GW19-0309	0903113-06	0903113-0671	1820
B	B	09 YS03-GW28-0309	0903113-07	0903113-0771	1848
B	B	10 YS03-GW22-0309	0903113-08	0903113-0871	1916
	11	YS03-FB01-031909	0903113-09	0903113-0971	1945
	12	YS03-EB02-031909	0903113-10	0903113-1071	2013
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COMMENTS: Chloromethane 0.19J (0.50 ug/L
Acetone 1.3J (2.5)
2-hexanone 0.72J (2.5)
1,2,4-trichlorobenzene 0.16J (0.5)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9033102-BLK171 Lab Sample ID: 9033102-BLK1

Date Analyzed: 03/31/09 Time Analyzed: 1147

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

Chl tri

BBBB

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHVLCS	9033102-BS1	9033102-BS17	1223
02	VHVLCSD	9033102-BSD1	9033102-BSD1	1251
03	YS03-EB01-031909	0903113-11	0903113-1171	1320
04	YS03-TB01-031909	0903113-12	0903113-1271	1348
05	YS03-GW25-0309	0903113-13	0903113-1371	1416
06	YS03-GW27-0309	0903113-14	0903113-1471	1445
07	YS03-GW20A-0309	0903113-15	0903113-1571	1513
08	YS03-GW20-0309	0903113-16	0903113-1671	1541
09	YS03-GW25P-0309	0903113-17	0903113-1771	1609
10	YS03-EB01-032009	0903113-18	0903113-1871	1637
11	YS03-EB02-032009	0903113-19	0903113-1971	1706
12	YS03-TB01-032009	0903113-20	0903113-2071	1734
13	YS03-GW08A-0309MS	9033102-MS1	9033102-MS17	1802
14	YS03-GW08A-0309MSD	9033102-MSD1	9033102-MSD1	1830
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS: Chloromethane 0.16J ug/L (0.5)
1,2,4-trichloromethane 0.15J

FORM IV VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS03-GW25-0309
Duplicate Sample ID: YS03-GW25P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
vinyl chloride	4.3	4.9	13
cis-1,2-dichloroethene	52	52	0
trichloroethene	9.6	9.5	1
1,2-dichloroethene (total)	51	51	0
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

* one or both values below CRQL

COMMENTS: No qualifications required.

Initial Calibration Date: 3/28/2009

RRF and %RSD Calculations:

Compound Name: chloromethane
Lab Value: 0.325

Area of Compound	830175
Area of Internal STD	510420
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.325

Compound Name: 4-methyl-2-pentanone
Lab Value: 8.34

RRF of STD 1	0.1549
RRF of STD 2	0.1775
RRF of STD 3	0.1925
RRF of STD 4	0.1895
RRF of STD 5	0.1757
Calculated % RSD	8.34

Continuing Calibration File ID: 3/31/2009

RRF and %D Calculations:

Compound Name: carbon disulfide
Lab Value: 1.175

Area of Compound	679486
Area of Internal STD	578264
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.175

Compound Name: benzene
Lab Value: 7.2

Average RRF	1.007
Calibration Check RRF	1.080
Calculated % D	-7.2

SAMPLE CALCULATION

Sample ID: YS03-EB01-031809
Standard ID: 4/1/2009
Compound: chloromethane
Concnetration: 0.2 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	4601		
Area of Internal STD	427854		
Conc. of Internal (ng)	125	250	
RRF of Compound	0.27044		
Dilution Factor	1	1	
Weight of Sample	NA		
Volume of Sample	25	NA	
% Moisture	NA	0.83	
Aliquot of sample	NA	NA	
Concentration	0.20	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	10.119	4.493	0.444
Standard	10.124	4.478	0.442

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0903113
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-GW08A-0309, YS03-EB01-031809, YS03-EB02-031809, YS03-TB01-031809, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-FB01-031909, YS03-EB02-031909, YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009 AND YS03-TB01-032009

The 20 aqueous samples listed above were received intact, refrigerated between 0.1°C and 0.8°C, with proper documentation, in sealed shipping containers, on March 19, 20 and 21, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903113 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, samples YS03-GW25P-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW19-0309, YS03-GW28-0309 and YS03-GW22-0309, were initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9C28002-CAL171, 9C28002-CAL271, 9C28002-CAL471 and 9C30002-CCV1R71, process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS03-GW08A-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 3, 2009

This SDG contains dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/18-3/20
Received Date: 3/19-3/21
Prep. Dates: no prep – dissolved; 4/1 ICP total; 4/1 Hg total, 3/30 Hg dissolved
Analysis Dates: 3/31 dissolved ICP, 4/9 total ICP; 4/3 Hg total, 3/31 Hg dissolved

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	beryllium	0.771B ug/L	3.855 ug/L	B	BL
	chromium	0.865B ug/L	4.325 ug/L	B	BL
	copper	-1.629B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	lead	-1.867B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	nickel	0.885B ug/L	4.425 ug/L	B	BL
ICB/CCB	antimony	2.4B ug/L	12 ug/L	B	BL
	vanadium	0.6B ug/L	3.0 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	beryllium	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	B	BL
all total metals field samples	copper	L/UL	BL
all total metals field samples	lead	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	B	BL
all total metals field samples	antimony	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	potassium	575.247B ug/L	2876 ug/L	B	BL
CCB – dissolved metals	aluminum	57.4B ug/L	287 ug/L	B	BL
	beryllium	0.6B ug/L	3.0 ug/L	B	BL
	chromium	1.8B ug/L	9 ug/L	B	BL
	cobalt	0.7B ug/L	3.5 ug/L	B	BL
	iron	31.7B ug/L	158.5 ug/L	B	BL
	nickel	2.2B ug/L	11 ug/L	B	BL
	vanadium	1.0B ug/L	5 ug/L	B	BL
	zinc	1.9B ug/L	9.5 ug/L	B	BL
YS03-EB01-031809	silver	0.93B ug/L	4.65 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	potassium	B	BL
YS06-GW19-0309, YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	aluminum	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	beryllium	B	BL
YS06-GW25-0309	chromium	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	cobalt	B	BL
YS06-GW06-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309	iron	B	BL
YS06-GW06-0309, YS06-GW20-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	nickel	B	BL
YS06-GW06-0309, YS06-GW22-0309, YS06-GW27-0309, YS06-GW28-0309	vanadium	B	BL
YS06-GW08A-0309, YS06-GW06-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	zinc	B	BL
YS06-GW08A-0309	silver	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS06-GW08A-0309 analyzed for total metals exhibited compliant recovery for all analytes. No qualifications were required. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS06-GW08A-0309 analyzed for the ICP dissolved metals exhibited non-compliant recoveries for selenium (63.7/70.7). Samples are flagged L/UL for Se. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses of samples YS06-GW08A-0309 for total metals exhibited acceptable %Ds for all analytes except potassium (11.8%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

The serial dilution analyses of samples YS06-GW08A-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (123.1%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Total Metals

Sample ID: YS06-GW25-0309 Duplicate Sample ID: YS06-GW25P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	900	746	19%
calcium	146000	148000	1%
iron	2220	1730	25%
manganese	147	155	5%
sodium	7410	7340	1%

Comments: No qualifications were required.

Dissolved Metals

Sample ID: YS06-GW25-0309 Duplicate Sample ID: YS06-GW25P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	148000	150000	1%
manganese	148	153	3%
selenium	8.7	6.4	30%
sodium	6900	7070	2%

Comments: J selenium in both samples. (already flagged for low spike recoveries)

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS06-GW08A-0309
COMPOUND: iron
CONCENTRATION: 810 ug/L
%Solids – na
50 ml

Raw Data result: 810.1338 ug/L

810.1338 ug/L * 0.05L/0.05L = 810.1338 ug/L

Total Metals

EPA SAMPLE ID: YS06-GW6-0309
COMPOUND: manganese
CONCENTRATION: 41.7 ug/L
%Solids – na
50 ml

Raw Data result: 41.73695 ug/L

41.73695 ug/L * 0.05L/0.05L = 41.73695 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JC Cleveland **Date:** 6/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903113

The indicated Sample Delivery Group (SDG) consisting of seventeen (17) water samples was received into the laboratory information management system (LIMS) on March 19, 20, and 21, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 0.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903113-01 ID YS03-GW08A-0309S and YS03-GW08A-0309SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903113-01 ID YS03-GW08A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903113-01 ID YS03-GW08A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

for Teresa Arnett Jennings

Susan W. Bass
Senior Chemist
April 10, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	B	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	1.3	B	1.0	B	0.771	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-219.7	B	-179.8	B	-201.5	B	-193.5	B	-214.654	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.865	B	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	-0.9	B	0.8	U	-1.4	B	-1.6	B	-1.629	B	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	-1.4	B	1.4	U	-1.867	B	P
Magnesium	31.0	U	33.8	B	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.885	B	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

none associated

YSO3-GW08A

Flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2 (5)	C	3 (6)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.6	B	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.9	B	1.0	B	0.5	B	See PB		P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-186.6	B	-209.4	B	-219.1	B	See PB		P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			-1.4	B	-1.4	B	0.8	U	See PB		P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	-1.6	B	-1.8	B	See PB		P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U	0.100	U	0.100	U			CV
Nickel			1.1	B	See PB 0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			5.2	B	NQ 3.3	B	NQ 3.3	U			P
Vanadium			0.6	B	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

See ICB

YS03-GW08A

GW06
GW19
GW28
GW22

GW25
GW27
GW20A
GW20
GW25P

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2016.7690		119.3217	B	2000.00	94.9		P
Antimony	75 - 125	493.9859		10.2855		500.00	96.7		P
Arsenic	75 - 125	35.1571		2.2000	U	40.00	87.9		P
Barium	75 - 125	1912.7230		22.9171	B	2000.00	94.5		P
Beryllium	75 - 125	50.4470		1.1525	B	50.00	98.6		P
Cadmium	75 - 125	48.9634		0.6400	U	50.00	97.9		P
Chromium	75 - 125	195.6102		2.4715	B	200.00	96.6		P
Cobalt	75 - 125	487.2882		1.6000	U	500.00	97.5		P
Copper	75 - 125	239.9525		0.8400	U	250.00	96.0		P
Iron	75 - 125	2103.7950		1159.8559		1000.00	94.4		P
Lead	75 - 125	20.2924		1.4000	U	20.00	101.5		P
Manganese	75 - 125	561.3417		77.4943		500.00	96.8		P
Mercury	75 - 125	1.0700		0.1000	U	1.00	107.0		CV
Nickel	75 - 125	484.3227		0.8636	B	500.00	96.7		P
Selenium	75 - 125	9.6739		2.2000	U	10.00	96.7		P
Silver	75 - 125	44.9313		0.6200	U	50.00	89.9		P
Thallium	75 - 125	46.7427		3.3000	U	50.00	93.5		P
Vanadium	75 - 125	471.4378		0.9826	B	500.00	94.1		P
Zinc	75 - 125	506.6743		5.2000	U	500.00	101.3		P

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2004.2960		119.3217	B	2000.00	94.2		P
Antimony	75 - 125	487.9930		10.2855		500.00	95.5		P
Arsenic	75 - 125	36.4371		2.2000	U	40.00	91.1		P
Barium	75 - 125	1877.7680		22.9171	B	2000.00	92.7		P
Beryllium	75 - 125	49.9641		1.1525	B	50.00	97.6		P
Cadmium	75 - 125	47.9357		0.6400	U	50.00	95.9		P
Chromium	75 - 125	193.1994		2.4715	B	200.00	95.4		P
Cobalt	75 - 125	478.4967		1.6000	U	500.00	95.7		P
Copper	75 - 125	241.8803		0.8400	U	250.00	96.8		P
Iron	75 - 125	2065.0260		1159.8559		1000.00	90.5		P
Lead	75 - 125	18.6972		1.4000	U	20.00	93.5		P
Manganese	75 - 125	555.2668		77.4943		500.00	95.6		P
Mercury	75 - 125	1.0500		0.1000	U	1.00	105.0		CV
Nickel	75 - 125	478.0880		0.8636	B	500.00	95.4		P
Selenium	75 - 125	7.5142		2.2000	U	10.00	75.1		P
Silver	75 - 125	45.1339		0.6200	U	50.00	90.3		P
Thallium	75 - 125	45.8406		3.3000	U	50.00	91.7		P
Vanadium	75 - 125	467.6144		0.9826	B	500.00	93.3		P
Zinc	75 - 125	501.4722		5.2000	U	500.00	100.3		P

NQ MS OK

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-GW08A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	119.32	B	267.00	U	100.0		P
Antimony	10.29		12.00	U	100.0		P
Arsenic	2.20	U	11.00	U			P
Barium	22.92	B	21.68	B	5.4		P
Beryllium	1.15	B	2.97	B	158.3		P
Cadmium	0.64	U	3.20	U			P
Calcium	89970.70		87386.60		2.9		P
Chromium	2.47	B	3.50	U	100.0		P
Cobalt	1.60	U	8.00	U			P
Copper	0.84	U	4.20	U			P
Iron	1159.86		1107.35		4.5		P
Lead	1.40	U	7.00	U			P
Magnesium	1393.91	B	1362.97	B	2.2		P
Manganese	77.49		77.28		0.3		P
Mercury	0.10	U	0.50	U			CV
Nickel	0.86	B	3.35	U	100.0		P
Potassium	1124.65	B	991.92	B	11.8	E	P
Selenium	2.20	U	11.00	U			P
Silver	0.62	U	3.10	U			P
Sodium	6834.94		7157.53	B	4.7		P
Thallium	3.30	U	16.50	U			P
Vanadium	0.98	B	2.85	U	100.0		P
Zinc	5.20	U	26.00	U			P

JWJ

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903114

The indicated Sample Delivery Group (SDG) consisting of seventeen (17) dissolved water samples was received into the laboratory information management system (LIMS) on March 19, 20, and 21. 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 0.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903114-01 ID YS03-GW08A-0309S and YS03-GW08A-0309SD were inside control limits for the requested analytes except selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903114-01 ID YS03-GW08A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903114-01 ID YS03-GW08A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

for Susan Bass

Susan W. Bass
Senior Chemist
April 1, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	-61.5	B	44.1	U	44.1	U	44.1	U	44.100	U	P
Antimony	2.7	U	2.7	U	2.7	U	2.7	U	2.700	U	P
Arsenic	2.8	U	2.8	U	2.8	U	2.8	U	2.800	U	P
Barium	0.2	U	0.2	U	0.2	U	0.3	B	0.200	U	P
Beryllium	0.3	U	0.3	U	0.3	U	0.3	U	0.320	U	P
Cadmium	0.3	U	0.3	U	0.3	U	0.3	U	0.340	U	P
Calcium	31.5	U	31.5	U	31.5	U	31.5	U	31.500	U	P
Chromium	0.9	U	1.0	B	1.5	B	1.5	B	0.880	U	P
Cobalt	0.6	U	0.6	U	0.6	U	0.6	U	0.650	U	P
Copper	0.9	U	0.9	U	1.0	B	0.9	U	0.900	U	P
Iron	19.9	U	19.9	U	23.5	B	39.6	B	19.900	U	P
Lead	2.6	U	2.6	U	2.6	U	2.6	U	2.600	U	P
Magnesium	18.6	U	18.6	U	18.6	U	22.3	B	18.600	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.430	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	1.3	U	1.3	U	1.3	U	1.3	U	1.300	U	P
Potassium	579.6	B	591.1	B	582.3	B	598.1	B	575.247	B	P
Selenium	4.1	U	4.1	U	4.1	U	4.1	U	4.100	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.610	U	P
Sodium	214.8	U	214.8	U	214.8	U	214.8	U	214.800	U	P
Thallium	6.2	U	6.2	U	6.2	U	6.2	U	6.200	U	P
Vanadium	0.5	U	0.5	U	0.5	U	0.5	B	0.470	U	P
Zinc	0.7	U	0.7	U	2.2	B	1.9	B	0.740	U	P

see PB

none asxc

GW08A

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			44.1	U	57.4	B	52.7	B			P
Antimony			2.7	U	2.7	U	2.7	U			P
Arsenic			2.8	U	2.8	U	2.8	U			P
Barium			0.4	B	0.3	B	0.2	U			P
Beryllium			0.3	U	0.6	B	0.6	B			P
Cadmium			0.3	U	0.3	U	0.3	U			P
Calcium			31.5	U	31.5	U	-38.8	B			P
Chromium			1.8	B	1.4	B	1.4	B			P
Cobalt			0.6	U	0.7	B	0.6	U			P
Copper			0.9	U	0.9	U	-0.9	B			P
Iron			31.7	B	22.6	B	19.9	U			P
Lead			2.6	U	2.6	U	2.6	U			P
Magnesium			18.6	U	18.6	U	18.6	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U	0.100	U	0.100	U			CV
Nickel			2.2	B	1.3	U	1.3	B			P
Potassium			612.4	B	604.4	B	594.7	B			P
Selenium			-4.9	B	4.1	U	4.1	U			P
Silver			0.6	U	0.6	U	0.7	B			P
Sodium			317.6	B	214.8	U	214.8	U			P
Thallium			6.2	U	6.2	U	6.2	U			P
Vanadium			1.0	B	0.6	B	0.6	B			P
Zinc			1.8	B	1.9	B	0.7	U			P

GW08A GW06 GW19 GW28 GW22 GW25 GW27 GW20A GW20 GW25P

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2019.4890		44.1000	U	2000.00	101.0		P
Antimony	75 - 125	512.0054		2.7000	U	500.00	102.4		P
Arsenic	75 - 125	42.4574		4.6592	B	40.00	94.5		P
Barium	75 - 125	2117.8410		24.5538	B	2000.00	104.7		P
Beryllium	75 - 125	48.0232		0.3200	U	50.00	96.0		P
Cadmium	75 - 125	50.1354		0.3400	U	50.00	100.3		P
Chromium	75 - 125	202.9623		0.8800	U	200.00	101.5		P
Cobalt	75 - 125	500.7670		0.6500	U	500.00	100.2		P
Copper	75 - 125	253.7181		0.9000	U	250.00	101.5		P
Iron	75 - 125	1831.2640		810.1338		1000.00	102.1		P
Lead	75 - 125	21.0886		2.6000	U	20.00	105.4		P
Manganese	75 - 125	580.6172		77.3078		500.00	100.7		P
Mercury	75 - 125	0.9740		0.1000	U	1.00	97.4		CV
Nickel	75 - 125	508.7425		1.3000	U	500.00	101.7		P
Selenium	75 - 125	14.1187		7.7458		10.00	63.7	N	P
Silver	75 - 125	45.4945		0.6698	B	50.00	89.6		P
Thallium	75 - 125	50.6622		6.2000	U	50.00	101.3		P
Vanadium	75 - 125	498.1236		0.4700	U	500.00	99.6		P
Zinc	75 - 125	506.0254		0.7929	B	500.00	101.0		P

J UJ

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2043.5030		44.1000	U	2000.00	102.2		P
Antimony	75 - 125	518.6543		2.7000	U	500.00	103.7		P
Arsenic	75 - 125	43.1633		4.6592	B	40.00	96.3		P
Barium	75 - 125	2143.0080		24.5538	B	2000.00	105.9		P
Beryllium	75 - 125	49.1602		0.3200	U	50.00	98.3		P
Cadmium	75 - 125	51.6218		0.3400	U	50.00	103.2		P
Chromium	75 - 125	206.1846		0.8800	U	200.00	103.1		P
Cobalt	75 - 125	508.7012		0.6500	U	500.00	101.7		P
Copper	75 - 125	253.2757		0.9000	U	250.00	101.3		P
Iron	75 - 125	1876.0630		810.1338		1000.00	106.6		P
Lead	75 - 125	20.8411		2.6000	U	20.00	104.2		P
Manganese	75 - 125	589.6641		77.3078		500.00	102.5		P
Mercury	75 - 125	0.8980		0.1000	U	1.00	89.8		CV
Nickel	75 - 125	515.4078		1.3000	U	500.00	103.1		P
Selenium	75 - 125	14.8122		7.7458		10.00	70.7	N	P
Silver	75 - 125	45.2119		0.6698	B	50.00	89.1		P
Thallium	75 - 125	55.6979		6.2000	U	50.00	111.4		P
Vanadium	75 - 125	505.5922		0.4700	U	500.00	101.1		P
Zinc	75 - 125	515.9023		0.7929	B	500.00	103.0		P

JMJ

Comments:

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-GW08A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	44.10	U	220.50	U			P
Antimony	2.70	U	21.76	B	100.0		P
Arsenic	4.66	B	14.00	U	100.0		P
Barium	24.55	B	26.85	B	9.4		P
Beryllium	0.32	U	1.60	U			P
Cadmium	0.34	U	1.70	U			P
Calcium	91454.49		91781.30		0.4		P
Chromium	0.88	U	4.40	U			P
Cobalt	0.65	U	3.25	U			P
Copper	0.90	U	4.50	U			P
Iron	810.13		895.46		10.5		P
Lead	2.60	U	13.00	U			P
Magnesium	1461.54	B	1443.63	B	1.2		P
Manganese	77.31		78.51		1.6		P
Mercury	0.10	U	0.50	U			CV
Nickel	1.30	U	6.50	U			P
Potassium	1767.75	B	3944.07	B	123.1	E	P
Selenium	7.75		20.50	U	100.0		P
Silver	0.67	B	3.05	U	100.0		P
Sodium	6938.05		6800.00	B	2.0		P
Thallium	6.20	U	31.00	U			P
Vanadium	0.47	U	2.35	U			P
Zinc	0.79	B	17.08	B	2062.0		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 14, 2009
SDG # 0903136 & 0903137, CompuChem
NWS Yorktown

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903136 and 0903137. The data validation was performed in accordance with the SW-846 Methods 8260B for volatiles and 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS06-EB01-032309	0903136-04	water	X	X	X
YS06-EB01-032409	0903136-08	water	X	X	X
YS06-EB01-032509	0903136-14	water	X	X	X
YS06-EB01-032609	0903136-23	water	X	X	X
YS06-EB02-032309	0903136-05	water	X	X	X
YS06-EB02-032409	0903136-09	water	X	X	X
YS06-EB02-032509	0903136-15	water	X	X	X
YS06-GW01-0309	0903136-02	water	X	X	X
YS06-GW01A-0309	0903136-01	water	X	X	X
YS06-GW01P-0309	0903136-03	water	X	X	X
YS06-GW02-0309	0903136-07	water	X	X	X
YS06-GW03-0309	0903136-16	water	X	X	X
YS06-GW05B-0309	0903136-21	water	X	X	X
YS06-GW05BP-0309	0903136-22	water	X	X	X
YS06-GW07-0309	0903136-20	water	X	X	X
YS06-GW09-0309	0903136-17	water	X	X	X
YS06-GW09A-0309	0903136-18	water	X	X	X
YS06-GW10-0309	0903136-11	water	X	X	X
YS06-GW10A-0309	0903136-12	water	X	X	X
YS06-GW11-0309	0903136-10	water	X	X	X
YS06-TB01-032309	0903136-06	water	X		
YS06-TB01-032409	0903136-13	water	X		
YS06-TB01-032509	0903136-19	water	X		
YS06-GW01A-0309 MS	0903136-01MS	water	X	X	X
YS06-GW01A-0309 MSD	0903136-01MSD	water	X	X	X

The following quality control samples were provided with this SDG: sample YS06-TB01-032309, YS06-TB01-032409 and YS06-TB01-032509-trip blanks; samples YS06-EB01-032309, YS06-EB02-032309, YS06-EB01-032409, YS06-EB02-032409, YS06-EB01-032509, YS06-EB02-032509 and YS06-EB01-032609-equipment blanks; sample YS06-GW01P-0309-field duplicate of sample YS06-GW01-0309; and sample YS06-GW05BP-0309-field duplicate of sample YS06-GW05B-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Sample Condition	
• Technical Holding Times	*
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	*
• Identification/Quantitation	
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Total & Dissolved Metals

The MS/MSD pair analyzed for the dissolved metals exhibited one analyte with recoveries below 30%. Positive results for selenium were qualified as biased low L and non-detect results were rejected R in the dissolved metals field samples.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Two samples contained headspace in all sample vials that resulted in qualifications the data.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total & Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The MS/MSD pair analyzed for the dissolved metals exhibited several analytes with low recoveries. These analytes were qualified as biased low L/UL in the dissolved metals field samples.

The serial dilution analysis exhibited non-compliant %Ds in the dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the dissolved metals field samples.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were required for the VOA fraction. The case narrative that was submitted with the data package had the incorrect cooler temperatures listed. The laboratory was contacted and a corrected case narrative was submitted.

Sample Condition

VOA

All sample vials for YS06-TB01-032409 and YS06-TB01-032509 contained headspace; therefore results were qualified as biased low (L/UL), qualifier code: OT.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/23-26/09 and samples were received at the laboratory 03/24-27/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/28/09	acetone	0.0405	all samples	L/R	ICL
CC 03/31/09 CC 04/01/09 CC 04/02/09	acetone 2-butanone	0.0363/0.0348/0.0354 0.0435/0.0443/0.0487	all samples	L/R	CCL
CC 03/31/09 CC 04/01/09 CC 04/02/09	chloromethane	-28.12/-31.59/-35.90	all samples	J	CCL
CC 03/31/09	2-hexanone	-24.86	YS06-TB01-032309	J	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHY	chloromethane	0.13J ug/L	0.50 ug/L	0.65
VBLKIB	chloromethane	0.17J	0.5	0.85
	acetone	0.16J	2.5	1.6
VBLKHV	chloromethane	0.16J	0.5	0.8
YS06-TB01-032309	chloromethane	0.25J	0.5	1.25
	acetone	1.4J	2.5	14
YS06-TB01-032409	chloromethane	0.19J	0.5	0.95
	acetone	4.6	2.5	46
YS06-TB01-032509	chloromethane	0.22J	0.5	1.1
	acetone	1.3J	2.5	13
	toluene	0.46J	0.5	2.3
YS06-EB01-032309	chloromethane	0.42J	0.5	2.1
	acetone	13	2.5	130
	chloroform	0.23J	0.5	1.15
	toluene	0.98	0.5	4.9
YS06-EB02-032309	chloromethane	0.7	0.5	3.5
	acetone	7.6	2.5	76
	chloroform	0.41J	0.5	2.05
	toluene	1.7	0.5	8.5
YS06-EB01-032409	chloromethane	1.1	0.5	5.5
	acetone	5.2	2.5	52
	chloroform	0.27J	0.5	1.35
	toluene	1.0	0.5	5
YS06-EB02-032409	chloromethane	0.24J	0.5	1.2
	acetone	6.2	2.5	62
	chloroform	0.26J	0.5	1.3
	toluene	1.0	0.5	5
YS06-EB01-032509	chloromethane	0.29J	0.5	1.45
	acetone	36	2.5	360
	toluene	0.28J	0.5	1.4
YS06-EB02-032509	chloromethane	0.2J	0.5	1.0
	acetone	10	2.5	100
	chloroform	0.48J	0.5	2.4
	toluene	0.45J	0.5	2.25
YS06-FB01-032609	chloromethane	0.3J	0.5	1.5
	acetone	3.2	2.5	32
	chloroform	0.52	0.5	2.6
	toluene	1.8	0.5	9

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all field samples	chloromethane	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309	acetone	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW1 – total metals	beryllium	0.542B ug/L	2.71 ug/L	B	BL
PBW2 – total metals	antimony	2.662B ug/L	13.3 ug/L	B	BL
	chromium	1.253B ug/L	6.265 ug/L	B	BL
	copper	0.969B ug/L	4.845 ug/L	B	BL
	nickel	0.847B ug/L	4.235 ug/L	B	BL
	vanadium	0.669B ug/L	3.345 ug/L	B	BL
	beryllium	-0.672B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-1.953B	≤ 10X MDL (16 ug/L)	L/UL	BL
ICB/CCB Run #2	antimony	3.3B ug/L	16.5 ug/L	B	BL
	chromium	2.0B ug/L	10 ug/L	B	BL
	copper	1.9B ug/L	9.5 ug/L	B	BL
	nickel	0.9B ug/L	4.5 ug/L	B	BL
	vanadium	0.9B ug/L	4.5 ug/L	B	BL
	beryllium	-0.9B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-2.0B	≤ 10X MDL (16 ug/L)	L/UL	BL

Total Metals

Sample ID	Analyte	Q Flag	Q Code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	antimony	B	BL
YS06-GW10-0309	beryllium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	L/UL	BL

Total Metals

Sample ID	Analyte	Q Flag	Q Code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	lead	-2.018B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	copper	-1.433B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	beryllium	0.647B ug/L	3.235 ug/L	B	BL
ICB/CCB – dissolved metals	nickel	1.0B ug/L	5.0 ug/L	B	BL
	selenium	2.3B ug/L	11.5 ug/L	B	BL
	vanadium	0.7B ug/L	3.5 ug/L	B	BL
	thallium	4.4B ug/L	22 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	lead	L/UL	BL
all dissolved metals field samples	copper	L/UL	BL
YS06-GW01-0309, YS06-GW11-0309	beryllium	B	BL
YS06-GW02-0309, YS06-GW03-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW03-0309, YS06-GW10-0309	selenium	B	BL
YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL
YS06-GW07-0309	thallium	B	BL

Total and Dissolved Metals

The matrix spike analysis of sample YS06-GW01A-0309 for dissolved metals exhibited non-compliant %Rs (<80% or >120%) for several analytes. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS06-GW01A-0309	arsenic	all dissolved metals field samples	53.7/52.2	L/UL	MSL
	barium		78.4/78.3		
	beryllium		78.1/77.7		
	lead		68.8/64.0		
	silver		58.1/58.3		
	thallium		66.4/62.2		
	vanadium		77.8/77.5		
	selenium		9.4/1.8	L/R	

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS06-GW01A-0309	potassium	all dissolved metals field samples	21.8	J/UJ	SD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) were met. No validation action was required.

Instrument P4 – Total & Dissolved

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS06-TB01-032409, YS06-TB01-032509	all results	+/-	L/UL	OT
all samples	acetone	+/-	L/R	ICL
all samples	acetone* 2-butanone	+/-	L/R	CCL
all samples	chloromethane	+	J	CCL
YS06-TB01-032309	2-hexanone	+	J	CCL
all field samples	chloromethane	+	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309	acetone	+	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	+	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	antimony	+ up to action level	B	BL
YS06-GW10-0309	beryllium	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	+/- up to action level	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	+/- up to action level	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	+ up to action level	B	BL
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all dissolved metals field samples	lead	+/- up to action level	L/UL	BL
all dissolved metals field samples	copper	+/- up to action level	L/UL	BL
YS06-GW01-0309, YS06-GW11-0309	beryllium	+ up to action level	B	BL
YS06-GW02-0309, YS06-GW03-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	+ up to action level	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW03-0309, YS06-GW10-0309	selenium	+ up to action level	B	BL
YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	+ up to action level	B	BL
YS06-GW07-0309	thallium	+ up to action level	B	BL
all dissolved metals field samples **	arsenic barium beryllium lead silver thallium vanadium	+/-	L/UL	MSL
all dissolved metals field samples	selenium*	+/-	L/R	MSL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

*some positive results for selenium were qualified as B, BL due to blank contamination
** blank contamination flags were used for some analytes rather than matrix spike flags

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0471

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.42	~~UJ~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	13	L ICL
79-20-9	Methyl acetate	0.12	J
75-09-2	Methylene Chloride	3.1	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	3.2	L CCL
67-66-3	Chloroform	0.23	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.98	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WW 053107

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0471

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

05/07

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0871

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	1.1	~~J~~ CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.58	
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.2	L ICL
79-20-9	Methyl acetate	0.17	J
75-09-2	Methylene Chloride	3.5	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	11	L CCL
67-66-3	Chloroform	0.27	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.0	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WR 033109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0871

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1471

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.29	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	36	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.3	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	5.4	L CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.28	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 053109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1471

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2371

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.62	~~U~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	8.8	~~U~~ L ICL
79-20-9	Methyl acetate	0.11	J
75-09-2	Methylene Chloride	4.7	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.8	L CCL
67-66-3	Chloroform	0.35	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.23	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 033109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2371

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0571

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.70	~~B~~ J	CCL
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	7.6		L ICL
79-20-9	Methyl acetate	0.12	J	
75-09-2	Methylene Chloride	5.6		
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	4.9		L CCL
67-66-3	Chloroform	0.41	J	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	1.7		
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

VM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0571

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.14	J
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0971

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.24	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.2	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.8	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	L CCL
67-66-3	Chloroform	0.26	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.0	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 033109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0971

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1571

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.20	~~J~~	J CCL
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	10		L ICL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	6.7		
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	3.3		L CCL
67-66-3	Chloroform	0.48	J	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.45	J	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

WM 033101

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1571

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0271

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.19	~~JB~~ B BL
75-01-4	Vinyl Chloride	4.1	
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.16	J
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	5.3	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.8	BRL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	3.3	
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	1.8	
156-59-2	cis-1,2-Dichloroethene	18	
78-93-3	2-butanone	2.5	~~J~~ RCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	13	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.10	~~J~~ BRL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0271

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	21	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.0	J B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.16	J B BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

053101

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW01P-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0371

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.17	~~JB~~ B BL
75-01-4	Vinyl Chloride	3.9	
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	6.1	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	3.6	
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	2.0	
156-59-2	cis-1,2-Dichloroethene	21	
78-93-3	2-butanone	2.5	~~J~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	14	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.11	~~J~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0371

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	24	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0771

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	~~J~~ B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~J~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.21	~~J~~ B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VPS 040109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0771

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.15	J
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1671

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.7	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~J~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	~~J~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 053107

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1671

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2171

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.15	~~JB~~ B B2
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	2.2	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.2	B B2
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.82	
156-59-2	cis-1,2-Dichloroethene	3.7	
78-93-3	2-butanone	2.5	~~U~~ B CCL
67-66-3	Chloroform	0.54	B B2
71-55-6	1,1,1-Trichloroethane	0.28	J
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	6.0	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 053109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2171

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	3.7	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
5BP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2271

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.24	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	2.2	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.2	~~JB~~ B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.76	
156-59-2	cis-1,2-Dichloroethene	3.8	
78-93-3	2-butanone	2.5	~~U~~ R CCL B, BL
67-66-3	Chloroform	0.50	
71-55-6	1,1,1-Trichloroethane	0.29	J
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	6.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

VM 05/04

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
5BP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2271

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	3.7	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2071

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.10	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.10	J
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	1.1	
78-93-3	2-butanone	2.5	~~J~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.8	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2071

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	1.0	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1771

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.18	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.7	~~J~~ B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.11	J
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.11	~~J~~ B,BL
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.87	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.12	~~J~~ B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1771

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.11	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1871

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.6	B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	~~U~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1871

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1171

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.30	~~JB~~ B B2
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ B, B2
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.14	~~J~~ B, B2
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1171

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1271

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.4	B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~B~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1271

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1071

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	~~J~~ B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~J~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.15	~~J~~ B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 05/10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1071

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0671

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.25	~~J~~ JCCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.4	~~J~~ ICCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	0.63	~~J~~ JCCL
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0671

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1371

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U VL,OT
74-87-3	Chloromethane	0.19	J VL,OT
75-01-4	Vinyl Chloride	0.50	U VL,OT
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.6	L,OT
79-20-9	Methyl acetate	0.50	U VL,OT
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RCCL
67-66-3	Chloroform	0.50	U VL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WW 053107

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-TB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1371

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	0.50	U	UL,0T
108-90-7	Chlorobenzene	0.50	U	
100-41-4	Ethylbenzene	0.50	U	
108-38-3	m,p-Xylene	1.0	U	
95-47-6	o-Xylene	0.50	U	
100-42-5	Styrene	0.50	U	
75-25-2	Bromoform	0.50	U	
98-82-8	Isopropyl Benzene	0.50	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	
541-73-1	1,3-Dichlorobenzene	0.50	U	
106-46-7	1,4-Dichlorobenzene	0.50	U	
95-50-1	1,2-Dichlorobenzene	0.50	U	
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U	
120-82-1	1,2,4-Trichlorobenzene	0.50	U	
540-59-0	1,2-Dichloroethene (total)	0.50	U	
1330-20-7	Xylene (total)	0.50	U	
110-82-7	Cyclohexane	0.50	U	
108-87-2	Methylcyclohexane	0.50	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-19R71

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U UL,OT
74-87-3	Chloromethane	0.22	JB L,OT
75-01-4	Vinyl Chloride	0.50	U UL,OT
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.3	JB L,OT
79-20-9	Methyl acetate	0.50	U UL,OT
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ ~~UL,OT~~ R,CCL
67-66-3	Chloroform	0.50	U UL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.46	J L,OT
10061-02-6	trans-1,3-Dichloropropene	0.50	U UL,OT
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

1 correction

WW 05307

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-19R71

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U VL,OT
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.13	JB VL,OT
540-59-0	1,2-Dichloroethene (total)	0.50	U VL,OT
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

VM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
1A-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MS171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	8.3	
74-87-3	Chloromethane	6.2	B
75-01-4	Vinyl Chloride	8.3	B
74-83-9	Bromomethane	6.5	
75-00-3	Chloroethane	7.7	
75-69-4	Trichlorofluoromethane	8.9	
75-35-4	1,1-Dichloroethene	6.2	
75-15-0	Carbon disulfide	7.0	
76-13-1	1,1,2-trichloro-1,2,2-triflu	7.2	
67-64-1	Acetone	33	
79-20-9	Methyl acetate	5.9	
75-09-2	Methylene Chloride	6.6	
156-60-5	trans-1,2-Dichloroethene	6.2	
1634-04-4	Methyl-tert-butyl ether	5.5	
75-34-3	1,1-Dichloroethane	7.0	
156-59-2	cis-1,2-Dichloroethene	6.1	
78-93-3	2-butanone	28	
67-66-3	Chloroform	7.2	
71-55-6	1,1,1-Trichloroethane	7.1	
56-23-5	Carbon Tetrachloride	7.1	B
71-43-2	Benzene	6.3	
107-06-2	1,2-Dichloroethane	7.5	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.5	
75-27-4	Bromodichloromethane	7.0	
10061-01-5	cis-1,3-Dichloropropene	6.2	
108-10-1	4-Methyl-2-pentanone	27	
108-88-3	Toluene	5.3	
10061-02-6	trans-1,3-Dichloropropene	6.1	
79-00-5	1,1,2-Trichloroethane	5.4	
127-18-4	Tetrachloroethene	4.9	
591-78-6	2-hexanone	27	
124-48-1	Dibromochloromethane	5.8	

FORM I VOA

VV 05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
1A-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MS171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.4	
108-90-7	Chlorobenzene	5.1	
100-41-4	Ethylbenzene	5.0	
108-38-3	m,p-Xylene	9.9	
95-47-6	o-Xylene	5.0	
100-42-5	Styrene	5.0	
75-25-2	Bromoform	5.5	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.4	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.5	
95-50-1	1,2-Dichlorobenzene	4.6	
96-12-8	1,2-Dibromo-3-Chloropropane	5.5	
120-82-1	1,2,4-Trichlorobenzene	4.3	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	5.6	
108-87-2	Methylcyclohexane	5.6	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW01
A-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MSD171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	7.7	
74-87-3	Chloromethane	5.2	B
75-01-4	Vinyl Chloride	7.3	B
74-83-9	Bromomethane	6.3	
75-00-3	Chloroethane	6.7	
75-69-4	Trichlorofluoromethane	8.0	
75-35-4	1,1-Dichloroethene	6.1	
75-15-0	Carbon disulfide	6.5	
76-13-1	1,1,2-trichloro-1,2,2-triflu	7.3	
67-64-1	Acetone	30	
79-20-9	Methyl acetate	5.6	
75-09-2	Methylene Chloride	6.0	
156-60-5	trans-1,2-Dichloroethene	5.9	
1634-04-4	Methyl-tert-butyl ether	5.7	
75-34-3	1,1-Dichloroethane	6.4	
156-59-2	cis-1,2-Dichloroethene	5.7	
78-93-3	2-butanone	26	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	6.8	
56-23-5	Carbon Tetrachloride	7.4	B
71-43-2	Benzene	5.9	
107-06-2	1,2-Dichloroethane	6.8	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	6.6	
10061-01-5	cis-1,3-Dichloropropene	5.9	
108-10-1	4-Methyl-2-pentanone	25	
108-88-3	Toluene	5.6	
10061-02-6	trans-1,3-Dichloropropene	6.0	
79-00-5	1,1,2-Trichloroethane	5.1	
127-18-4	Tetrachloroethene	5.5	
591-78-6	2-hexanone	25	
124-48-1	Dibromochloromethane	5.7	

FORM I VOA

WW 03/10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01
A-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MSD171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.3	
108-90-7	Chlorobenzene	5.5	
100-41-4	Ethylbenzene	5.6	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.5	
100-42-5	Styrene	4.9	
75-25-2	Bromoform	5.3	
98-82-8	Isopropyl Benzene	5.9	
79-34-5	1,1,2,2-Tetrachloroethane	5.3	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.3	
95-50-1	1,2-Dichlorobenzene	5.2	
96-12-8	1,2-Dibromo-3-Chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	5.1	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	17	
110-82-7	Cyclohexane	6.4	
108-87-2	Methylcyclohexane	6.5	

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW01A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-01

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	373			P
7440-36-0	Antimony	8.2	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	31.5	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74000			P
7440-47-3	Chromium	4.4	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~B~~	NL BL	P
7440-50-8	Copper	1.9	~~B~~	B BL	P
7439-89-6	Iron	1300			P
7439-92-1	Lead	2.1	~~B~~	J	P
7439-95-4	Magnesium	2650	~~B~~	J	P
7439-96-5	Manganese	30.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.6	~~B~~	B BL	P
7440-09-7	Potassium	3050	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	14100			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.2	~~B~~	B BL	P
7440-66-6	Zinc	9.1	~~B~~	J	P

6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW01-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-02

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	6.9	~~B~~	J	P
7440-38-2	Arsenic	9.2	~~B~~	J	P
7440-39-3	Barium	23.7	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	72600			P
7440-47-3	Chromium	1.2	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	23500			P
7439-92-1	Lead	1.9	~~B~~	J	P
7439-95-4	Magnesium	7690			P
7439-96-5	Manganese	583			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.79	~~B~~	J	P
7440-09-7	Potassium	3070	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	9430			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	~~B~~	J	P
7440-66-6	Zinc	5.5	~~B~~	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW01P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-03

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	5.2	~~B~~	J	P
7440-38-2	Arsenic	9.1	~~B~~	J	P
7440-39-3	Barium	22.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74400			P
7440-47-3	Chromium	0.93	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	21600			P
7439-92-1	Lead	2.2	~~B~~	J	P
7439-95-4	Magnesium	7580			P
7439-96-5	Manganese	566			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.82	~~B~~	J	P
7440-09-7	Potassium	2990	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	9310			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.6	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW02-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-07

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1780			P
7440-36-0	Antimony	4.8	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	42.9	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	87900			P
7440-47-3	Chromium	8.3	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.88	B	J	P
7439-89-6	Iron	4150			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	2670	B	J	P
7439-96-5	Manganese	47.4			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	B	J	P
7440-09-7	Potassium	1940	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4890	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	5.3	B	J	P
7440-66-6	Zinc	11.9	B	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-10

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	123	B	J	P
7440-36-0	Antimony	3.9	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	32.4	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	64600			P
7440-47-3	Chromium	1.6	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	3860			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4430	B	J	P
7439-96-5	Manganese	120			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.1	B	J	P
7440-09-7	Potassium	2940	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7490			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-11

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1790			P
7440-36-0	Antimony	5.2	B	J	P
7440-38-2	Arsenic	2.3	B	J	P
7440-39-3	Barium	40.6	B	J	P
7440-41-7	Beryllium	0.57	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	138000			P
7440-47-3	Chromium	7.5	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	3050			P
7439-92-1	Lead	2.6	B	J	P
7439-95-4	Magnesium	6460			P
7439-96-5	Manganese	64.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	6.5	B	J	P
7440-09-7	Potassium	3310	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	38700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	9.2	B	J	P
7440-66-6	Zinc	10.2	B	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW10A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-12

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	363			P
7440-36-0	Antimony	4.3	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	24.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	96600			P
7440-47-3	Chromium	2.5	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	2470			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	7040			P
7439-96-5	Manganese	17.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	B	J	P
7440-09-7	Potassium	3610	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	29800			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.7	B	J	P
7440-66-6	Zinc	11.8	B	J	P

JC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW03-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-16

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	710			P
7440-36-0	Antimony	10.5		B BL	P
7440-38-2	Arsenic	3.0	B	J	P
7440-39-3	Barium	30.1	B	J	P
7440-41-7	Beryllium	0.42	B	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	106000			P
7440-47-3	Chromium	5.2	B	B BL	P
7440-48-4	Cobalt	1.6	B	UL BL	P
7440-50-8	Copper	1.5	B	B BL	P
7439-89-6	Iron	3950			P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	2940	B	J	P
7439-96-5	Manganese	21.1			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	B	B BL	P
7440-09-7	Potassium	4400	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6420			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.8	B	B BL	P
7440-66-6	Zinc	8.6	B	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW09-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-17

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	54.2	~~B~~	J	P
7440-36-0	Antimony	9.6	~~B~~	B BL	P
7440-38-2	Arsenic	3.1	~~B~~	J	P
7440-39-3	Barium	59.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	226000			P
7440-47-3	Chromium	2.0	~~B~~	B BL	P
7440-48-4	Cobalt	2.5	~~B~~	L UL	P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	562			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	12700			P
7439-96-5	Manganese	125			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.7	~~B~~	B BL	P
7440-09-7	Potassium	3750	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	255000			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.3	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-18

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	131	~~B~~	J	P
7440-36-0	Antimony	8.8	~~B~~	B BL	P
7440-38-2	Arsenic	2.8	~~B~~	J	P
7440-39-3	Barium	96.5	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	63700			P
7440-47-3	Chromium	3.9	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~U~~	UL BL	P
7440-50-8	Copper	1.1	~~B~~	B BL	P
7439-89-6	Iron	298			P
7439-92-1	Lead	2.5	~~B~~	J	P
7439-95-4	Magnesium	1030	~~B~~	J	P
7439-96-5	Manganese	12.8			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.9	~~B~~	B BL	P
7440-09-7	Potassium	4430	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	67500			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.5	~~B~~	B BL	P
7440-66-6	Zinc	6.4	~~B~~	J	P

AC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW07-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-20

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1050			P
7440-36-0	Antimony	9.9	~~B~~	B BL	P
7440-38-2	Arsenic	5.4	~~B~~	J	P
7440-39-3	Barium	43.8	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	6.3	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~U~~	UL BL	P
7440-50-8	Copper	2.1	~~B~~	B BL	P
7439-89-6	Iron	2360			P
7439-92-1	Lead	2.9	~~B~~	J	P
7439-95-4	Magnesium	5410			P
7439-96-5	Manganese	89.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.9	~~B~~	J	P
7440-09-7	Potassium	1540	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	38400			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	6.9	~~B~~	J	P
7440-66-6	Zinc	15.1	~~B~~	J	P

JMC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW05B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-21

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1770			P
7440-36-0	Antimony	11.4		B BL	P
7440-38-2	Arsenic	6.0	~~B~~	J	P
7440-39-3	Barium	32.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	ML BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	114000			P
7440-47-3	Chromium	9.7	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~B~~	ML BL	P
7440-50-8	Copper	2.6	~~B~~	B BL	P
7439-89-6	Iron	3890			P
7439-92-1	Lead	3.9			P
7439-95-4	Magnesium	3180	~~B~~	J	P
7439-96-5	Manganese	41.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.1	~~B~~	J	P
7440-09-7	Potassium	1530	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8920			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	15.5	~~B~~	J	P
7440-66-6	Zinc	13.4	~~B~~	J	P

JLC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW05BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-22

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1690			P
7440-36-0	Antimony	10.0	B	B BL	P
7440-38-2	Arsenic	5.0	B	J	P
7440-39-3	Barium	31.8	B	J	P
7440-41-7	Beryllium	0.42	B	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	115000			P
7440-47-3	Chromium	9.6	B	B BL	P
7440-48-4	Cobalt	1.6	B	UL BL	P
7440-50-8	Copper	2.6	B	B BL	P
7439-89-6	Iron	3540			P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	3160	B	J	P
7439-96-5	Manganese	38.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.9	B	J	P
7440-09-7	Potassium	1460	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8850			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	15.3	B	J	P
7440-66-6	Zinc	12.7	B	J	P

4/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-04

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	10.1	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	4.6	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-08

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-14

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-23

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.5	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.85	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.75	~~B~~	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 01409

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-05

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-09

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 4/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-15

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JJC 6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
XS06-GW01-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-02

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	13.3		~~N~~ L	P	MSL
7440-39-3	Barium	19.7	~~B~~	~~B~~ L	P	MSL
7440-41-7	Beryllium	0.42	~~B~~	B BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	69200			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	19900			P	
7439-92-1	Lead	1.4	~~N~~	~~N~~ UL	P	BL
7439-95-4	Magnesium	7980			P	
7439-96-5	Manganese	551			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	3450	~~B~~	~~B~~ J SD	P	
7782-49-2	Selenium	4.1	~~B~~	~~N~~ B BL	P	
7440-22-4	Silver	0.62	~~N~~	~~N~~ UL	P	MSL
7440-23-5	Sodium	9400			P	
7440-28-0	Thallium	3.3	~~N~~	~~N~~ UL	P	MSL
7440-62-2	Vanadium	1.2	~~B~~	~~B~~ J	P	L MSL
7440-66-6	Zinc	5.2	U		P	

x2 Corr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW01A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-01

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	379			P	
7440-36-0	Antimony	97.6			P	
7440-38-2	Arsenic	20.3		~~N~~ L	P	MSL
7440-39-3	Barium	387		L	P	
7440-41-7	Beryllium	9.1		L	P	
7440-43-9	Cadmium	8.5			P	
7440-70-2	Calcium	69600			P	
7440-47-3	Chromium	18.0			P	
7440-48-4	Cobalt	88.9			P	
7440-50-8	Copper	49.0			P	
7439-89-6	Iron	382			P	
7439-92-1	Lead	5.5		~~N~~ L	P	MSL
7439-95-4	Magnesium	3690	~~B~~	J	P	
7439-96-5	Manganese	49.5			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	74.5			P	
7440-09-7	Potassium	4430	~~B~~	~~N~~ J SD	P	
7782-49-2	Selenium	9.8		~~N~~ B BL	P	
7440-22-4	Silver	15.7		~~N~~ L	P	MSL
7440-23-5	Sodium	17200			P	
7440-28-0	Thallium	21.9		~~N~~ L	P	MSL
7440-62-2	Vanadium	90.8		L	P	MSL
7440-66-6	Zinc	41.7			P	

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW01P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-03

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	12.4		L	P	MSL
7440-39-3	Barium	19.2		↓	P	↓
7440-41-7	Beryllium	0.42		UL	P	MSL
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	69300			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	19000			P	
7439-92-1	Lead	1.4		UL	P	MSL
7439-95-4	Magnesium	7750			P	
7439-96-5	Manganese	533			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	3380		J SD	P	
7782-49-2	Selenium	2.6		BL	P	
7440-22-4	Silver	0.62		UL	P	MSL
7440-23-5	Sodium	9370			P	
7440-28-0	Thallium	3.3		UL	P	MSL
7440-62-2	Vanadium	1.1		L	P	↓.
7440-66-6	Zinc	7.8		J	P	

JLC 6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
TS06-GW02-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-06

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.2	~~U~~	~~X~~ L	P	MSL
7440-39-3	Barium	32.2	~~U~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	↓
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	82000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	397			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	2210	~~U~~	J	P	
7439-96-5	Manganese	27.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.72	~~U~~	B BL	P	
7440-09-7	Potassium	1300	~~U~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	4530	~~U~~	J	P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	5.2	U		P	

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW03-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-14

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.3	B	L	P	MSL
7440-39-3	Barium	23.1	B	L	P	
7440-41-7	Beryllium	0.42	B	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	93100			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	236			P	
7439-92-1	Lead	1.4	B	UL	P	MSL
7439-95-4	Magnesium	2550	B	J	P	
7439-96-5	Manganese	9.4	B	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.94	B	B BL	P	
7440-09-7	Potassium	3900	B	J SD	P	
7782-49-2	Selenium	2.4	B	B BL	P	
7440-22-4	Silver	0.62	U	UL	P	MSL
7440-23-5	Sodium	5900			P	
7440-28-0	Thallium	4.1	B	L	P	MSL
7440-62-2	Vanadium	0.57	B	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW05B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-18

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	4.0	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	24.4	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	112000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	2730	~~B~~	J	P	
7439-96-5	Manganese	8.5	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.5	~~B~~	B BL	P	
7440-09-7	Potassium	849	~~B~~	E J SD	P	
7782-49-2	Selenium	3.3	~~B~~	~~X~~ ~~B~~ BL	P	L MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	8290			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

MC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW05BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-19

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.6	~~B~~	~~B~~ L	P	MSL
7440-39-3	Barium	24.1	~~B~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	112000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~B~~ UL	P	MSL
7439-95-4	Magnesium	2670	~~B~~	J	P	
7439-96-5	Manganese	12.3			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	835	~~B~~	~~B~~ J SD	P	
7782-49-2	Selenium	4.0	~~B~~	~~B BL~~	P	L MSL
7440-22-4	Silver	0.62	~~U~~	~~B~~ UL	P	MSL
7440-23-5	Sodium	8160			P	
7440-28-0	Thallium	3.3	~~U~~	~~B~~ UL	P	MSL
7440-62-2	Vanadium	0.87	~~B~~	B BL	P	
7440-66-6	Zinc	5.2	U		P	

JC 6/4/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW07-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-17

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.3	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	37.4	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	↓
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	124000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	5100			P	
7439-96-5	Manganese	45.8			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.8	~~B~~	B BL	P	
7440-09-7	Potassium	1100	~~B~~	~~X~~ J SD	P	
7782-49-2	Selenium	3.0	~~B~~	~~X~~ L	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	↓
7440-23-5	Sodium	37000			P	
7440-28-0	Thallium	3.7	~~B~~	~~X~~ B BL	P	
7440-62-2	Vanadium	0.62	~~B~~	B BL	P	
7440-66-6	Zinc	6.0	~~B~~	J	P	

JC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS06-GW09-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-15

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.2	~~U~~	~~X~~ UL	P	MSL
7440-39-3	Barium	55.9	~~B~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	254			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	12600			P	
7439-96-5	Manganese	119			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.6	~~U~~	B BL	P	
7440-09-7	Potassium	4010	~~B~~	BJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ UL	P	R MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	260000			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.78	~~B~~	B BL	P	
7440-66-6	Zinc	5.2	U		P	

X1corr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-16

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	6.2	~~B~~	~~N~~ L	P	MSL
7440-39-3	Barium	63.4	~~B~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	46500			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	4.1	~~B~~	J	P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~N~~ UL	P	MSL
7439-95-4	Magnesium	1170	~~B~~	J	P	
7439-96-5	Manganese	8.7	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	~~B~~	B BL	P	
7440-09-7	Potassium	4670	~~B~~	EJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~N~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~N~~ UL	P	MSL
7440-23-5	Sodium	59500			P	
7440-28-0	Thallium	3.3	~~U~~	~~N~~ UL	P	MSL
7440-62-2	Vanadium	0.90	~~B~~	B BL	P	
7440-66-6	Zinc	9.7	~~B~~	J	P	

6/4/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-10

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	4.5	~~B~~	~~W~~ L	P	MSL
7440-39-3	Barium	31.8	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	130000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~W~~ UL	P	MSL
7439-95-4	Magnesium	6330			P	
7439-96-5	Manganese	3.0	~~B~~	J	P	
7439-97-6	Mercury	0.14	~~U~~	J	CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	2830	~~B~~	~~B~~ JSD	P	
7782-49-2	Selenium	4.3	~~B~~	~~W~~ BJL	P	
7440-22-4	Silver	0.62	~~U~~	~~W~~ UL	P	MSL
7440-23-5	Sodium	39800			P	
7440-28-0	Thallium	3.3	~~U~~	~~W~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-09

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.4	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	30.7	~~B~~	L	P	↓
7440-41-7	Beryllium	0.92	~~B~~	B BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	62600			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	3100			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	4700	~~B~~	J	P	
7439-96-5	Manganese	112			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.70	~~B~~	B BL	P	
7440-09-7	Potassium	3200	~~B~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	7650			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	5.2	U		P	

BC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-11

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.4	~~U~~	~~X~~ L	P	MSL
7440-39-3	Barium	20.8	~~U~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	93900			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	382			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	7300			P	
7439-96-5	Manganese	10.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.96	~~U~~	B BL	P	
7440-09-7	Potassium	3700	~~U~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	31500			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	7.5	~~U~~	J	P	

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-04

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	~~W~~	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	~~W~~	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	25.2	~~B~~	~~E~~ J	P
7782-49-2	Selenium	2.2	U	~~W~~	P
7440-22-4	Silver	0.62	U	~~W~~	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	~~W~~	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-07

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	N	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	N	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	N	P
7440-22-4	Silver	0.62	U	N	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	N	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

KJC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-12

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	W	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	W	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	W	P
7782-49-2	Selenium	2.2	U	W	P
7440-22-4	Silver	0.62	U	W	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	W	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-20

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	W	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	W	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	W	P
7440-22-4	Silver	0.62	U	W	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	W	P
7440-62-2	Vanadium	0.59	U	J	P
7440-66-6	Zinc	5.2	U		P

JAC 6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-05

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	N	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	N	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	21.0	B	B J	P
7782-49-2	Selenium	2.2	U	N	P
7440-22-4	Silver	0.62	U	N	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.6	B	N J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-08

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	N	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	N	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	N	P
7440-22-4	Silver	0.62	U	N	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	4.6	B	N J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.3	B	J	P

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-13

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	W	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	W	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	W	P
7440-22-4	Silver	0.62	U	W	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	W	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166

3 coolers

15603

107

CHAIN OF CUSTODY

CompuChem
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Page 1 of 1

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER Contract
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40ml	Metals ILM05.3 100ml	F.Metals ILM05.3 100ml	Expl/PETN/3,5-DNA 8330 AL	Expl. SVB	pH / Sample Info (Lab Use): Metals	F. Metals
0903136-20 0903137-17	YSO6-GW07-0309	3/26/09	1005	GW	7	3		2				3	1	1	2	0903141-17	<2	<2
0903162-04	YSO6-TB01-032609	3/26/09	1045	TB	3	3						3						
0903136-21 0903137-18	YSO6-GW05B-0309	3/26/09	1400	GW	7	3		2				3	1	1	2	0903141-18	<2	<2
0903136-22 0903137-19	YSO6-GW05BP-0309	3/26/09	1405	GW	7	3		2				3	1	1	2	-19	<2	<2
0903136-23 0903137-20	YSO6-EB01-032609	3/26/09	1500	GW	7	3		2				3	1	1	2	-20	<2	<2
0903162-01 0903163-01	YSO6-FB01-032609	3/26/09	1510	GW	7	3		2				3	1	1	2(1)	0903168-01	<2	<2
0903162-02 0903163-02	YSO6-GW06-0309	3/26/09	1030	GW	7	3		2				3	1	1	2	0903168-02	<2	<2
0903162-03 0903163-03	YSO6-GW06A-0309	3/26/09	1415	GW	7	3		2				3	1	1	2	0903168-03	<2	<2
0903162-04 0903163-04	YSO6-EB02-032609	3/26/09	1515	GW	7	3		2				3	1	1	2(1)	0903168-04	<2	<2

Residual Chlorine Present? YES No ✓

Lab Use Only

Sample Unpacked By: K Burden
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain: FB01 and EB02 Al 'Rec'd Broken

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or N

Comments: Metals were field filtered larger than pea size air bubble in (1) one trip blank vial

Sample Custody

Relinquished by:		Date/Time: 3/26/09 1700	Received by: K Burden	Date/Time: 3/27/09 10:00	
Relinquished by:		Date/Time:	Received by:	Date/Time:	
Subcontract? (Y) or N If yes, where? EXPL. TO EMPIRICAL		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.1, 0.5, 0.6°C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab - Pink copy for customer

104

CTO-166
3 coolers

15599

108

CHAIN OF CUSTODY

Page 1 of 1

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166		GW - Ground water
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6		WW - Waste water
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		SW - Surface water
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		SO - Soil/Sediment
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N		TB - Trip Blank
Sampler's Name: P. Murphy, M. Ost, C. Bennett	Are high concentrations expected? Y or N? If yes, which ID(s)?		RI - Rinsate
			WP - Wipe
			O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846	Metals ILMO5.3*	F Metals ILMO5.3*	Explo/PETN/1,3,5-DNA 8330	Expl. Sub	pH / Sample Info (Lab Use): Metals	F. Metals
0903136-01 (0903137-01)	YS06-GW01A-0309	3/23/09	1230	GW	21	9		6				9	3	3	6	0903141-01	<2	<2
0903136-02 (0903137-02)	YS06-GW01-0309	3/23/09	1205	GW	7	3		2				3	1	1	2	-02	<2	<2
0903136-03 (0903137-03)	YS06-GW01P-0309	3/23/09	1210	GW	7	3		2				3	1	1	2	-03	<2	<2
0903136-06	YS06-TB01-032309	3/23/09	1335	TB	3	3						3 (2)						
0903136-04 (0903137-04)	YS06-EB01-032309	3/23/09	1335	GW	7	3		2				3	1	1	2	0903141-04	<2	<2
0903136-05 (0903137-05)	YS06-EB02-032309	3/23/09	1330	GW	7	3		2				3	1	1	2	-05	<2	<2

Residual Chlorine Present?
No ✓
Yes ___

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain: (1) one trip blank broken in cooler

Cyanide samples checked for sulfide & chlorine? Y or N (NA)
625 & Phenol samples checked for chlorine? Y or N (NA)
608 samples checked for pH between 5.0-9.0? Y or N (NA)

Comments

Run QA/QC on GW01A (MS/MSD)
only (2) two trip blanks (1) Trip Blank has smaller than pea size air bubble
(KS) 3/24/09

Sample Custody

Relinquished by: [signature]	Date/Time: 3/23/09 1600	Received by: [signature]	Date/Time: 3/24/09 1030
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract (Y) or N If yes, where? Expl. 8330/PETN/3,5 DNA to Empirical (KS) 3/24/09	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.3, 1.3, 0.3 °C

Samples stored 60 days after date of report mailed at no extra charge.

White & Yellow copy to lab - Pink copy for customer

105

CTO-166
3 coolers

15601

109

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CHAIN OF CUSTODY

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Courier
Airbill No.
Sampling Complete? Y or N

AL

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Robetcha Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40ml	Metals ILM05.3 PL	Filtered Metals ILM05.3 PL	Explo (PETN/3,5-DNA 8330)	Expl.s/s	pH/Sample Info (Lab Use)
0903136-13	YS06-TB01-032409	3/24/09	0830	TB	3	3						3					metals 3 3.25.09
0903136-06 / 0903137-06	YS06-GW02-0309	3/24/09	1030	GW	7	3		2				3	1	1	2	0903141-06	2 2 2
0903136-07 / 0903137-07	YS06-EB01-032409	3/24/09	1215	GW	7	3		2				3	1	1	2	0903141-07	2 2 2
0903136-04 / 0903137-08	YS06-EB02-032409	3/24/09	1220	GW	7	3		2				3	1	1	2	0903141-08	2 2 2
0903136-09 / 0903137-09	YS06-GW11-0309	3/24/09	0940	GW	7	3		2				3	1	1	2	0903141-09	2 2 2
0903136-11 / 0903137-10	YS06-GW10-0309	3/24/09	1335	GW	7	3		2				3	1	1	2	0903141-10	2 2 2
0903136-12 / 0903137-11	YS06-GW10A-0309	3/24/09	1515	GW	7	3		2				3	1	1	2	0903141-11	2 2 2

Residual Chlorine Present? Yes ____ No ✓

One AL for each YS06-EB01-032409 & YS06-GW10-0309 were broken upon receipt. 3.25.09

Lab Use Only

Sample Unpacked By: C) - Rdp
Sample Order Entry By:
Samples Received in Good Condition? Y or (N)
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Metals were field filtered
2-40ml for TB have smaller than pea size air bubble & 1-40ml TB has larger than pea size air bubble 3.25.09

Sample Custody

Relinquished by:	Date/Time: 3/24/09 1700	Received by: C) - Rdp	Date/Time: 3.25.09 1025
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.6°C, 1.2°C, 1.1°C

Samples stored 60 days after date report mailed at no extra charge.

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CTO-166
2 coolers

15595

110

CHAIN OF CUSTODY

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846	Metals ILMO5.3	F Metals ILMO5.3	Expl/PETN/1,3,5-DNB 8330	Explosive Sub	pH / Sample Info (Lab Use): Metals	FM
~~0903134-11~~ 0903137-12	YS06-EB01-032509	3/25/09	1415	GW	~~7~~ 3	3		2				3	1	1	2	0903141-12	<2	<2
~~0903135-13~~ 0903137-13	YS06-EB02-032509	3/25/09	1620	GW	7	3		2				3	1	1	2	0903141-13	<2	<2
0903136-19	YS06-TB01-032509	3/25/09	1630	TB	3	3						3				~~0903141-14~~ JK 3.26.09		
~~0903136-16~~ 0903137-14	YS06-GW03-0309	3/25/09	1040	GW	7	3		2				3	1	1	2	0903141-14	<2	<2
~~0903136-17~~ 0903137-15	YS06-GW09-0309	3/25/09	1145	GW	7	3		2				3	1	1	2	0903141-15	<2	<2
~~0903134-18~~ 0903137-16	YS06-GW09A-0309	3/25/09	1515	GW	7	3		2				3	1	1	2	0903141-16	<2	<2

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only	
Sample Unpacked By: CJ-RdP	Cyanide samples checked for sulfide & chlorine? Y or NA
Sample Order Entry By: CJ-RdP	625 & Phenol samples checked for chlorine? Y or NA
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or NA
If no, explain:	

Comments:
Metals were Field Filtered
3-40 ml for TB have pea size air bubbles.
1-40 ml for GW09 & GW09A have smaller than ~~the~~ pea size air bubbles. JK 3.26.09

Sample Custody			
Relinquished by:	Date/Time: 3/25/09 1800	Received by: CJ-RdP	Date/Time: 3.26.09 1026
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? (Y) or N If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 1.1°C, 0.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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Data Completeness

The data package was received complete and intact. Resubmissions were require to correct the case narrative—incorrect cooler temps. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/23-26/09
Received Date: 03/24-27/09
Analysis Dates: 03/31-04/02/09

Cooler Temps: 0.1-1.3°C

All holding time requirements were met. All sample vials for YS06-TB01-032409 and YS06-TB01-032509 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS06-TB01-032309, YS06-TB01-032409 and YS06-TB01-032509- trip blanks; YS06-EB01-032309, YS06-EB02-032309, YS06-EB01-032409, YS06-EB02-032409, YS06-EB01-032509 and YS06-EB02-032509- equipment blanks; YS06-FB01-032609- field blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHY	chloromethane	0.13J ug/L	0.50 ug/L	0.65
VBLKIB	chloromethane	0.17J	0.5	0.85
	acetone	0.16J	2.5	1.6
VBLKHV	chloromethane	0.16J	0.5	0.8
YS06-TB01-032309	chloromethane	0.25J	0.5	1.25
	acetone	1.4J	2.5	14
	2-hexanone	0.63J	0.5	3.15
YS06-TB01-032409	chloromethane	0.19J	0.5	0.95
	acetone	4.6	2.5	46
YS06-TB01-032509	chloromethane	0.22J	0.5	1.1
	acetone	1.3J	2.5	13
	toluene	0.46J	0.5	2.3
	1,2,4-trichlorobenzene	0.13J	0.5	0.65
YS06-EB01-032309	chloromethane	0.42J	0.5	2.1
	acetone	13	2.5	130
	methyl acetate	0.12J	0.5	0.6
	methylene chloride	3.1	0.5	31
	2-butanone	3.2	0.5	32
	chloroform	0.23J	0.5	1.15
	toluene	0.98	0.5	4.9
YS06-EB02-032309	chloromethane	0.7	0.5	3.5
	acetone	7.6	2.5	76
	methyl acetate	0.12J	0.5	0.6
	methylene chloride	5.6	0.5	56
	2-butanone	4.9	0.5	49
	chloroform	0.41J	0.5	2.05
	toluene	1.7	0.5	8.5
	chlorobenzene	0.14J	0.5	0.7
YS06-EB01-032409	chloromethane	1.1	0.5	5.5
	bromomethane	0.58	0.5	2.9
	acetone	5.2	2.5	52
	methyl acetate	0.17J	0.5	0.85
	methylene chloride	3.5	0.5	35
	2-butanone	11	0.5	110
	chloroform	0.27J	0.5	1.35
	toluene	1.0	0.5	5
YS06-EB02-032409	chloromethane	0.24J	0.5	1.2
	acetone	6.2	2.5	62
	methylene chloride	3.8	0.5	38
	2-butanone	2.5	0.5	25
	chloroform	0.26J	0.5	1.3
	toluene	1.0	0.5	5
YS06-EB01-032509	chloromethane	0.29J	0.5	1.45
	acetone	36	2.5	360

Blank ID	Compound	Concentration	Reporting Limit	Action Level
	methylene chloride	1.3	0.5	13
	2-butanone	5.4	0.5	54
	toluene	0.28J	0.5	1.4
YS06-EB02-032509	chloromethane	0.2J	0.5	1.0
	acetone	10	2.5	100
	methylene chloride	6.7	0.5	67
	2-butanone	3.3	0.5	33
	chloroform	0.48J	0.5	2.4
	toluene	0.45J	0.5	2.25
YS06-FB01-032609	chloromethane	0.3J	0.5	1.5
	acetone	3.2	2.5	32
	methylene chloride	7.5	0.5	75
	chloroform	0.52	0.5	2.6
	toluene	1.8	0.5	9
	chlorobenzene	0.13J	0.5	0.65

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all field samples	chloromethane	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309	acetone	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS06-GW01A-0309—several high recoveries however no qualifications required.

Field Duplicate Sample

A field duplicate was submitted for sample YS06-GW01-0309—no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Masciandaro Date: 5/31/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA

All samples

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000
Chloromethane	AVRG		0.27044445	12.062	15.000
Vinyl Chloride	AVRG		0.23003478	8.624	30.000
Bromomethane	AVRG		0.15750282	9.483	15.000
Chloroethane	AVRG		0.09293606	4.050	15.000
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000
Carbon disulfide	AVRG		1.08532070	9.621	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000
Acetone	AVRG		0.04053702	10.407	15.000
Methyl acetate	AVRG		0.26289378	2.681	15.000
Methylene Chloride	AVRG		0.27597997	5.241	15.000
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000
-butanone	AVRG		0.05249255	6.112	15.000
Chloroform	AVRG		0.50756846	6.234	30.000
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000
Benzene	AVRG		1.00716400	6.418	15.000
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000
Trichloroethene	AVRG		0.33002699	6.711	15.000
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000
Bromodichloromethane	AVRG		0.33298211	7.620	15.000
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000
Toluene	AVRG		0.93480306	5.691	30.000
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000
Tetrachloroethene	AVRG		0.31078865	10.185	15.000
2-hexanone	AVRG		0.10893166	9.712	15.000
Dibromochloromethane	AVRG		0.31932787	6.449	15.000
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000
Chlorobenzene	AVRG		0.95964278	5.742	15.000
Ethylbenzene	AVRG		0.48273954	9.366	30.000
m,p-Xylene	AVRG		0.59028287	9.153	15.000
o-Xylene	AVRG		0.56958706	7.286	15.000
Styrene	AVRG		0.93611935	7.857	15.000
Bromoform	AVRG		0.16353005	7.565	15.000
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9C31001-TUN171 BFB Injection Date: 03/31/09

Instrument ID: 5972HP71 BFB Injection Time: 0943

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	44.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.6
175	5.0 - 9.0% of mass 174	6.5 (7.8)1
176	95.0 - 101.0% of mass 174	79.6 (96.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C31001-CCV	9C31001-CCV1R7	03/31/09	1111
02	VBLKHV	9033102-BLK	9033102-BLK171	03/31/09	1147
03	VHVLCS	9033102-BS1	9033102-BS171	03/31/09	1223
04	VHVLCSD	9033102-BSD	9033102-BSD171	03/31/09	1251
05	YS06-TB01-032309	0903136-06	0903136-0671	03/31/09	1858
06	YS06-GW01A-0309	0903136-01	0903136-0171	03/31/09	1927
07	YS06-GW01-0309	0903136-02	0903136-0271	03/31/09	1955
08	YS06-GW01P-0309	0903136-03	0903136-0371	03/31/09	2023
09	YS06-EB01-032309	0903136-04	0903136-0471	03/31/09	2051
10	YS06-EB02-032309	0903136-05	0903136-0571	03/31/09	2120
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date: 03/31/09 Time: 1111

Lab File ID: 9C31001-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4670012	0.4670012	0.001	26.32	90.00	AVRG	J
Chloromethane	0.2704400	0.1943766	0.1943766	0.1	-28.12	90.00	AVRG	
Vinyl Chloride	0.2300400	0.2473023	0.2473023	0.001	7.50	20.00	AVRG	
Bromomethane	0.1575000	0.1358013	0.1358013	0.001	-13.78	90.00	AVRG	
Chloroethane	0.0929400	0.0897082	0.0897082	0.001	-3.48	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3685704	0.3685704	0.001	22.00	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3411470	0.3411470	0.001	15.90	20.00	AVRG	
Carbon disulfide	1.0853200	1.1750394	1.1750394	0.001	8.27	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.2020064	0.2020064	0.001	33.68	90.00	AVRG	
Acetone	0.0405400	0.0363159	0.0363159	0.001	-10.42	90.00	AVRG	L/R
Methyl acetate	0.2628900	0.2223396	0.2223396	0.001	-15.42	90.00	AVRG	
Methylene Chloride	0.2759800	0.2831008	0.2831008	0.001	2.58	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3477114	0.3477114	0.001	12.60	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2230815	0.2230815	0.001	-17.11	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5484070	0.5484070	0.1	5.60	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3202205	0.3202205	0.001	6.23	90.00	AVRG	
2-butanone	0.0524900	0.0435348	0.0435348	0.001	-17.06	90.00	AVRG	L/R
Chloroform	0.5075700	0.5651640	0.5651640	0.001	11.35	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4624428	0.4624428	0.001	17.80	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3330174	0.3330174	0.001	27.52	90.00	AVRG	
Benzene	1.0071600	1.0800897	1.0800897	0.001	7.24	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2821877	0.2821877	0.001	6.01	90.00	AVRG	
Trichloroethene	0.3300200	0.3800479	0.3800479	0.001	15.16	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2489088	0.2489088	0.001	0.75	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3624158	0.3624158	0.001	8.84	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3381172	0.3381172	0.001	3.80	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1387438	0.1387438	0.001	-22.06	90.00	AVRG	
Toluene	0.9348000	0.9763982	0.9763982	0.001	4.45	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3391677	0.3391677	0.001	-7.82	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2100936	0.2100936	0.001	-9.98	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3837095	0.3837095	0.001	23.46	90.00	AVRG	
2-hexanone	0.1089300	0.0818447	0.0818447	0.001	-24.86	90.00	AVRG	J
Dibromochloromethane	0.3193300	0.3230499	0.3230499	0.001	1.16	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2244259	0.2244259	0.001	-4.60	90.00	AVRG	
Chlorobenzene	0.9596400	1.0352672	1.0352672	0.3	7.88	90.00	AVRG	
Ethylbenzene	0.4827400	0.5483445	0.5483445	0.001	13.59	20.00	AVRG	
m,p-Xylene	0.5902800	0.6843277	0.6843277	0.001	15.93	90.00	AVRG	
o-Xylene	0.5695900	0.6417057	0.6417057	0.001	12.66	90.00	AVRG	
Styrene	0.9361200	1.0300525	1.0300525	0.001	10.03	90.00	AVRG	
Bromoform	0.1635300	0.1653898	0.1653898	0.1	1.14	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.8279037	1.8279037	0.001	22.75	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.5861500	0.5036221	0.5036221	0.3	-14.08	90.00	AVRG	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9D01001-TUN171 BFB Injection Date: 04/01/09

Instrument ID: 5972HP71 BFB Injection Time: 1036

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.8
75	30.0 - 60.0% of mass 95	44.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	80.5
175	5.0 - 9.0% of mass 174	6.1 (7.6)1
176	95.0 - 101.0% of mass 174	78.8 (97.9)1
177	5.0 - 9.0% of mass 176	5.2 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D01001-CCV	9D01001-CCV1R7	04/01/09	1146
02	VBLKHY	9040104-BLK	9040104-BLK1R7	04/01/09	1258
03	VHYLCS	9040104-BSD	9040104-BSR171	04/01/09	1404
04	YS06-GW02-0309	0903136-07	0903136-0771	04/01/09	1442
05	YS06-EB01-032409	0903136-08	0903136-0871	04/01/09	1510
06	YS06-EB02-032409	0903136-09	0903136-0971	04/01/09	1539
07	YS06-GW11-0309	0903136-10	0903136-1071	04/01/09	1607
08	YS06-GW10-0309	0903136-11	0903136-1171	04/01/09	1635
09	YS06-GW10A-0309	0903136-12	0903136-1271	04/01/09	1703
10	YS06-TB01-032409	0903136-13	0903136-1371	04/01/09	1732
11	YS06-EB01-032509	0903136-14	0903136-1471	04/01/09	1800
12	YS06-EB02-032509	0903136-15	0903136-1571	04/01/09	1828
13	YS06-GW03-0309	0903136-16	0903136-1671	04/01/09	1856
14	YS06-GW09-0309	0903136-17	0903136-1771	04/01/09	1924
15	YS06-GW09A-0309	0903136-18	0903136-1871	04/01/09	1952
16	YS06-GW07-0309	0903136-20	0903136-2071	04/01/09	2049
17	YS06-GW05B-0309	0903136-21	0903136-2171	04/01/09	2117
18	YS06-GW01A-0309MS	9040104-MS1	9040104-MS171	04/01/09	2145
19	YS06-GW01A-0309MSD	9040104-MSD	9040104-MSD171	04/01/09	2214
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FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date: 04/01/09 Time: 1146

Lab File ID: 9D01001-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4226318	0.4226318	0.001	14.32	90.00	AVRG	
Chloromethane	0.2704400	0.1850019	0.1850019	0.1	-31.59	90.00	AVRG	J
Vinyl Chloride	0.2300400	0.2265492	0.2265492	0.001	-1.52	20.00	AVRG	
Bromomethane	0.1575000	0.1342778	0.1342778	0.001	-14.74	90.00	AVRG	
Chloroethane	0.0929400	0.0900631	0.0900631	0.001	-3.10	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3403234	0.3403234	0.001	12.65	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3238719	0.3238719	0.001	10.03	20.00	AVRG	
Carbon disulfide	1.0853200	1.1526931	1.1526931	0.001	6.21	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1854370	0.1854370	0.001	22.72	90.00	AVRG	
Acetone	0.0405400	0.0348869	0.0348869	0.001	-13.94	90.00	AVRG	L/R
Methyl acetate	0.2628900	0.2228346	0.2228346	0.001	-15.24	90.00	AVRG	
Methylene Chloride	0.2759800	0.2780925	0.2780925	0.001	0.76	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3301759	0.3301759	0.001	6.92	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2529217	0.2529217	0.001	-6.02	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5329915	0.5329915	0.1	2.63	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3103939	0.3103939	0.001	2.97	90.00	AVRG	
2-butanone	0.0524900	0.0443878	0.0443878	0.001	-15.44	90.00	AVRG	L/R
Chloroform	0.5075700	0.5449723	0.5449723	0.001	7.37	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4399249	0.4399249	0.001	12.06	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3287206	0.3287206	0.001	25.88	90.00	AVRG	
Benzene	1.0071600	1.0154688	1.0154688	0.001	0.82	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2809384	0.2809384	0.001	5.54	90.00	AVRG	
Trichloroethene	0.3300200	0.3582421	0.3582421	0.001	8.55	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2387431	0.2387431	0.001	-3.37	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3522757	0.3522757	0.001	5.79	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3345910	0.3345910	0.001	2.71	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1326634	0.1326634	0.001	-25.47	90.00	AVRG	
Toluene	0.9348000	0.8897881	0.8897881	0.001	-4.82	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3456226	0.3456226	0.001	-6.06	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2051640	0.2051640	0.001	-12.09	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3375510	0.3375510	0.001	8.61	90.00	AVRG	
2-hexanone	0.1089300	0.0800537	0.0800537	0.001	-26.51	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3167813	0.3167813	0.001	-0.80	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2171359	0.2171359	0.001	-7.70	90.00	AVRG	
Chlorobenzene	0.9596400	0.9535007	0.9535007	0.3	-0.64	90.00	AVRG	
Ethylbenzene	0.4827400	0.4966949	0.4966949	0.001	2.89	20.00	AVRG	
m,p-Xylene	0.5902800	0.6169091	0.6169091	0.001	4.51	90.00	AVRG	
o-Xylene	0.5695900	0.5772188	0.5772188	0.001	1.34	90.00	AVRG	
Styrene	0.9361200	0.9320948	0.9320948	0.001	-0.43	90.00	AVRG	
Bromoform	0.1635300	0.1631259	0.1631259	0.1	-0.25	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.5436520	1.5436520	0.001	3.66	90.00	AVRG	
1,2,2-Tetrachloroethane	0.5861500	0.5203829	0.5203829	0.3	-11.22	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9D02004-TUN171 BFB Injection Date: 04/02/09

Instrument ID: 5972HP71 BFB Injection Time: 1135

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.1
75	30.0 - 60.0% of mass 95	43.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.4
175	5.0 - 9.0% of mass 174	6.0 (7.2)1
176	95.0 - 101.0% of mass 174	81.2 (98.5)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D02004-CCV	9D02004-CCV171	04/02/09	1208
02	VBLKIB	9040218-BLK	9040218-BLK171	04/02/09	1248
03	VIBLCS	9040218-BS1	9040218-BS171	04/02/09	1330
04	YS06-TB01-032509	0903136-19	0903136-19R71	04/02/09	1426
05	YS06-GW05BP-0309	0903136-22	0903136-2271	04/02/09	1454
06	YS06-EB01-032609	0903136-23	0903136-2371	04/02/09	1523
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date: 04/02/09 Time: 1208

Lab File ID: 9D02004-CCV171 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4424875	0.4424875	0.001	19.69	90.00	AVRG	
Chloromethane	0.2704400	0.1733480	0.1733480	0.1	-35.90	90.00	AVRG	J
Vinyl Chloride	0.2300400	0.2255233	0.2255233	0.001	-1.96	20.00	AVRG	
Bromomethane	0.1575000	0.1382329	0.1382329	0.001	-12.23	90.00	AVRG	
Chloroethane	0.0929400	0.0903022	0.0903022	0.001	-2.84	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3414649	0.3414649	0.001	13.03	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3156654	0.3156654	0.001	7.24	20.00	AVRG	
Carbon disulfide	1.0853200	1.0970883	1.0970883	0.001	1.08	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1904663	0.1904663	0.001	26.04	90.00	AVRG	L/R
Acetone	0.0405400	0.0354853	0.0354853	0.001	-12.47	90.00	AVRG	
Methyl acetate	0.2628900	0.2360476	0.2360476	0.001	-10.21	90.00	AVRG	
Methylene Chloride	0.2759800	0.2885451	0.2885451	0.001	4.55	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3352972	0.3352972	0.001	8.58	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2936322	0.2936322	0.001	9.10	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5328117	0.5328117	0.1	2.60	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3139684	0.3139684	0.001	4.15	90.00	AVRG	
2-butanone	0.0524900	0.0487573	0.0487573	0.001	-7.11	90.00	AVRG	L/R
Chloroform	0.5075700	0.5714269	0.5714269	0.001	12.58	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4768581	0.4768581	0.001	21.47	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3557134	0.3557134	0.001	36.22	90.00	AVRG	
Benzene	1.0071600	1.0540424	1.0540424	0.001	4.65	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.3031299	0.3031299	0.001	13.88	90.00	AVRG	
Trichloroethene	0.3300200	0.3835301	0.3835301	0.001	16.21	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2488973	0.2488973	0.001	0.74	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3758235	0.3758235	0.001	12.87	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3146848	0.3146848	0.001	-3.40	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1488181	0.1488181	0.001	-16.40	90.00	AVRG	
Toluene	0.9348000	0.8917237	0.8917237	0.001	-4.61	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3147456	0.3147456	0.001	-14.46	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2121127	0.2121127	0.001	-9.11	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3479732	0.3479732	0.001	11.96	90.00	AVRG	
2-hexanone	0.1089300	0.0935930	0.0935930	0.001	-14.08	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3471573	0.3471573	0.001	8.71	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2352651	0.2352651	0.001	0.01	90.00	AVRG	
Chlorobenzene	0.9596400	0.9816287	0.9816287	0.3	2.29	90.00	AVRG	
Ethylbenzene	0.4827400	0.5030537	0.5030537	0.001	4.21	20.00	AVRG	
m,p-Xylene	0.5902800	0.6222704	0.6222704	0.001	5.42	90.00	AVRG	
o-Xylene	0.5695900	0.6063088	0.6063088	0.001	6.45	90.00	AVRG	
Styrene	0.9361200	0.9710050	0.9710050	0.001	3.73	90.00	AVRG	
Bromoform	0.1635300	0.1856201	0.1856201	0.1	13.51	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.6521141	1.6521141	0.001	10.94	90.00	AVRG	
1,2,2-Tetrachloroethane	0.5861500	0.5064483	0.5064483	0.3	-13.60	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKIB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9040218-BLK171 Lab Sample ID: 9040218-BLK1

Date Analyzed: 04/02/09 Time Analyzed: 1248

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

Chl Acetone

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VIBLCS	9040218-BS1	9040218-BS17	1330
02	YS06-TB01-032509	0903136-19	0903136-19R7	1426
B B 03	YS06-GW05BP-0309	0903136-22	0903136-2271	1454
04	YS06-EB01-032609	0903136-23	0903136-2371	1523
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COMMENTS: Chloromethane 0.17J (0.50)
acetone 1.6J (2.5)
1,2,4-trichlorobenzene 0.14J

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9040104-BLK1R71 Lab Sample ID: 9040104-BLK1

Date Analyzed: 04/01/09 Time Analyzed: 1258

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHYLCS	9040104-BSD1	9040104-BSR1	1404
B-02	YS06-GW02-0309	0903136-07	0903136-0771	1442
03	YS06-EB01-032409	0903136-08	0903136-0871	1510
04	YS06-EB02-032409	0903136-09	0903136-0971	1539
B-05	YS06-GW11-0309	0903136-10	0903136-1071	1607
B-06	YS06-GW10-0309	0903136-11	0903136-1171	1635
B-07	YS06-GW10A-0309	0903136-12	0903136-1271	1703
08	YS06-TB01-032409	0903136-13	0903136-1371	1732
09	YS06-EB01-032509	0903136-14	0903136-1471	1800
10	YS06-EB02-032509	0903136-15	0903136-1571	1828
B-11	YS06-GW03-0309	0903136-16	0903136-1671	1856
B-12	YS06-GW09-0309	0903136-17	0903136-1771	1924
B-13	YS06-GW09A-0309	0903136-18	0903136-1871	1952
B-14	YS06-GW07-0309	0903136-20	0903136-2071	2049
B-15	YS06-GW05B-0309	0903136-21	0903136-2171	2117
16	YS06-GW01A-0309MS	9040104-MS1	9040104-MS17	2145
17	YS06-GW01A-0309MSD	9040104-MSD1	9040104-MSD1	2214
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COMMENTS: Chloromethane 0.13J
Vinyl chloride 0.12J
Carbon tet 0.12J

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9033102-BLK171 Lab Sample ID: 9033102-BLK1

Date Analyzed: 03/31/09 Time Analyzed: 1147

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHVLCS	9033102-BS1	9033102-BS17	1223
02	VHVLCSD	9033102-BSD1	9033102-BSD1	1251
03	YS06-TB01-032309	0903136-06	0903136-0671	1858
04	YS06-GW01A-0309	0903136-01	0903136-0171	1927
05	YS06-GW01-0309	0903136-02	0903136-0271	1955
06	YS06-GW01P-0309	0903136-03	0903136-0371	2023
07	YS06-EB01-032309	0903136-04	0903136-0471	2051
08	YS06-EB02-032309	0903136-05	0903136-0571	2120
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COMMENTS: Chloromethane 0.16J ug/L (0.50)
1,2,4-trichlorobenzene 0.15J (0.50)

FORM IV VOA

DataQual **VOA**

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW01-0309
Duplicate Sample ID: YS06-GW01P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
vinyl chloride	4.1	3.9	5
chloroethane *	0.16		200
1,1-dichloroethene	5.3	6.1	14
trans-1,2-dichloroethene	3.3	3.6	9
1,1-dichloroethane	1.8	2	11
cis-1,2-dichloroethene	18	21	15
trichloroethene	13	14	7
1,2-dichloroethene (total)	21	24	13
			#DIV/0!
			#DIV/0!
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			#DIV/0!
			#DIV/0!
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			#DIV/0!
			#DIV/0!

COMMENTS: No qualifications required.

* result below the CRQL

Initial Calibration Date: 3/28/2009

RRF and %RSD Calculations:

Compound Name: chloromethane

Lab Value: 0.325

Area of Compound	830175
Area of Internal STD	510420
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.325

Compound Name: 4-methyl-2-pentanone

Lab Value: 8.34

RRF of STD 1	0.1549
RRF of STD 2	0.1775
RRF of STD 3	0.1925
RRF of STD 4	0.1895
RRF of STD 5	0.1757
Calculated % RSD	8.34

Continuing Calibration File ID: 4/2/2009

RRF and %D Calculations:

Compound Name: carbon disulfide

Lab Value: 1.097

Area of Compound	548215
Area of Internal STD	499700
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.097

Compound Name: benzene

Lab Value: 4.7

Average RRF	1.007
Calibration Check RRF	1.054
Calculated % D	-4.7

SAMPLE CALCULATION

Sample ID: YS06-EB01-032509
Standard ID: 4/1/2009
Compound: chloromethane
Concnetration: 0.29 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	7820		
Area of Internal STD	499408		
Conc. of Internal (ng)	125	250	
RRF of Compound	0.27044		
Dilution Factor	1	1	
Weight of Sample	NA		
Volume of Sample	25	NA	
% Moisture	NA	0.83	
Aliquot of sample	NA	NA	
Concentration	0.29	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	10.119	4.483	0.443
Standard	10.124	4.478	0.442

CompuChem

A division of Liberty Analytical Corporation
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Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
REVISED
SDG # 0903136
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS06-GW01A-0309, YS06-GW01-0309, YS06-GW01P-0309, YS06-EB01-032309, YS06-EB02-032309, YS06-TB01-032309, YS06-GW02-0309, YS06-EB01-032409, YS06-EB02-032409, YS06-GW11-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-TB01-032409, YS06-EB01-032509, YS06-EB02-032509, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-TB01-032509, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309 AND YS06-EB01-032609

The 23 aqueous samples listed above were received intact, refrigerated between 0.1°C and 1.3°C, with proper documentation, in sealed shipping containers, on March 24, 25, 26 and 27, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903136 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in sixteen/23 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9C28002-CAL171, 9C28002-CAL271 and 9C28002-CAL471, process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS06-GW01A-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 6, 2009

DataQual ES

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "DataQual" <dataqual@charter.net>
Cc: <Rebekha.Shaw@CH2M.com>; "Jacqueline Cleveland" <cleve137@charter.net>
Sent: Monday, June 01, 2009 1:57 PM
Attach: 0903184 VOC REVISED NARRATIVE.pdf; 0903136 VOC REVISED NARRATIVE.pdf
Subject: RE: cooler temp question

Hi Laura,

You are correct, the temperatures on the two Voc case narratives are not correct. From what I can tell, the reviewer must have accidently left the temps in from the previous case narrative she did in the template.

I asked her to please revise them. The revised case narratives are attached.

I apologize for the oversight.

Have a great day!

Cathy

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: DataQual [mailto:dataqual@charter.net]
Sent: Monday, June 01, 2009 10:59 AM
To: Cathy Dover
Cc: Rebekha.Shaw@CH2M.com; Jacqueline Cleveland
Subject: cooler temp question

Dear Cathy,

According to the case narrative for SDG#0903184 the coolers were received at 0.1-5.2 degrees C; however according to the COC the coolers were received at 0.4 and 0.7--could you please check that I am not missing something in the data package and if the COC is correct please change the case narrative. I have the same question with the case narrative for SDG#0903136, it lists temps at 0.1-0.8 and the COC lists the samples at 0.1-1.3C. Possibly I am not understanding the wording on the case narrative or is this also incorrect?

Thank you,
Laura

This SDG contains dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/23-3/26
Received Date: 3/24-3/27
Prep. Dates: no prep – dissolved; 4/1-4/2 ICP total; 4/1 Hg total, 3/30 Hg dissolved
Analysis Dates: 4/9, 4/10 dissolved ICP, 4/10&4/15 total ICP; 4/2 Hg total, 3/31 Hg dissolved

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW1 – total metals	beryllium	0.542B ug/L	2.71 ug/L	B	BL
PBW2 – total metals	antimony	2.662B ug/L	13.3 ug/L	B	BL
	chromium	1.253B ug/L	6.265 ug/L	B	BL
	copper	0.969B ug/L	4.845 ug/L	B	BL
	nickel	0.847B ug/L	4.235 ug/L	B	BL
	vanadium	0.669B ug/L	3.345 ug/L	B	BL
	beryllium	-0.672B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-1.953B	≤ 10X MDL (16 ug/L)	L/UL	BL
ICB/CCB Run #2	antimony	3.3B ug/L	16.5 ug/L	B	BL
	chromium	2.0B ug/L	10 ug/L	B	BL
	copper	1.9B ug/L	9.5 ug/L	B	BL
	nickel	0.9B ug/L	4.5 ug/L	B	BL
	vanadium	0.9B ug/L	4.5 ug/L	B	BL
	beryllium	-0.9B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-2.0B	≤ 10X MDL (16 ug/L)	L/UL	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS06-GW10-0309	beryllium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	lead	-2.018B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	copper	-1.433B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	beryllium	0.647B ug/L	3.235 ug/L	B	BL
ICB/CCB – dissolved metals	nickel	1.0B ug/L	5.0 ug/L	B	BL
	selenium	2.3B ug/L	11.5 ug/L	B	BL
	vanadium	0.7B ug/L	3.5 ug/L	B	BL
	thallium	4.4B ug/L	22 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	lead	L/UL	BL
all dissolved metals field samples	copper	L/UL	BL
YS06-GW01-0309, YS06-GW11-0309	beryllium	B	BL
YS06-GW02-0309, YS06-GW03-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW03-0309, YS06-GW10-0309	selenium	B	BL
YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL
YS06-GW07-0309	thallium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS06-GW01A-0309 analyzed for total metals exhibited -compliant recovery for all analytes. No qualifications were required. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS06-GW01A-0309 analyzed for the ICP dissolved metals exhibited non-compliant recoveries for several analytes. Samples are flagged L/UL for As, Ba, Be, Pb, Ag, Tl & V. Samples are flagged L/R for Se. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable.
The MS/MSD pair analyzed for ammonia was acceptable.

SERIAL DILUTIONS

The serial dilution analyses of samples YS06-GW01A-0309 for total metals exhibited acceptable %Ds for all analytes.

The serial dilution analyses of samples YS06-GW01A-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (21.8%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Total Metals

Sample ID: YS06-GW01-0309 Duplicate Sample ID: YS06-GW01P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	72600	74400	2%
iron	23500	21600	8%
magnesium	7690	7580	1%
manganese	583	566	3%
sodium	9430	9310	1%

Comments: No qualifications were required.

Sample ID: YS06-GW05B-0309 Duplicate Sample ID: YS06-GW05BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1770	1690	5%
antimony	11.4	10	13%
calcium	114000	115000	1%
iron	3890	3540	9%
lead	3.9	4.6	16%
manganese	41	38.9	5%
sodium	8920	8850	1%

Comments: No qualifications were required.

Dissolved Metals

Sample ID: YS06-GW01-0309 Duplicate Sample ID: YS06-GW01P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
arsenic	13.3	12.4	7%
calcium	69200	69300	0%
iron	19900	19000	5%
magnesium	7980	7750	3%
manganese	551	533	3%
sodium	9400	9370	0%

Comments: No qualifications were required.

Sample ID: YS06-GW05B-0309 Duplicate Sample ID: YS06-GW05BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	112000	112000	0%
sodium	8290	8160	2%

Comments: No qualifications were required.

SAMPLE CALCULATION

Dissolved Metals
EPA SAMPLE ID: YS06-GW01-0409
COMPOUND: calcium
CONCENTRATION: 72600 ug/L
%Solids – na
50 ml
Raw Data result: 72601.71 ug/L
72601.71 ug/L * 0.05L/0.05L = 72601.71 ug/L

Total Metals
EPA SAMPLE ID: YS06-GW05B-0309
COMPOUND: arsenic
CONCENTRATION: 4.0B ug/L
%Solids – na
50 ml
Raw Data result: 4.003237 ug/L
4.003237 ug/L * 0.05L/0.05L = 4.003237 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JCleveland **Date:** 6/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903136

The indicated Sample Delivery Group (SDG) consisting of twenty (20) water samples was received into the laboratory information management system (LIMS) on March 24, 25, 26, and 27, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.3°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903136-01 ID YS06-GW01A-0309S and YS06-GW01A-0309SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903136-01 ID YS06-GW01A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903136-01 ID YS06-GW01A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
April 16, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER Hg & ICP Run #1

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.542	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-211.9	B	-211.0	B	-189.1	B	-185.5	B	-205.339	B	P
Chromium	-0.7	B	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	-1.8	B	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	1 0.100	U	2 0.100	U	3 0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	17.8	B	9.9	U	14.076	B	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

PBW - all but GW01A assoc

GW01 GW02

GW01P 11

10A

10

Flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U							P
Antimony			2.4	U							P
Arsenic			2.2	U							P
Barium			0.3	U							P
Beryllium			0.5	B	see PBW						P
Cadmium			0.6	U							P
Calcium			198.3	B	NQ						P
Chromium			0.7	U							P
Cobalt			-1.9	B	NQ						P
Copper			0.8	U							P
Iron			24.6	U							P
Lead			1.4	U							P
Magnesium			31.0	U	(5)		(6)				P
Manganese			0.4	U							P
Mercury			(4) -0.120	B	NQ	0.100	U	0.100	U		CV
Nickel			0.7	U							P
Potassium			15.2	B	NQ						P
Selenium			2.2	U							P
Silver			0.6	U							P
Sodium			159.5	U							P
Thallium			4.2	B	NQ						P
Vanadium			0.6	U							P
Zinc			5.2	U							P

Hg GW01A GW02
GW01 GW11
GW01P GW10
GW0 GW10A

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 7	C	2 8	C	3	C	Preparation Blank	C	M
Mercury			0.147	B	NO 0.100	U					CV

GW02
GW11
GW10
GW10A

GW03
GW09
GW09A
GW07
GW05B
GW05BP

only 1 out of 5 assoc showed neg cont.

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER ICP Run #2

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank PBW2	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	4.5	B	2.4	U	3.3	B	2.4	U	2.662	B	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.4	B	0.3	B	0.300	U	P
Beryllium	0.4	U	0.4	U	-0.9	B	-1.9	B	-0.672	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-200.3	B	-167.5	B	-148.5	B	-171.4	B	-209.976	B	P
Chromium	1.5	B	2.0	B	2.0	B	1.7	B	1.253	B	P
Cobalt	1.6	U	1.6	U	-2.0	B	-1.7	B	-1.953	B	P
Copper	1.0	B	1.1	B	1.9	B	2.3	B	0.969	B	P
Iron	24.8	B	34.9	B	42.0	B	36.4	B	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	47.2	B	63.8	B	40.8	B	31.000	U	P
Manganese	0.4	U	0.4	B	0.4	B	0.4	B	0.370	U	P
Nickel	1.0	B	0.7	B	0.9	B	0.8	B	0.847	B	P
Potassium	9.9	U	10.2	B	13.4	B	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	4.5	B	3.3	U	3.7	B	3.300	U	P
Vanadium	0.7	B	1.0	B	0.9	B	0.8	B	0.669	B	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

GW01A only

GW03
GW09
GW09A
GW07
GW05B
GW05BP
GW01A

Jacqueline Cleveland

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "Jacqueline Cleveland" <cleve137@charter.net>
Cc: <Rebekha.Shaw@CH2M.com>
Sent: Monday, June 15, 2009 12:20 PM
Attach: 0903136 MTL MISSING FORM1.pdf
Subject: RE: CH2M HILL CTO-166

Hey Jackie,

I have attached the missing metals form 1 for YS06-EB01-032609.

Sorry for the omission!

Have a great day!

Cathy

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: Jacqueline Cleveland [mailto:cleve137@charter.net]
Sent: Monday, June 15, 2009 1:00 PM
To: Cathy Dover
Subject: Re: CH2M HILL CTO-166

Thanks so much Cathy, I appreciate you getting back to me so quickly!

Jackie

> ----- Original Message -----
> **From:** Cathy Dover
> **To:** Jacqueline Cleveland
> **Sent:** Monday, June 15, 2009 11:45 AM
> **Subject:** RE: CH2M HILL CTO-166
>
> Hey Jackie,
>
> I was calling you to find out if it was a metals or VOC form 1, but received your e-mail right after I dialed your #.
>
> The reviewer will get me the form 1 ASAP.
>
> Cathy
>
> Cathy Dover
> Supervisor of Project Management
> Compuchem

501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: Jacqueline Cleveland [mailto:cleve137@charter.net]
Sent: Monday, June 15, 2009 12:40 PM
To: Cathy Dover
Subject: CH2M HILL CTO-166

Hi Cathy,

I just left you a voice mail about 1 missing sample form 1 in SDG 0903136. I don't have a form 1 for sample YS06-EB01-032609 (lab ID 0903136-23) for the total metals package. If you could e-mail this form 1 to me that would be great. It is in the EDD. It just looks like it got missed when the package was copied or something like that! I am trying to send these reports out today so as soon as possible would be greatly appreciated:)
Thanks.
Jackie

Jacqueline Cleveland

Vice-President

DQES, LLC

636-352-9391

cleve137@charter.net

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903137

The indicated Sample Delivery Group (SDG) consisting of twenty (20) dissolved water samples was received into the laboratory information management system (LIMS) on March 24, 25, 26, and 27, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.3°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903137-01 ID YS03-GW01A-0309S and YS03-GW01A-0309SD were inside control limits for the requested analytes except arsenic, lead, selenium, silver, and thallium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903137-01 ID YS03-GW01A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903137-01 ID YS03-GW01A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forster for Susan Bass

Susan W. Bass
Senior Chemist
April 14, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	B	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	1.3	B	1.0	B	0.647	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-219.7	B	-179.8	B	-201.5	B	-193.5	B	-223.648	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	-0.9	B	0.8	U	-1.4	B	-1.6	B	-1.433	B	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	-1.4	B	1.4	U	-2.018	B	P
Magnesium	31.0	U	33.8	B	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

NQ

see peak

NQ

NQ

non-detect.

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2 (5)	C	3 (6)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.6	B	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.9	B	1.0	B	0.5	B	See PBlk		P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-186.6	B	-209.4	B	-219.1	B	NQ		P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			-1.4	B	-1.4	B	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	-1.6	B	-1.8	B	See PBlk		P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U	0.100	U					CV
Nickel			1.1	B	0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			5.2	B	3.3	B	3.3	U			P
Vanadium			0.6	B	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

Non-assoc

GW01A
GW01
GW01P

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (7)	C	2 (8)	C	3 (9)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.1	B	3.7	B	2.5	B			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-220.8	B	-216.2	B	-214.6	B			P
Chromium			0.7	U	1.3	B	1.0	B			P
Cobalt			1.6	U	-1.9	B	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Nickel			0.7	U	0.7	B	1.0	B			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.3	B	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	3.3	U	4.4	B			P
Vanadium			0.6	U	0.7	B	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

NQ

NQ

NQ

No Quals

NQ

NQ

GW01A
GW01
GW01P

GW02
GW11
GW10
GW10A
GW03

GW09
GW09A
GW07
GW05B
GW05BP

✓ flag as noted in report

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-GW01A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Aluminum	75 - 125	1993.8200		379.1539		2000.00	80.7		P	
Antimony	75 - 125	494.7618		97.6272		500.00	79.4		P	NQ +/-1
Arsenic	75 - 125	41.8334		20.3373		40.00	53.7	N	P	J/UJ
Barium	75 - 125	1956.0760		387.1295		2000.00	78.4		P	
Beryllium	75 - 125	48.1145		9.0778		50.00	78.1		P	
Cadmium	75 - 125	48.5960		8.4612		50.00	80.3		P	
Chromium	75 - 125	192.8391		17.9528		200.00	87.4		P	
Cobalt	75 - 125	484.7636		88.8884		500.00	79.2		P	NQ +/-1%
Copper	75 - 125	252.6558		48.9937		250.00	81.5		P	
Iron	75 - 125	1305.4580		381.9856		1000.00	92.3		P	
Lead	75 - 125	19.2616		5.5113		20.00	68.8	N	P	J/UJ
Manganese	75 - 125	504.4893		49.4565		500.00	91.0		P	
Mercury	75 - 125	0.8190		0.1000	U	1.00	81.9		CV	
Nickel	75 - 125	489.5557		74.5112		500.00	83.0		P	
Selenium	75 - 125	10.7179		9.7745		10.00	9.4	N	P	J/R
Silver	75 - 125	44.7540		15.7158		50.00	58.1	N	P	J/UJ
Thallium	75 - 125	55.0781		21.8901		50.00	66.4	N	P	
Vanadium	75 - 125	479.8361		90.8096		500.00	77.8		P	
Zinc	75 - 125	497.5511		41.6948		500.00	91.2		P	

using QAPP 80-120 limit

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-GW01A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Aluminum	75 - 125	1982.0050		379.1539		2000.00	80.1		P	
Antimony	75 - 125	496.4791		97.6272		500.00	79.8		P	NQ +/- 1
Arsenic	75 - 125	41.2356		20.3373		40.00	52.2	N	P	J/UJ
Barium	75 - 125	1952.5970		387.1295		2000.00	78.3		P	
Beryllium	75 - 125	47.9340		9.0778		50.00	77.7		P	
Cadmium	75 - 125	48.8757		8.4612		50.00	80.8		P	
Chromium	75 - 125	192.7098		17.9528		200.00	87.4		P	
Cobalt	75 - 125	487.4893		88.8884		500.00	79.7		P	NQ +/- 1
Copper	75 - 125	253.7148		48.9937		250.00	81.9		P	
Iron	75 - 125	1304.2790		381.9856		1000.00	92.2		P	
Lead	75 - 125	18.3065		5.5113		20.00	64.0	N	P	J/UJ
Manganese	75 - 125	507.9515		49.4565		500.00	91.7		P	
Mercury	75 - 125	0.8090		0.1000	U	1.00	80.9		CV	
Nickel	75 - 125	487.3977		74.5112		500.00	82.6		P	
Selenium	75 - 125	9.9584		9.7745		10.00	1.8	N	P	J/R
Silver	75 - 125	44.8680		15.7158		50.00	58.3	N	P	J/UJ
Thallium	75 - 125	52.9896		21.8901		50.00	62.2	N	P	
Vanadium	75 - 125	478.5461		90.8096		500.00	77.5		P	
Zinc	75 - 125	499.8035		41.6948		500.00	91.6		P	

using QAPP 80-120 limit

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS06-GW01A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	379.15		358.92	B	5.3		P
Antimony	97.63		161.97		65.9		P
Arsenic	20.34		20.41	B	0.3		P
Barium	387.13		393.72	B	1.7		P
Beryllium	9.08		10.39	B	14.4		P
Cadmium	8.46		7.20	B	14.9		P
Calcium	69604.50		68114.45		2.1		P
Chromium	17.95		20.19	B	12.5		P
Cobalt	88.89		86.40		2.8		P
Copper	48.99		44.09		10.0		P
Iron	381.99		519.89		36.1		P
Lead	5.51		7.00	U	100.0		P
Magnesium	3688.52	B	3579.54	B	3.0		P
Manganese	49.46		50.48		2.1		P
Mercury	0.10	U	0.50	U			CV
Nickel	74.51		74.59	B	0.1		P
Potassium	4431.76	B	3466.11	B	21.8	E	P
Selenium	9.77		12.14	B	24.3		P
Silver	15.72		19.38	B	23.3		P
Sodium	17154.07		16438.38	B	4.2		P
Thallium	21.89		22.34	B	2.1		P
Vanadium	90.81		92.62	B	2.0		P
Zinc	41.69		48.93	B	17.4		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 0903184 & 0903186, CompuChem
NWS Yorktown CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903184 & 0903186. The data validation was performed in accordance with the SW-846 8260B for volatiles and SW-846 Method 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS03-GW24-0309	0903184-01	water	X	X	X
YS03-GW29-0309	0903184-02	water	X	X	X
YS03-FB01-033009	0903184-03	water	X	X	X
YS03-EB01-033009	0903184-04	water	X	X	X
YS03-TB01-033009	0903184-05	water	X		
YS03-GW19A-0409	0903184-06	water	X	X	X
YS25-EB01-040609	0903184-07	water	X	X	
YS03-FB01-040609	0903184-08	water	X	X	
YS03-TB01-040609	0903184-09	water	X		

The following quality control samples were provided with this SDG: sample YS03-TB01-033009 and YS03-TB01-040609-trip blanks; samples YS03-EB01-033009 and YS25-EB01-040609-equipment blanks; and samples YS03-FB01-033009 and YS03-FB01-040609-field blanks.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *

• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	*
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	NA
• Matrix Duplicate RPDs	NA
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	NA
• Identification/Quantitation	*
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total and Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The serial dilution analysis exhibited non-compliant %Ds in the dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the associated field samples.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were required for the VOA fraction. The case narrative that was submitted with the data package had the incorrect cooler temperatures listed. The laboratory was contacted and a corrected case narrative was submitted.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/30/09 & 04/06/09 and samples were received at the laboratory 03/31/09 & 04/07/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/28/09	acetone	0.0405	YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	L/R	ICL
CC 04/03/09	acetone	0.0407	YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	L/R	CCL
IC 04/10/09	2-butanone	0.0315	YS03-GW24-0309	L/R	ICL
CC 04/13/09	acetone 2-butanone	0.0249 0.0336	YS03-GW24-0309	L/R	CCL
IC 04/15/09	2-butanone	0.0367	YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	L/R	ICL
CC 04/16/09	2-butanone	0.0348	YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	L/R	CCL
	acetone	21.70		J	CCH

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDS	acetone	1.4J ug/L	2.5 ug/L	14 ug/L
VBLKIE	chloromethane	0.14J ug/L	0.5 ug/L	0.7 ug/L
	methylene chloride	0.25J	0.5	2.5
VBLKDS	acetone	1.4J ug/L	2.5 ug/L	14 ug/L

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS03-TB01-040609	methylene chloride	0.2J ug/L	0.5 ug/L	2 ug/L
	toluene	0.59	0.5	3
YS03-TB01-033009	chloromethane	0.17J	0.5	0.85
	acetone	2.8	2.5	28
	methylene chloride	0.19J	0.5	1.9
	toluene	0.48J	0.5	2.4
YS25-EB01-040609	acetone	8.1	2.5	81
	methylene chloride	0.76	0.5	7.6
	chloroform	0.4J	0.5	2
	toluene	0.16J	0.5	0.8
YS03-EB01-033009	chloromethane	0.22	0.5	1.1
	acetone	17	2.5	170
	methylene chloride	3	0.5	30
	2-butanone	2.7	2.5	27
	chloroform	0.2J	0.5	1
	toluene	0.36J	0.5	1.8
YS03-FB01-040609	acetone	22	2.5	220
	methylene chloride	0.86	0.5	8.6
	chloroform	0.47J	0.5	2.4
	toluene	0.18J	0.5	0.9
YS03-FB01-033109	chloromethane	0.17J	0.5	0.85
	acetone	9	2.5	90
	methylene chloride	1.3	0.5	13
	2-butanone	8.2	2.5	82
	chloroform	0.94	0.5	4.7
	toluene	1.6	0.5	8

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW19A-0409, YS03-GW24-0309, YS03-GW29-0309	acetone	B	BL
YS03-GW29-0309	methylene chloride	B	BL
YS03-GW29-0309	chloromethane	B	BL
YS03-GW29-0309	2-butanone	B	BL
YS03-GW29-0309	chloroform	B	BL
YS03-GW29-0309, YS03-GW19A-0409	toluene	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	8.306B ug/L	41.53 ug/L	B	BL
YS03-FB01-033009	vanadium	0.69B ug/L	3.45 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
YS03-GW29-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	chromium	1.527B ug/L	7.635 ug/L	B	BL
	copper	2.274B ug/L	11.37 ug/L	B	BL
	iron	37.885B ug/L	200.78 ug/L	B	BL
	vanadium	0.667B ug/L	3.335 ug/L	B	BL
	aluminum	-64.036B ug/L	≤ 10X MDL (534 ug/L)	L/UL	BL
	beryllium	-2.189B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
ICB	nickel	1.0B ug/L	5 ug/L	B	BL
	mercury	-0.103B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
YS03-EB01-033009	zinc	6.3B ug/L	31.5 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	chromium	B	BL
all dissolved metals field samples	copper	B	BL
YS03-GW24-0309, YS03-GW29-0309	iron	B	BL
YS03-GW24-0309, YS03-GW29-0309	vanadium	B	BL
YS03-GW24-0309, YS03-GW29-0309	aluminum	L/UL	BL
all dissolved metals field samples	beryllium	L/UL	BL
YS03-GW19A-0409, YS03-GW29-0309	nickel	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS03-GW24-0309	zinc	B	BL

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited a non-compliant %D for the analyte potassium in the dissolved metals analysis. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS03-GW24-0309	potassium	all dissolved metals field samples	20.5	J/UJ	SD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Reporting Limits

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. No validation action was required. Reporting limits (QAPP QLs) were met.

Total & Dissolved Metals (Instrument P4)

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	acetone	+/-	L/R	ICL
YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	acetone*	+/-	L/R	CCL
YS03-GW24-0309	2-butanone	+/-	L/R	ICL
YS03-GW24-0309	acetone 2-butanone*	+/-	L/R	CCL
YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	2-butanone	+/-	L/R	ICL
YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	2-butanone*	+/-	L/R	CCL
YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	acetone	+	J	CCH
YS03-GW19A-0409, YS03-GW24-0309, YS03-GW29-0309	acetone	+	B	BL
YS03-GW29-0309	methylene chloride	+	B	BL
YS03-GW29-0309	chloromethane	+	B	BL
YS03-GW29-0309	2-butanone	+	B	BL
YS03-GW29-0309	chloroform	+	B	BL
YS03-GW29-0309, YS03-GW19A-0409	toluene	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	antimony	+ up to action level	B	BL
YS03-GW29-0309	vanadium	+ up to action level	B	BL
all samples	all analytes	+B	J	

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all dissolved metals field samples	chromium	+ up to action level	B	BL
all dissolved metals field samples	copper	+ up to action level	B	BL
YS03-GW24-0309, YS03-GW29-0309	iron	+ up to action level	B	BL
YS03-GW24-0309, YS03-GW29-0309	vanadium	+ up to action level	B	BL
YS03-GW24-0309, YS03-GW29-0309	aluminum	+/- up to action level	L/UL	BL
all dissolved metals field samples	beryllium	+/- up to action level	L/UL	BL
YS03-GW19A-0409, YS03-GW29-0309	nickel	+ up to action level	B	BL
all dissolved metals field samples	mercury	+/- up to action level	L/UL	BL
YS03-GW24-0309	zinc	+ up to action level	B	BL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW24-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-01D391
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/13/09
Dilution Factor: 71.4

Soil Extract Volume: _____(uL)
Method Blank: 9041307-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	7.1	36	ND	U
74-87-3	Chloromethane	7.1	36	ND	U
75-01-4	Vinyl Chloride	7.1	36	1200	
74-83-9	Bromomethane	34	36	ND	U
75-00-3	Chloroethane	9.3	36	ND	U
75-69-4	Trichlorofluoromethane	7.1	36	ND	U
75-35-4	1,1-Dichloroethene	7.1	36	12	J
75-15-0	Carbon disulfide	7.1	36	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	11	36	ND	U
67-64-1	Acetone	82	180	96	~~J~~ B BL
79-20-9	Methyl acetate	7.1	36	ND	U
75-09-2	Methylene Chloride	7.1	36	ND	U
156-60-5	trans-1,2-Dichloroethene	7.1	36	8.8	J
1634-04-4	Methyl-tert-butyl ether	7.1	36	ND	U
75-34-3	1,1-Dichloroethane	7.1	36	8.2	J
156-59-2	cis-1,2-Dichloroethene	7.1	36	1400	
78-93-3	2-butanone	36	180	ND	~~U~~ R ICL
67-66-3	Chloroform	7.1	36	ND	U
71-55-6	1,1,1-Trichloroethane	7.1	36	ND	U
56-23-5	Carbon Tetrachloride	7.1	36	ND	U
71-43-2	Benzene	7.1	36	ND	U
107-06-2	1,2-Dichloroethane	7.1	36	ND	U
79-01-6	Trichloroethene	7.1	36	400	
78-87-5	1,2-Dichloropropane	7.1	36	ND	U
75-27-4	Bromodichloromethane	7.1	36	ND	U
10061-01-5	cis-1,3-Dichloropropene	7.1	36	ND	U
108-10-1	4-Methyl-2-pentanone	36	180	ND	U
108-88-3	Toluene	7.1	36	ND	U
10061-02-6	trans-1,3-Dichloropropene	7.1	36	ND	U
79-00-5	1,1,2-Trichloroethane	7.1	36	ND	U
127-18-4	Tetrachloroethene	7.9	36	ND	U
591-78-6	2-hexanone	36	180	ND	U
124-48-1	Dibromochloromethane	7.1	36	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 053109

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW24-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-01D391
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/13/09
Dilution Factor: 71.4

Soil Extract Volume: _____(uL)
Method Blank: 9041307-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	7.1	36	ND	U
108-90-7	Chlorobenzene	7.1	36	ND	U
100-41-4	Ethylbenzene	7.1	36	ND	U
108-38-3	m,p-Xylene	14	71	ND	U
95-47-6	o-Xylene	7.1	36	ND	U
100-42-5	Styrene	7.1	36	ND	U
75-25-2	Bromoform	11	36	ND	U
98-82-8	Isopropyl Benzene	7.1	36	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	8.6	36	ND	U
541-73-1	1,3-Dichlorobenzene	7.1	36	ND	U
106-46-7	1,4-Dichlorobenzene	7.1	36	ND	U
95-50-1	1,2-Dichlorobenzene	7.1	36	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	13	36	ND	U
120-82-1	1,2,4-Trichlorobenzene	9.3	36	ND	U
540-59-0	1,2-Dichloroethene (total)	7.1	36	1400	
1330-20-7	Xylene (total)	7.1	36	ND	U
110-82-7	Cyclohexane	7.1	36	ND	U
108-87-2	Methylcyclohexane	7.1	36	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 053109

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW29-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.27	~~UB~~ B, BL
75-01-4	Vinyl Chloride	0.10	0.5	0.24	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	0.27	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	25	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.27	~~UB~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.29	J
78-93-3	2-butanone	0.50	2.5	2.1	~~J~~ B BL
67-66-3	Chloroform	0.10	0.5	0.11	~~J~~ B BL
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.24	J
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.44	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 053109

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW29-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.59	
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.29	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WS 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	J~~B~~
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	9	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	1.3	~~B~~
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	8.2	
67-66-3	Chloroform	0.10	0.5	0.94	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	1.6	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05310

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-EB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.22	J~~B~~
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	17	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	3	~~B~~
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	2.7	
67-66-3	Chloroform	0.10	0.5	0.2	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.36	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

VM 033107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-EB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 05/21/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	J~~B~~
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.8	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.19	J~~B~~
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.48	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9040308-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

05310?

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW19A-0409

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-06R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	0.26	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	0.13	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.3	~~B~~ B, BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	6.5	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	3.1	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.32	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW19A-0409

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-06R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.19	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	6.4	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 053101

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS25-EB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0791
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	8.1	~~B~~ J CCH
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.76	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	0.4	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.16	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

05/04

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS25-EB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0791
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WM 05/07

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	22	~~UJ~~ CCH
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.86	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~UR~~ ICL
67-66-3	Chloroform	0.10	0.5	0.47	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.18	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05/6/09

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05/10/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0991
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	U
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.2	J
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.59	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05/10

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0991
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05310

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19A-0409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-06

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19300			P
7440-36-0	Antimony	11.4		B BL	P
7440-38-2	Arsenic	60.7			P
7440-39-3	Barium	101	~~B~~	J	P
7440-41-7	Beryllium	0.69	~~B~~	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	201000			P
7440-47-3	Chromium	123			P
7440-48-4	Cobalt	6.2			P
7440-50-8	Copper	25.2			P
7439-89-6	Iron	49600			P
7439-92-1	Lead	17.0			P
7439-95-4	Magnesium	8180			P
7439-96-5	Manganese	1320			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	32.4	~~B~~	J	P
7440-09-7	Potassium	8350			P
7782-49-2	Selenium	3.5	~~B~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	77.6			P
7440-66-6	Zinc	2780			P

JC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-01

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13000			P
7440-36-0	Antimony	12.1		B BL	P
7440-38-2	Arsenic	32.3			P
7440-39-3	Barium	132	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	336000			P
7440-47-3	Chromium	524			P
7440-48-4	Cobalt	10.9			P
7440-50-8	Copper	28.9			P
7439-89-6	Iron	36000			P
7439-92-1	Lead	13.7			P
7439-95-4	Magnesium	11500			P
7439-96-5	Manganese	523			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	250			P
7440-09-7	Potassium	7000			P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	17500			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	62.0			P
7440-66-6	Zinc	64.6			P

JLC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW29-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-02

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	369			P
7440-36-0	Antimony	8.2	~~B~~	B BL	P
7440-38-2	Arsenic	18.5			P
7440-39-3	Barium	17.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	72900			P
7440-47-3	Chromium	40.4			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.0	~~B~~	J	P
7439-89-6	Iron	1310			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2300	~~B~~	J	P
7439-96-5	Manganese	42.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	19.4	~~B~~	J	P
7440-09-7	Potassium	1340	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7180			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.2	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JAC 6/30/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-04

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	7.2	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.81	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	90.5	~~B~~	J	P
7440-47-3	Chromium	6.8	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	180			P
7439-92-1	Lead	1.8	~~B~~	J	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	2.4	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.7	~~B~~	J	P
7440-09-7	Potassium	22.0	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	506	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

YS03-EB01-040609

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS25-EB01-040609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-07

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	8.1	~~U~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.77	~~U~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.5	~~U~~	J	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	218	~~U~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-03

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	8.6	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	1.3	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	26.9	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.77	~~B~~	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	271	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.69	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-FB01-040609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-08

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	7.8	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	182	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/30/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-04

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	1.0	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.5	~~B~~	J	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.76	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	J	P
7440-09-7	Potassium	13.1	~~B~~	~~E~~ J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	5.9	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	6.3	~~B~~	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-03

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	1.0	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.1	~~B~~	J	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	4.6	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-05

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2040			P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	5.6	~~B~~	J	P
7440-39-3	Barium	35.2	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	77500			P
7440-47-3	Chromium	6.9	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	4.3	~~B~~	B BL	P
7439-89-6	Iron	1540			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	1500	~~B~~	J	P
7439-96-5	Manganese	448			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	2.6	~~B~~	B BL	P
7440-09-7	Potassium	2120	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5730			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	5.7	~~B~~	J	P
7440-66-6	Zinc	112			P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-01

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	~~U~~	UL BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	6.4	~~U~~	J	P
7440-39-3	Barium	67.0	~~U~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	217000			P
7440-47-3	Chromium	7.2	~~U~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.7	~~U~~	B BL	P
7439-89-6	Iron	107		B BL	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	8040			P
7439-96-5	Manganese	225			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	15.0	~~U~~	J	P
7440-09-7	Potassium	1720	~~U~~	EJ SD	P
7782-49-2	Selenium	2.9	~~U~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	17600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.0	~~U~~	B BL	P
7440-66-6	Zinc	9.0	~~U~~	B BL	P

JC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW29-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-02

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	~~U~~	UL BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	25.8			P
7440-39-3	Barium	17.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	78300			P
7440-47-3	Chromium	1.9	~~U~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.7	~~B~~	B BL	P
7439-89-6	Iron	171		B BL	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2380	~~B~~	J	P
7439-96-5	Manganese	40.7			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	2.3	~~U~~	B BL	P
7440-09-7	Potassium	1370	~~B~~	EJ SD	P
7782-49-2	Selenium	4.4	~~B~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7890			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.70	~~U~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 4/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166
1 cooler

15604

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs SW846	Metals ILM05.3 PL	F Metals ILM05.3 PL	Chloride, Sulfate 300.0 Alkalinity 310.1 250ml	MEE RSK-175	TOC 9060/LK					pH / Sample Info (Lab Use): Metals	F. Metals	TOC
0903184-03	YS03-FB01-033009	3/30/09	1520	GW	5	3		2				3	1	1								KZ	KZ	
0903184-04	YS03-EB01-033009	3/30/09	1725	GW	5	3		2				3	1	1								KZ	KZ	
0903184-05	YS03-TB01-033009	3/30/09	1730	TB	3	3						3												
0903184-01	YS03-GW24-0309	3/30/09	1430	GW	10	5		2	2			3	1	1	1 (540)	2	2	low volume filtered				KZ	KZ	KZ in Field
0903184-02	YS03-GW29-0309	3/30/09	1650	GW	10	5		2	2			3	1	1	1 (830)	2	2					KZ	KZ	KZ

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or N/A
625 & Phenol samples checked for chlorine? Y or N/A
608 samples checked for pH between 5.0-9.0? Y or N/A

Comments: Metals were field filtered

Sample Custody

Relinquished by:	Date/Time: 3/31/09 1900	Received by:	Date/Time: 3/31/09 1000
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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041

16111

Page 1 of 1

CTO 166 NWS Yorktown

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: CTO166 - NWS Yorktown
Address: 5700 Cleveland St Ste101	Sampling Location: Site 3/25
City: Va Beach State: VA Zip: 23462	Turnaround time: 28 cal day
Project Contact: R. Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 518 9666	Are aqueous samples field filtered for metals? Y or (N) * *Lab to filter, not preserved
Sampler's Name: M. Ost, F. Amyo	Are high concentrations expected? (Y) or N? If yes, which ID(s)? YS03-GW019A-High Turbidity

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection 2009 Date	Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOC (OLM04.3)	MEE (RSK175)	Metals (ILM05.3)	*Filt. Metals (ILM05.3)	Cl, Alk, Sulfate (300.0, 310.1)	TOC (9060) / (Lloyd Kahn)	Perchlorate (6850)		Perchlorate S/O	pH: Sample Info (Lab Use): Sulfide	TOC
0903184-05	YS03-GW019A-0409 **	4/6	1250	GW	10	5		1	2			X	X	X	X	X	X			—	6	<2
0903184-08	YS03-FB01-040609	4/6	1335	FB-O	3	3						X		X						—	<2	
0903184-09	YS03-TB01-040609	4/6	1345	TB	3	3						X	X							—		
⊛	YS25-GW02-0409	4/6	1515	GW	3	-												X	⊛	0904034-01		
⊛	YS25-GW02P-0409	4/6	1540	GW	1													X	⊛	| 02		
0903184-07	YS25-EB01-040609	4/6	1600	EB-O	10	5		1	2			X	X	X		X	X	X		|	<2	<2
								**	Should be: YS03-GW19A-0409													

Lab Use Only:
Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:
* Lab please Filter metals/not field Filt.
GW019A - High turbidity sample
MS/MSD YS25-GW02-0409

Sample Custody

Relinquished by:	Date/Time: 4/6/09 1700	Received by:	Date/Time: 4/7/09 0945
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? (Y) or N If yes, where? Perchlorate
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.7 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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042

WORK ORDER

Printed: 4/23/2009 4:14:36PM

0903184

COMPUCHEM

Client:	CH2M HILL, INC.	Project Manager:	Cathy Dover
Project:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	Project Number:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-305
SDG:	0903184 CASE:	Status:	Batched

Report To:
CH2M HILL, INC.
REBEKHA SHAW
5700 CLEVELAND STREET, SUITE 101
VIRGINIA BEACH, VA 23462
Phone: 757-671-8311
Fax: -

Invoice To:
CH2M HILL, INC.
ACCOUNTS PAYABLE
P.O. BOX 241329
DENVER, CO 80224
Phone :757-671-8311
Fax: -

Date Due: 04/27/2009 00:00 (20 day TAT)

Received By: Cathy Dover — Date Received: 04/07/2009 09:45

Logged In By: Cathy Dover — Date Logged In: 03/31/2009 12:43

J & B Flags?: YES	TICS?:NO	Spike Level: FULL Spike	Deliverable: Style 9	EDD Format30) CH2 SNEDD

DOD CRITERIA*LCS/LCSD FOR QC*TCL4 VOC 8260B 25ML*TAL METALS 6010/7471*IC 300=CHL/SO4*TOC 9060 QUAD--RPT. ALL 4 RESULTS ON FORMS + AVG. ON FORMS AND ONLY AVG. ON EDD*RSK175=MEE

Analysis	Due	TAT	Expires	Received	Comments
0903184-01 YS03-GW24-0309 [Water] Sampled 03/30/2009 14:30 Eastern					
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 14:30	03/31/2009 10:00	
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
IC 300.0 Sulfate	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
IC 300.0 Chloride	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
GC-RSK-175	04/27/2009 16:00	20	04/13/2009 14:30	03/31/2009 10:00	
ALKALINITY 310.2	04/27/2009 16:00	20	04/13/2009 14:30	03/31/2009 10:00	
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 14:30	03/31/2009 10:00	
0903184-02 YS03-GW29-0309 [Water] Sampled 03/30/2009 16:50 Eastern					
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 16:50	03/31/2009 10:00	
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
ALKALINITY 310.2	04/27/2009 16:00	20	04/13/2009 16:50	03/31/2009 10:00	
IC 300.0 Chloride	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
IC 300.0 Sulfate	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 16:50	03/31/2009 10:00	
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
GC-RSK-175	04/27/2009 16:00	20	04/13/2009 16:50	03/31/2009 10:00	

WORK ORDER

Printed: 4/23/2009 4:14:36PM

0903184

COMPUCHEM

Client: CH2M HILL, INC.
Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052
SDG: 0903184 CASE:

Project Manager: Cathy Dover
Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-305
Status: Reported

Analysis	Due	TAT	Expires	Comments
0903184-03 YS03-FB01-033009 [Water] Sampled 03/30/2009 15:20 Eastern				**FIELD BLK**
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 15:20	03/31/2009 10:00
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 15:20	03/31/2009 10:00
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 15:20	03/31/2009 10:00
0903184-04 YS03-EB01-033009 [Water] Sampled 03/30/2009 17:25 Eastern				**EQUIP. BLK**
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 17:25	03/31/2009 10:00
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 17:25	03/31/2009 10:00
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 17:25	03/31/2009 10:00
0903184-05 YS03-TB01-033009 [Water] Sampled 03/30/2009 17:30 Eastern				**TRIP BLK**
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 17:30	03/31/2009 10:00
0903184-06 YS03-GW19A-0409 [Water] Sampled 04/06/2009 12:50 Eastern				
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
6010B METALS TAL	04/27/2009 16:00	20	10/03/2009 12:50	04/07/2009 09:45
7470A/7471A Mercury	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
ALKALINITY 310.2	04/27/2009 16:00	20	04/20/2009 12:50	04/07/2009 09:45
GC-RSK-175	04/27/2009 16:00	20	04/20/2009 12:50	04/07/2009 09:45
IC 300.0 Sulfate	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 12:50	04/07/2009 09:45
IC 300.0 Chloride	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
0903184-07 YS25-EB01-040609 [Water] Sampled 04/06/2009 16:00 Eastern				**EQUIP.BLK**
6010B METALS TAL	04/27/2009 16:00	20	10/03/2009 16:00	04/07/2009 09:45
ALKALINITY 310.2	04/27/2009 16:00	20	04/20/2009 16:00	04/07/2009 09:45
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 16:00	04/07/2009 09:45
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
IC 300.0 Sulfate	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
IC 300.0 Chloride	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
GC-RSK-175	04/27/2009 16:00	20	04/20/2009 16:00	04/07/2009 09:45
7470A/7471A Mercury	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
0903184-08 YS03-FB01-040609 [Water] Sampled 04/06/2009 13:35 Eastern				**FIELD BLK**
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 13:35	04/07/2009 09:45
7470A/7471A Mercury	04/27/2009 16:00	20	05/04/2009 13:35	04/07/2009 09:45
6010B METALS TAL	04/27/2009 16:00	20	10/03/2009 13:35	04/07/2009 09:45

WORK ORDER

Printed: 4/23/2009 4:14:36PM

0903184

COMPUCHEM

Client:	CH2M HILL, INC.	Project Manager:	Cathy Dover
Project:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	Project Number:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-305
SDG:	0903184 CASE:	Status:	Batched

Analysis	Due	TAT	Expires	Comments
0903184-09 YS03-TB01-040609 [Water] Sampled 04/06/2009 13:45 Eastern				TRIP BLK
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 13:45	04/07/2009 09:45

CompuChem
a division of Liberty Analytical Corporation

QUALITY ASSURANCE NOTICE

CompuChem ID # [redacted]
Client ID # YS03-GW-19A-0409
Case #
Type of Analysis Metals (Total)
Receipt Date 4/7/09

The pH reading for the sample above was 6 : the required pH level is <2

A CompuChem Project Manager contacted the client who instructed the laboratory to:

Preserve in-house ✓

Note: For samples preserved in house, certain clients require that the maximum amount of preservative added to a sample in an SDG also be added to the associated field or equipment blank. If neither blank is present, the appropriate laboratory must be notified so the proper amount of preservation can be added to the method blank.

Analyze - qualify with notice ✓ per Rebekha & Megan 4/7/09

Dispose - client will resample

Subcontract lab to preserve

Project Manager [signature] Date 4/7/09

Preservation Type 50% HNO_3 Preservative Lot Number 166-17-2

Preserved By [signature] Date 4/7/09

QAN-R-2
020529

QAN-R-2 052902.llc

Data Completeness

The data package was received complete and intact. Resubmissions were required—incorrect cooler temps on case narrative. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/30-04/06/09
Received Date: 03/31-04/07/09
Analysis Dates: 04/03-16/09

Cooler Temps: 0.4-0.7°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS03-TB01-040609 and YS03-TB01-033009- trip blanks; YS25-EB01-040609 and YS03-EB01-033009- equipment blanks; YS03-FB01-040609 and YS03-FB01-033109- field blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDS	acetone	1.4J ug/L	2.5 ug/L	14 ug/L
VBLKIE	chloromethane	0.14J ug/L	0.5 ug/L	0.7 ug/L
	methylene chloride	0.25J	0.5	2.5
YS03-TB01-040609	methylene chloride	0.2J ug/L	0.5 ug/L	2 ug/L
	toluene	0.59	0.5	3
YS03-TB01-033009	chloromethane	0.17J	0.5	0.85
	acetone	2.8	2.5	28
	methylene chloride	0.19J	0.5	1.9
	toluene	0.48J	0.5	2.4
YS25-EB01-040609	acetone	8.1	2.5	81
	methylene chloride	0.76	0.5	7.6
	chloroform	0.4J	0.5	2
	toluene	0.16J	0.5	0.8
YS03-EB01-033009	chloromethane	0.22	0.5	1.1
	acetone	17	2.5	170
	methylene chloride	3	0.5	30
	2-butanone	2.7	2.5	27
	chloroform	0.2J	0.5	1
	toluene	0.36J	0.5	1.8
YS03-FB01-040609	acetone	22	2.5	220
	methylene chloride	0.86	0.5	8.6
	chloroform	0.47J	0.5	2.4
	toluene	0.18J	0.5	0.9
YS03-FB01-033109	chloromethane	0.17J	0.5	0.85
	acetone	9	2.5	90
	methylene chloride	1.3	0.5	13
	2-butanone	8.2	2.5	82
	chloroform	0.94	0.5	4.7
	toluene	1.6	0.5	8

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW19A-0409, YS03-GW24-0309, YS03-GW29-0309	acetone	B	BL
YS03-GW29-0309	methylene chloride	B	BL
YS03-GW29-0309	chloromethane	B	BL
YS03-GW29-0309	2-butanone	B	BL
YS03-GW29-0309	chloroform	B	BL
YS03-GW29-0309, YS03-GW19A-0409	toluene	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Lynn Mascelli **Date:** 5/31/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
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FORM V VOA

YS03-GW29-0309
YS03-FB01-033009
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000	
Chloromethane	AVRG		0.27044445	12.062	15.000	
Vinyl Chloride	AVRG		0.23003478	8.624	30.000	
Bromomethane	AVRG		0.15750282	9.483	15.000	
Chloroethane	AVRG		0.09293606	4.050	15.000	
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000	
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000	
Carbon disulfide	AVRG		1.08532070	9.621	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000	
Acetone	AVRG		0.04053702	10.407	15.000	L/R
Methyl acetate	AVRG		0.26289378	2.681	15.000	
Methylene Chloride	AVRG		0.27597997	5.241	15.000	
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000	
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000	
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000	
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000	
2-butanone	AVRG		0.05249255	6.112	15.000	
Chloroform	AVRG		0.50756846	6.234	30.000	
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000	
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000	
Benzene	AVRG		1.00716400	6.418	15.000	
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000	
Trichloroethene	AVRG		0.33002699	6.711	15.000	
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000	
Bromodichloromethane	AVRG		0.33298211	7.620	15.000	
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000	
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000	
Toluene	AVRG		0.93480306	5.691	30.000	
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000	
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000	
Tetrachloroethene	AVRG		0.31078865	10.185	15.000	
2-hexanone	AVRG		0.10893166	9.712	15.000	
Dibromochloromethane	AVRG		0.31932787	6.449	15.000	
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000	
Chlorobenzene	AVRG		0.95964278	5.742	15.000	
Ethylbenzene	AVRG		0.48273954	9.366	30.000	
m,p-Xylene	AVRG		0.59028287	9.153	15.000	
o-Xylene	AVRG		0.56958706	7.286	15.000	
Styrene	AVRG		0.93611935	7.857	15.000	
Bromoform	AVRG		0.16353005	7.565	15.000	
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000	
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000	
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D03002-TUN171 BFB Injection Date: 04/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1004

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.4
75	30.0 - 60.0% of mass 95	47.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.5
175	5.0 - 9.0% of mass 174	5.7 (7.5)1
176	95.0 - 101.0% of mass 174	75.3 (98.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D03002-CCV	9D04002-CCV1R7	04/03/09	1117
02	VBLKIE	9040308-BLK	9040308-BLK1R7	04/03/09	1236
03	VIELCS	9040308-BS1	9040308-BS171	04/03/09	1316
04	VIELCSD	9040308-BSD	9040308-BSD171	04/03/09	1345
05	YS03-GW29-0309	0903184-02	0903184-0271	04/03/09	1730
06	YS03-FB01-033009	0903184-03	0903184-0371	04/03/09	1759
07	YS03-EB01-033009	0903184-04	0903184-0471	04/03/09	1827
08	YS03-TB01-033009	0903184-05	0903184-0571	04/03/09	1855
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5972HP71 Calibration Date: 04/03/09 Time: 1117

Lab File ID: 9D04002-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.3696800	0.4445083	0.4445083	0.001	20.24	90.00	AVRG
Chloromethane	0.2704400	0.2605988	0.2605988	0.1	-3.64	90.00	AVRG
Vinyl Chloride	0.2300400	0.2570363	0.2570363	0.001	11.74	20.00	AVRG
Bromomethane	0.1575000	0.1549609	0.1549609	0.001	-1.61	90.00	AVRG
Chloroethane	0.0929400	0.1022950	0.1022950	0.001	10.06	90.00	AVRG
Trichlorofluoromethane	0.3021100	0.4070627	0.4070627	0.001	34.74	90.00	AVRG
1,1-Dichloroethene	0.2943500	0.3055466	0.3055466	0.001	3.80	20.00	AVRG
Carbon disulfide	1.0853200	1.1617105	1.1617105	0.001	7.04	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1833220	0.1833220	0.001	21.32	90.00	AVRG
Acetone	0.0405400	0.0407157	0.0407157	0.001	0.43	90.00	AVRG
Methyl acetate	0.2628900	0.2426343	0.2426343	0.001	-7.70	90.00	AVRG
Methylene Chloride	0.2759800	0.2818705	0.2818705	0.001	2.13	90.00	AVRG
trans-1,2-Dichloroethene	0.3088100	0.3202020	0.3202020	0.001	3.69	90.00	AVRG
Methyl-tert-butyl ether	0.2691400	0.2355056	0.2355056	0.001	-12.50	90.00	AVRG
1,1-Dichloroethane	0.5193300	0.5434829	0.5434829	0.1	4.65	90.00	AVRG
cis-1,2-Dichloroethene	0.3014500	0.3031610	0.3031610	0.001	0.57	90.00	AVRG
2-butanone	0.0524900	0.0453214	0.0453214	0.001	-13.66	90.00	AVRG
Chloroform	0.5075700	0.5714892	0.5714892	0.001	12.59	20.00	AVRG
1,1,1-Trichloroethane	0.3925800	0.4542404	0.4542404	0.001	15.71	90.00	AVRG
Carbon Tetrachloride	0.2611400	0.3175405	0.3175405	0.001	21.60	90.00	AVRG
Benzene	1.0071600	1.0300222	1.0300222	0.001	2.27	90.00	AVRG
1,2-Dichloroethane	0.2661800	0.3031160	0.3031160	0.001	13.88	90.00	AVRG
Trichloroethene	0.3300200	0.3413893	0.3413893	0.001	3.44	90.00	AVRG
1,2-Dichloropropane	0.2470600	0.2489071	0.2489071	0.001	0.75	20.00	AVRG
Bromodichloromethane	0.3329800	0.3679691	0.3679691	0.001	10.51	90.00	AVRG
cis-1,3-Dichloropropene	0.3257500	0.3370666	0.3370666	0.001	3.47	90.00	AVRG
4-Methyl-2-pentanone	0.1780100	0.1528002	0.1528002	0.001	-14.16	90.00	AVRG
Toluene	0.9348000	0.8907592	0.8907592	0.001	-4.71	20.00	AVRG
trans-1,3-Dichloropropene	0.3679300	0.3573770	0.3573770	0.001	-2.87	90.00	AVRG
1,1,2-Trichloroethane	0.2333800	0.2076990	0.2076990	0.001	-11.00	90.00	AVRG
Tetrachloroethene	0.3107900	0.3038644	0.3038644	0.001	-2.23	90.00	AVRG
2-hexanone	0.1089300	0.0918243	0.0918243	0.001	-15.70	90.00	AVRG
Dibromochloromethane	0.3193300	0.3153339	0.3153339	0.001	-1.25	90.00	AVRG
1,2-Dibromoethane	0.2352400	0.2203191	0.2203191	0.001	-6.34	90.00	AVRG
Chlorobenzene	0.9596400	0.9024716	0.9024716	0.3	-5.96	90.00	AVRG
Ethylbenzene	0.4827400	0.4590633	0.4590633	0.001	-4.90	20.00	AVRG
m,p-Xylene	0.5902800	0.5706838	0.5706838	0.001	-3.32	90.00	AVRG
o-Xylene	0.5695900	0.5344969	0.5344969	0.001	-6.16	90.00	AVRG
Styrene	0.9361200	0.8781088	0.8781088	0.001	-6.20	90.00	AVRG
Bromoform	0.1635300	0.1562309	0.1562309	0.1	-4.46	90.00	AVRG
Isopropyl Benzene	1.4891700	1.4423184	1.4423184	0.001	-3.15	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5861500	0.5300447	0.5300447	0.3	-9.57	90.00	AVRG

FORM VII VOA

052A

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D10010-TUN191 BFB Injection Date: 04/10/09

Instrument ID: 5975HPMS91 BFB Injection Time: 2219

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.1
75	30.0 - 60.0% of mass 95	54.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	73.0
175	5.0 - 9.0% of mass 174	5.5 (7.6)1
176	95.0 - 101.0% of mass 174	71.9 (98.5)1
177	5.0 - 9.0% of mass 176	4.5 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9D10010-CAL	9D10010-CAL291	04/10/09	2317
02	VSTD0.5	9D10010-CAL	9D10010-CAL191	04/10/09	2344
03	VSTD010	9D10010-CAL	9D10010-CAL491	04/11/09	0010
04	VSTD025	9D10010-CAL	9D10010-CAL591	04/11/09	0037
05	VSTD005	9D10010-CAL	9D10010-CAL3R9	04/11/09	0104
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FORM V VOA

YS03-GW24-0309

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date(s): 04/10/09 04/11/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 2317 0104

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.57026672	4.389	15.000	
Chloromethane	AVRG		0.32854137	4.385	15.000	
Vinyl Chloride	AVRG		0.41164869	3.658	30.000	
Bromomethane	AVRG		0.22537373	4.655	15.000	
Chloroethane	AVRG		0.22383446	2.786	15.000	
Trichlorofluoromethane	AVRG		0.81194139	1.708	15.000	
1,1-Dichloroethene	AVRG		0.36171202	7.594	30.000	
Carbon disulfide	AVRG		1.20051709	5.373	15.000	
1,1,2-trichloro-1,2,2-triflu	LINR	-0.1274962	5.25918442	0.9952014	0.9950000	
Acetone	LINR	-0.3831795	46.0959482	0.9997306	0.9950000	
Methyl acetate	AVRG		0.16244159	7.414	15.000	
Methylene Chloride	AVRG		0.22992561	10.893	15.000	
trans-1,2-Dichloroethene	AVRG		0.30209534	5.158	15.000	
Methyl-tert-butyl ether	AVRG		0.54248558	3.286	15.000	
1,1-Dichloroethane	AVRG		0.52814705	3.942	15.000	
cis-1,2-Dichloroethene	AVRG		0.29106037	4.199	15.000	
2-butanone	AVRG		0.03158005	1.016	15.000	4R
Chloroform	AVRG		0.63070822	1.978	30.000	
1,1,1-Trichloroethane	AVRG		0.78230254	6.056	15.000	
Carbon Tetrachloride	AVRG		0.73592671	8.832	15.000	
Benzene	AVRG		1.08261217	2.444	15.000	
1,2-Dichloroethane	AVRG		0.37026160	2.276	15.000	
Trichloroethene	AVRG		0.36326259	7.610	15.000	
1,2-Dichloropropane	AVRG		0.21615602	3.322	30.000	
Bromodichloromethane	AVRG		0.42043333	1.539	15.000	
cis-1,3-Dichloropropene	AVRG		0.39771715	3.046	15.000	
4-Methyl-2-pentanone	AVRG		0.11264688	5.826	15.000	
Toluene	AVRG		1.09746322	10.345	30.000	
trans-1,3-Dichloropropene	AVRG		0.50676418	7.528	15.000	
1,1,2-Trichloroethane	AVRG		0.19563700	10.443	15.000	
Tetrachloroethene	LINR	-0.1058478	2.68213448	0.9978702	0.9950000	
2-hexanone	AVRG		0.08110240	1.789	15.000	
Dibromochloromethane	AVRG		0.32763286	2.181	15.000	
1,2-Dibromoethane	AVRG		0.19814661	3.129	15.000	
Chlorobenzene	AVRG		1.19971941	8.685	15.000	
Ethylbenzene	AVRG		0.73063553	13.115	30.000	
m,p-Xylene	AVRG		0.91792292	13.255	15.000	
o-Xylene	AVRG		0.83780962	13.008	15.000	
Styrene	AVRG		1.31677732	8.937	15.000	
Bromoform	AVRG		0.16020427	3.516	15.000	
Isopropyl Benzene	AVRG		2.68134887	14.229	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.38694436	4.333	15.000	
1,3-Dichlorobenzene	AVRG		2.05705231	14.202	15.000	
1,4-Dichlorobenzene	AVRG		1.96179580	11.931	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D13001-TUN191 BFB Injection Date: 04/13/09

Instrument ID: 5975HPMS91 BFB Injection Time: 0935

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.2
75	30.0 - 60.0% of mass 95	57.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	77.5
175	5.0 - 9.0% of mass 174	5.9 (7.6)1
176	95.0 - 101.0% of mass 174	74.2 (95.8)1
177	5.0 - 9.0% of mass 176	5.3 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D13001-CCV	9D13001-CCV191	04/13/09	1000
02	VBLKIX	9041307-BLK	9041307-BLK191	04/13/09	1047
03	VIXLCS	9041307-BS1	9041307-BS191	04/13/09	1134
04	VIXLCSD	9041307-BSD	9041307-BSD191	04/13/09	1201
05	YS03-GW24-0309	0903184-01	0903184-01D391	04/13/09	1617
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date: 04/13/09 Time: 1000

Lab File ID: 9D13001-CCV191 Init. Calib. Date(s): 04/10/09 04/11/09

Init. Calib. Times: 2317 0104

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.5702600	0.4959631	0.4959631	0.001	-13.03	90.00	AVRG	
Chloromethane	0.3285400	0.2849237	0.2849237	0.1	-13.28	90.00	AVRG	
Vinyl Chloride	0.4116500	0.3882763	0.3882763	0.001	-5.68	20.00	AVRG	
Bromomethane	0.2253700	0.2185383	0.2185383	0.001	-3.03	90.00	AVRG	
Chloroethane	0.2238400	0.2223590	0.2223590	0.001	-0.66	90.00	AVRG	
Trichlorofluoromethane	0.8119400	0.8370912	0.8370912	0.001	3.10	90.00	AVRG	
1,1-Dichloroethene	0.3617100	0.3596480	0.3596480	0.001	-0.57	20.00	AVRG	
Carbon disulfide	1.2005200	1.2215720	1.2215720	0.001	1.75	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	134.56017	125.00000	0.2289286	0.001	7.65	90.00	LINR	
Acetone	670.52458	625.00000	0.0249366	0.001	7.28	90.00	LINR	4R
Methyl acetate	0.1624400	0.1634586	0.1634586	0.001	0.63	90.00	AVRG	
Methylene Chloride	0.2299200	0.2789374	0.2789374	0.001	21.32	90.00	AVRG	
rans-1,2-Dichloroethene	0.3021000	0.3048809	0.3048809	0.001	0.92	90.00	AVRG	
Methyl-tert-butyl ether	0.5424900	0.5606879	0.5606879	0.001	3.35	90.00	AVRG	
1,1-Dichloroethane	0.5281500	0.5255430	0.5255430	0.1	-0.49	90.00	AVRG	
cis-1,2-Dichloroethene	0.2910600	0.2954758	0.2954758	0.001	1.52	90.00	AVRG	
2-butanone	0.0315800	0.0336350	0.0336350	0.001	6.51	90.00	AVRG	4R
Chloroform	0.6307100	0.6578309	0.6578309	0.001	4.30	20.00	AVRG	
1,1,1-Trichloroethane	0.7823000	0.7640748	0.7640748	0.001	-2.33	90.00	AVRG	
Carbon Tetrachloride	0.7359300	0.6506501	0.6506501	0.001	-11.59	90.00	AVRG	
Benzene	1.0826100	1.0710572	1.0710572	0.001	-1.07	90.00	AVRG	
1,2-Dichloroethane	0.3702600	0.3943268	0.3943268	0.001	6.50	90.00	AVRG	
Trichloroethene	0.3632600	0.3503964	0.3503964	0.001	-3.54	90.00	AVRG	
1,2-Dichloropropane	0.2161500	0.2081955	0.2081955	0.001	-3.68	20.00	AVRG	
Bromodichloromethane	0.4204300	0.4152496	0.4152496	0.001	-1.23	90.00	AVRG	
cis-1,3-Dichloropropene	0.3977200	0.3950971	0.3950971	0.001	-0.66	90.00	AVRG	
4-Methyl-2-pentanone	0.1126500	0.1145734	0.1145734	0.001	1.71	90.00	AVRG	
Toluene	1.0974600	1.0430761	1.0430761	0.001	-4.96	20.00	AVRG	
trans-1,3-Dichloropropene	0.5067600	0.4900647	0.4900647	0.001	-3.29	90.00	AVRG	
1,1,2-Trichloroethane	0.1956400	0.1906524	0.1906524	0.001	-2.55	90.00	AVRG	
Tetrachloroethene	131.41965	125.00000	0.4314493	0.001	5.14	90.00	LINR	
2-hexanone	0.0811000	0.0812171	0.0812171	0.001	0.14	90.00	AVRG	
Dibromochloromethane	0.3276300	0.3126769	0.3126769	0.001	-4.56	90.00	AVRG	
1,2-Dibromoethane	0.1981500	0.1920886	0.1920886	0.001	-3.06	90.00	AVRG	
Chlorobenzene	1.1997200	1.1409402	1.1409402	0.3	-4.90	90.00	AVRG	
Ethylbenzene	0.7306400	0.6966812	0.6966812	0.001	-4.65	20.00	AVRG	
m,p-Xylene	0.9179200	0.8760485	0.8760485	0.001	-4.56	90.00	AVRG	
o-Xylene	0.8378100	0.8036741	0.8036741	0.001	-4.07	90.00	AVRG	
Styrene	1.3167800	1.2606450	1.2606450	0.001	-4.26	90.00	AVRG	
Bromoform	0.1602000	0.1495351	0.1495351	0.1	-6.66	90.00	AVRG	
Isopropyl Benzene	2.6813500	2.5370924	2.5370924	0.001	-5.38	90.00	AVRG	
,1,2,2-Tetrachloroethane	0.3869400	0.3463508	0.3463508	0.3	-10.49	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D15007-TUN191 BFB Injection Date: 04/15/09

Instrument ID: 5975HPMS91 BFB Injection Time: 1456

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.0
75	30.0 - 60.0% of mass 95	54.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.9 (1.2)1
174	Greater than 50.0% of mass 95	76.3
175	5.0 - 9.0% of mass 174	5.9 (7.8)1
176	95.0 - 101.0% of mass 174	76.3 (100.0)1
177	5.0 - 9.0% of mass 176	4.8 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D15007-CAL	9D15007-CAL391	04/15/09	1522
02	VSTD001	9D15007-CAL	9D15007-CAL291	04/15/09	1548
03	VSTD0.5	9D15007-CAL	9D15007-CAL191	04/15/09	1615
04	VSTD010	9D15007-CAL	9D15007-CAL491	04/15/09	1642
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22					

YS25-EB01-040609
YS03-FB01-
YS03-TB01-
YS03-GW19A-0409

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date(s): 04/15/09 04/15/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1522 1709

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.67587706	5.919	15.000	
Chloromethane	AVRG		0.35739885	8.638	15.000	
Vinyl Chloride	AVRG		0.43872704	5.308	30.000	
Bromomethane	AVRG		0.25265732	7.478	15.000	
Chloroethane	AVRG		0.24418667	5.723	15.000	
Trichlorofluoromethane	AVRG		0.91328439	5.238	15.000	
1,1-Dichloroethene	AVRG		0.37557911	8.533	30.000	
Carbon disulfide	AVRG		1.23479873	5.426	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.23359921	8.753	15.000	
Acetone	LINR	-0.2114964	36.1526453	0.9997724	0.9950000	
Methyl acetate	AVRG		0.20122431	7.613	15.000	
Methylene Chloride	AVRG		0.30242097	5.702	15.000	
trans-1,2-Dichloroethene	AVRG		0.30586196	4.106	15.000	
Methyl-tert-butyl ether	AVRG		0.60716765	1.114	15.000	
1,1-Dichloroethane	AVRG		0.53828758	4.100	15.000	
cis-1,2-Dichloroethene	AVRG		0.29907819	2.718	15.000	
2-butanone	AVRG		0.03670669	3.589	15.000	L/R
Chloroform	AVRG		0.66776474	3.203	30.000	
1,1,1-Trichloroethane	AVRG		0.78735233	4.751	15.000	
Carbon Tetrachloride	AVRG		0.74195529	3.174	15.000	
Benzene	AVRG		1.07870480	2.803	15.000	
1,2-Dichloroethane	AVRG		0.42823020	4.455	15.000	
Trichloroethene	AVRG		0.35645264	2.524	15.000	
1,2-Dichloropropane	AVRG		0.21902438	2.565	30.000	
Bromodichloromethane	AVRG		0.46485862	2.524	15.000	
cis-1,3-Dichloropropene	AVRG		0.40542135	4.726	15.000	
4-Methyl-2-pentanone	AVRG		0.11562543	2.481	15.000	
Toluene	AVRG		0.96631724	3.300	30.000	
trans-1,3-Dichloropropene	AVRG		0.49773660	1.576	15.000	
1,1,2-Trichloroethane	AVRG		0.20112126	6.351	15.000	
Tetrachloroethene	AVRG		0.41338540	6.134	15.000	
2-hexanone	AVRG		0.08248318	2.155	15.000	
Dibromochloromethane	AVRG		0.35826124	2.323	15.000	
1,2-Dibromoethane	AVRG		0.20775099	4.882	15.000	
Chlorobenzene	AVRG		1.12918059	3.616	15.000	
Ethylbenzene	AVRG		0.65589198	4.830	30.000	
m,p-Xylene	AVRG		0.81285937	4.137	15.000	
o-Xylene	AVRG		0.76669157	3.458	15.000	
Styrene	AVRG		1.20488921	4.383	15.000	
Bromoform	AVRG		0.18798755	4.980	15.000	
Isopropyl Benzene	AVRG		2.32864440	3.696	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.35961782	3.046	15.000	
1,3-Dichlorobenzene	AVRG		1.82072519	5.725	15.000	
1,4-Dichlorobenzene	AVRG		1.81787540	6.876	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D16002-TUN191 BFB Injection Date: 04/16/09

Instrument ID: 5975HPMS91 BFB Injection Time: 0208

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.8
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	Greater than 50.0% of mass 95	80.3
175	5.0 - 9.0% of mass 174	5.8 (7.2)1
176	95.0 - 101.0% of mass 174	79.0 (98.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D16002-CCV	9D16002-CCV191	04/16/09	0221
02	VBLKDS	9041603-BLK	9041603-BLK191	04/16/09	0248
03	VDSLCS	9041603-BS1	9041603-BS1R91	04/16/09	0354
04	VDSLCSD	9041603-BSD	9041603-BSD191	04/16/09	0421
05	YS25-EB01-040609	0903184-07	0903184-0791	04/16/09	0958
06	YS03-FB01-040609	0903184-08	0903184-0891	04/16/09	1025
07	YS03-TB01-040609	0903184-09	0903184-0991	04/16/09	1052
08	YS03-GW19A-0409	0903184-06	0903184-06R91	04/16/09	1320
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date: 04/16/09 Time: 0221

Lab File ID: 9D16002-CCV191 Init. Calib. Date(s): 04/15/09 04/15/09

Init. Calib. Times: 1522 1709

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.6758800	0.7207545	0.7207545	0.001	6.64	90.00	AVRG
Chloromethane	0.3574000	0.3926532	0.3926532	0.1	9.86	90.00	AVRG
Vinyl Chloride	0.4387300	0.4812179	0.4812179	0.001	9.68	20.00	AVRG
Bromomethane	0.2526600	0.2239531	0.2239531	0.001	-11.36	90.00	AVRG
Chloroethane	0.2441900	0.2709837	0.2709837	0.001	10.97	90.00	AVRG
Trichlorofluoromethane	0.9132900	1.0050854	1.0050854	0.001	10.05	90.00	AVRG
1,1-Dichloroethene	0.3755800	0.4051781	0.4051781	0.001	7.88	20.00	AVRG
Carbon disulfide	1.2348000	1.3494170	1.3494170	0.001	9.28	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2336000	0.2369075	0.2369075	0.001	1.42	90.00	AVRG
Acetone	760.64099	625.00000	0.0348335	0.001	-21.70	90.00	LINR J
Methyl acetate	0.2012200	0.2219656	0.2219656	0.001	10.31	90.00	AVRG
Methylene Chloride	0.3024200	0.3138821	0.3138821	0.001	3.79	90.00	AVRG
rans-1,2-Dichloroethene	0.3058600	0.3045703	0.3045703	0.001	-0.42	90.00	AVRG
ethyl-tert-butyl ether	0.6071700	0.5289058	0.5289058	0.001	-12.89	90.00	AVRG
1,1-Dichloroethane	0.5382900	0.5266511	0.5266511	0.1	-2.16	90.00	AVRG
cis-1,2-Dichloroethene	0.2990800	0.2864808	0.2864808	0.001	-4.21	90.00	AVRG
2-butanone	0.0367100	0.0348650	0.0348650	0.001	-5.02	90.00	AVRG 4R
Chloroform	0.6677600	0.6826744	0.6826744	0.001	2.23	20.00	AVRG
1,1,1-Trichloroethane	0.7873500	0.8064858	0.8064858	0.001	2.43	90.00	AVRG
Carbon Tetrachloride	0.7419500	0.7693327	0.7693327	0.001	3.69	90.00	AVRG
Benzene	1.0787000	1.0279984	1.0279984	0.001	-4.70	90.00	AVRG
1,2-Dichloroethane	0.4282300	0.4353657	0.4353657	0.001	1.67	90.00	AVRG
Trichloroethene	0.3564500	0.3305628	0.3305628	0.001	-7.26	90.00	AVRG
1,2-Dichloropropane	0.2190200	0.2208893	0.2208893	0.001	0.85	20.00	AVRG
Bromodichloromethane	0.4648600	0.4685044	0.4685044	0.001	0.78	90.00	AVRG
cis-1,3-Dichloropropene	0.4054200	0.3838336	0.3838336	0.001	-5.32	90.00	AVRG
4-Methyl-2-pentanone	0.1156200	0.1095872	0.1095872	0.001	-5.22	90.00	AVRG
Toluene	0.9663200	0.8809734	0.8809734	0.001	-8.83	20.00	AVRG
trans-1,3-Dichloropropene	0.4977400	0.4890213	0.4890213	0.001	-1.75	90.00	AVRG
1,1,2-Trichloroethane	0.2011200	0.1850202	0.1850202	0.001	-8.00	90.00	AVRG
Tetrachloroethene	0.4133900	0.3741710	0.3741710	0.001	-9.49	90.00	AVRG
2-hexanone	0.0824800	0.0786457	0.0786457	0.001	-4.65	90.00	AVRG
Dibromochloromethane	0.3582600	0.3284175	0.3284175	0.001	-8.33	90.00	AVRG
1,2-Dibromoethane	0.2077500	0.1852268	0.1852268	0.001	-10.84	90.00	AVRG
Chlorobenzene	1.1291800	1.0354010	1.0354010	0.3	-8.30	90.00	AVRG
Ethylbenzene	0.6558900	0.5852882	0.5852882	0.001	-10.76	20.00	AVRG
m,p-Xylene	0.8128600	0.7309484	0.7309484	0.001	-10.08	90.00	AVRG
o-Xylene	0.7666900	0.6953180	0.6953180	0.001	-9.31	90.00	AVRG
Styrene	1.2048900	1.0988930	1.0988930	0.001	-8.80	90.00	AVRG
Bromoform	0.1879900	0.1805582	0.1805582	0.1	-3.95	90.00	AVRG
Isopropyl Benzene	2.3286500	2.0626987	2.0626987	0.001	-11.42	90.00	AVRG
,1,2,2-Tetrachloroethane	0.3596200	0.3440557	0.3440557	0.3	-4.33	90.00	AVRG

FORM VII VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9041603-BLK191 Lab Sample ID: 9041603-BLK1

Date Analyzed: 04/16/09 Time Analyzed: 0248

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5975HPMS91

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDSLCS	9041603-BS1	9041603-BS1R	0354
02	VDSLCSD	9041603-BSD1	9041603-BSD1	0421
03	YS25-EB01-040609	0903184-07	0903184-0791	0958
04	YS03-FB01-040609	0903184-08	0903184-0891	1025
05	YS03-TB01-040609	0903184-09	0903184-0991	1052
B 06	YS03-GW19A-0409	0903184-06	0903184-06R9	1320
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COMMENTS: Acetone 1.4 J ug/L (2.5)

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKIE

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9040308-BLK1R71 Lab Sample ID: 9040308-BLK1

Date Analyzed: 04/03/09 Time Analyzed: 1236

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

Chl A MC

B ma B

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VIELCS	9040308-BS1	9040308-BS17	1316
02	VIELCSD	9040308-BSD1	9040308-BSD1	1345
03	YS03-GW29-0309	0903184-02	0903184-0271	1730
04	YS03-FB01-033009	0903184-03	0903184-0371	1759
05	YS03-EB01-033009	0903184-04	0903184-0471	1827
06	YS03-TB01-033009	0903184-05	0903184-0571	1855
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COMMENTS: Chloromethane 0.14J ug/L (0.50)
Acetone 1.6J (2.5)
MC 0.25J (0.5)

FORM IV VOA

Initial Calibration Date: 3/28/2009

RRF and %RSD Calculations:

Compound Name: chloromethane

Lab Value: 0.325

Area of Compound	830175
Area of Internal STD	510420
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.325

Compound Name: 4-methyl-2-pentanone

Lab Value: 8.34

RRF of STD 1	0.1549
RRF of STD 2	0.1775
RRF of STD 3	0.1925
RRF of STD 4	0.1895
RRF of STD 5	0.1757
Calculated % RSD	8.34

Continuing Calibration File ID: 4/3/2009

RRF and %D Calculations:

Compound Name: carbon disulfide

Lab Value: 1.162

Area of Compound	618928
Area of Internal STD	532773
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.162

Compound Name: benzene

Lab Value: 2.3

Average RRF	1.007
Calibration Check RRF	1.030
Calculated % D	-2.3

SAMPLE CALCULATION

Sample ID: YS02-FB01-033009
Standard ID: 4/3/2009
Compound: chloromethane
Concnetration: 0.17ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	3824		
Area of Internal STD	408183		
Conc. of Internal (ng)	125	250	
RRF of Compound	0.27044		
Dilution Factor	1	1	
Weight of Sample	NA		
Volume of Sample	25	NA	
% Moisture	NA	0.83	
Aliquot of sample	NA	NA	
Concentration	0.17	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	10.122	4.486	0.443
Standard	10.121	4.485	0.443

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
REVISED
SDG # 0903184
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-GW24-0309, YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009, YS03-GW19A-0409, YS25-EB01-040609, YS03-FB01-040609 AND YS03-TB01-040609

The 9 aqueous samples listed above were received intact, refrigerated between 0.4°C and 0.7°C, with proper documentation, in sealed shipping containers, on March 31 and April 7, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903184 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, sample YS03-GW24-0309 was initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 91 on 4/15/09 associated with the BFB injected at 1456. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VI. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard. Manual integrations were performed on 9C28002-CAL171, 9C28002-CAL271, 9C28002-CAL471, 9D10010-CAL191, 9D10010-CAL291, 9D15007-CAL191, 9D15007-CAL291, 9D04002-CCV1R71, 9040308-BS171 and 9040308-BLK1R71 process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 23, 2009

DataQual ES

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "DataQual" <dataqual@charter.net>
Cc: <Rebekha.Shaw@CH2M.com>; "Jacqueline Cleveland" <cleve137@charter.net>
Sent: Monday, June 01, 2009 1:57 PM
Attach: 0903184 VOC REVISED NARRATIVE.pdf; 0903136 VOC REVISED NARRATIVE.pdf
Subject: RE: cooler temp question

Hi Laura,

You are correct, the temperatures on the two Voc case narratives are not correct. From what I can tell, the reviewer must have accidently left the temps in from the previous case narrative she did in the template.

I asked her to please revise them. The revised case narratives are attached.

I apologize for the oversight.

Have a great day!

Cathy

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: DataQual [mailto:dataqual@charter.net]
Sent: Monday, June 01, 2009 10:59 AM
To: Cathy Dover
Cc: Rebekha.Shaw@CH2M.com; Jacqueline Cleveland
Subject: cooler temp question

Dear Cathy,

According to the case narrative for SDG#0903184 the coolers were received at 0.1-5.2 degrees C; however according to the COC the coolers were received at 0.4 and 0.7--could you please check that I am not missing something in the data package and if the COC is correct please change the case narrative. I have the same question with the case narrative for SDG#0903136, it lists temps at 0.1-0.8 and the COC lists the samples at 0.1-1.3C. Possibly I am not understanding the wording on the case narrative or is this also incorrect?

Thank you,
Laura

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/30, 4/6
Received Date: 3/31, 4/7
Prep. Dates: no prep – dissolved; 4/8 ICP total; 4/8 dissolved, 4/8 total Hg
Analysis Dates: 4/15 dissolved, 4/9-4/10 total ICP; 4/9 dissolved, 4/9 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	chromium	1.527B ug/L	7.635 ug/L	B	BL
	copper	2.274B ug/L	11.37 ug/L	B	BL
	iron	37.885B ug/L	200.78 ug/L	B	BL
	vanadium	0.667B ug/L	3.335 ug/L	B	BL
	aluminum	-64.036B ug/L	≤ 10X MDL (534 ug/L)	L/UL	BL
	beryllium	-2.189B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
ICB	nickel	1.0B ug/L	5 ug/L	B	BL
	mercury	-0.103B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
YS03-EB01-033009	zinc	6.3B ug/L	31.5 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	chromium	B	BL
all dissolved metals field samples	copper	B	BL
YS03-GW24-0309, YS03-GW29-0309	iron	B	BL
YS03-GW24-0309, YS03-GW29-0309	vanadium	B	BL
YS03-GW24-0309, YS03-GW29-0309	aluminum	L/UL	BL
all dissolved metals field samples	beryllium	L/UL	BL
YS03-GW19A-0409, YS03-GW29-0309	nickel	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS03-GW24-0309	zinc	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	8.306B ug/L	41.53 ug/L	B	BL
YS03-FB01-033009	vanadium	0.69B ug/L	3.45 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
YS03-GW29-0309	vanadium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

There was no matrix spike pair in this SDG.

SERIAL DILUTIONS

The serial dilution analyses of samples YS03-GW24-0309 for total metals exhibited acceptable %Ds for all analytes. No qualifications were required.

The serial dilution analyses of samples YS03-GW24-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (20.5%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!
			#DIV/0!
			#DIV/0!

Comments: No qualifications were required.

Total Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

Comments: Flag Fe, Mn, K and Na as estimated J.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS03-EB01-033009
COMPOUND: copper
CONCENTRATION: 3.5 ug/L
%Solids – na
50 ml

Raw Data result: 3.453747 ug/L

3.453747 ug/L * 0.05L/0.05L = 3.453747 ug/L

Total Metals

EPA SAMPLE ID: YS03-GW19A-0409
COMPOUND: vanadium
CONCENTRATION: 77.6 ug/L
%Solids – na
50 ml

Raw Data result: 77.58978 ug/L

77.58978 ug/L * 0.05L/0.05L = 77.58978 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer A Cleveland **Date:** 6/4/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903184

The indicated Sample Delivery Group (SDG) consisting of seven (7) water samples was received into the laboratory information management system (LIMS) on March 31 and April 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 0.7°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0903184-01 ID YS03-GW24-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2. Forneste for Susan Bass
Susan W. Bass
Senior Chemist
April 13, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	B	2.4	U	2.4	U	2.4	U	8.306	B	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	1.3	B	1.0	B	-0.749	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	-0.645	B	P
Calcium	-219.7	B	-179.8	B	-201.5	B	-193.5	B	-218.407	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.868	B	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	-1.945	B	P
Copper	-0.9	B	0.8	U	-1.4	B	-1.6	B	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	-1.4	B	1.4	U	1.400	U	P
Magnesium	31.0	U	33.8	B	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	-0.103	B	-0.134	B	-0.111	B	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	234.478	B	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

See PBBL

NQ

NQ

NQ

none assoc

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.1	B	3.7	B	2.5	B	See PB		P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-220.8	B	-216.2	B	-214.6	B	NQ		P
Chromium			0.7	U	1.3	B	1.0	B	NQ		P
Cobalt			1.6	U	-1.9	B	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Nickel			0.7	U	0.7	B	1.0	B	NQ		P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.3	B	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	3.3	U	4.4	B	NQ		P
Vanadium			0.6	U	0.7	B	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

none assoc

YS03-GW24 29 19A

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U					P
Antimony			2.4	U	2.4	U					P
Arsenic			2.2	U	2.2	U					P
Barium			0.3	U	0.3	U					P
Beryllium			0.4	U	-0.8	B					P
Cadmium			0.6	U	-1.0	B					P
Calcium			-215.3	B	220.3	B					P
Chromium			0.8	B	0.7	U					P
Cobalt			-1.7	B	-3.6	B					P
Copper			0.8	U	0.8	U					P
Iron			24.6	U	24.6	U					P
Lead			1.4	U	1.4	U					P
Magnesium			31.0	U	31.0	U					P
Manganese			0.4	U	0.4	U					P
Nickel			0.7	U	0.7	U					P
Potassium			9.9	U	9.9	U					P
Selenium			2.2	U	2.2	U					P
Silver			0.6	U	0.6	U					P
Sodium			159.5	U	159.5	U					P
Thallium			3.3	U	4.6	B					P
Vanadium			0.6	U	0.6	U					P
Zinc			5.2	U	5.2	U					P

10 11

NQ NQ

Y503-GW24
29
19A

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903186

The indicated Sample Delivery Group (SDG) consisting of five (5) dissolved water sample was received into the laboratory information management system (LIMS) on March 31 and April 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 0.7°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested dissolved TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0903186-01 ID YS03-GW24-0309L was performed in accordance with requirements for ICP analysis and ID YS03-GW19A-0309 was performed for mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2 Jonesters for Susan Bass

Susan W. Bass
Senior Chemist
April 16, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	-64.036	B	P
Antimony	4.5	B	2.4	U	3.3	B	2.4	U	2.653	B	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.4	B	0.3	B	0.300	U	P
Beryllium	0.4	U	0.4	U	-0.9	B	1.9	B	-2.189	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-200.3	B	-167.5	B	-148.5	B	-171.4	B	-180.094	B	P
Chromium	1.5	B	2.0	B	2.0	B	1.7	B	1.527	B	P
Cobalt	1.6	U	1.6	U	-2.0	B	-1.7	B	1.600	U	P
Copper	1.0	B	1.1	B	1.9	B	2.3	B	2.274	B	P
Iron	24.8	B	34.9	B	42.0	B	36.4	B	37.882	B	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	47.2	B	63.8	B	40.8	B	31.000	U	P
Manganese	0.4	U	0.4	B	0.4	B	0.4	B	0.430	B	P
Mercury	-0.103	B	-0.134	B	-0.111	B	0.100	U	0.100	U	CV
Nickel	1.0	B	0.7	B	0.9	B	0.8	B	0.670	U	P
Potassium	9.9	U	10.2	B	13.4	B	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	4.5	B	3.3	U	3.7	B	3.300	U	P
Vanadium	0.7	B	1.0	B	0.9	B	0.8	B	0.667	B	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

none assoc.

GW24
GW29
GW19A

√ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U							P
Antimony			3.8	B	NQ						P
Arsenic			2.2	U							P
Barium			0.6	B	NQ						P
Beryllium			2.1	B	see PB						P
Cadmium			0.6	U							P
Calcium			-163.5	B	NQ						P
Chromium			1.8	B	see PB						P
Cobalt			1.6	U							P
Copper			3.9	B	see PB						P
Iron			45.7	B	see PB						P
Lead			1.4	U							P
Magnesium			48.6	B	NQ						P
Manganese			0.6	B	NQ see ICB						P
Mercury			0.100	U	-0.119	B	0.100	U			CV
Nickel			1.4	B	see ICB						P
Potassium			21.5	B	NQ						P
Selenium			2.2	U							P
Silver			0.6	U							P
Sodium			159.5	U							P
Thallium			3.3	U							P
Vanadium			1.2	B	see PBLK						P
Zinc			5.2	U							P

GW24
29
19A

all Hg assoc

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			-0.117	B	See ICB						CV

all assoc

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-GW24-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	53.40	U	267.00	U			P
Antimony	2.40	U	38.52	B	100.0		P
Arsenic	6.43	B	20.72	B	222.2		P
Barium	67.03	B	68.49	B	2.2		P
Beryllium	0.42	U	2.10	U			P
Cadmium	0.64	U	3.20	U			P
Calcium	216513.00		221150.70		2.1		P
Chromium	7.17	B	14.54	B	102.8		P
Cobalt	1.60	U	8.00	U			P
Copper	3.66	B	18.11	B	394.8		P
Iron	107.33		292.79	B	172.8		P
Lead	1.40	U	7.00	U			P
Magnesium	8039.91		8136.72	B	1.2		P
Manganese	224.92		236.41		5.1		P
Nickel	15.04	B	21.52	B	43.1		P
Potassium	1716.00	B	1363.85	B	20.5	E	P
Selenium	2.86	B	11.00	U	100.0		P
Silver	0.62	U	3.10	U			P
Sodium	17558.97		17020.26	B	3.1		P
Thallium	3.30	U	20.07	B	100.0		P
Vanadium	1.02	B	4.81	B	371.6		P
Zinc	8.98	B	26.00	U	100.0		P

J/UJ

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 72278, CT Laboratories
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameter noted in the table below for SDG #s 72278. The data validation was performed in accordance with the SW-846 8330 for nitroguanidine only. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site.

Sample ID	Lab ID	Matrix	NG
YS06-GW12-0409	660758	water	X
YS06-GW12P-0409	660759	water	X
YS06-GW12-0409MS	660758MS	water	X
YS06-GW12-0409MSD	660758MSD	water	X
YS06-FB01-040109	660760	water	X
YS06-EB01-040209	660761	water	X

NG – nitroguanidine

The following quality control samples were provided with this SDG: sample YS06-EB01-040209-equipment blank; sample YS06-FB01-040109-field blank; and sample YS06-GW12P-0409-field duplicate of sample YS06-GW12-0409.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times
- Sample Condition *
- HPLC Performance *
- Initial/Continuing Calibrations *
- Blanks *
- Surrogates *
- Laboratory Control Samples *

- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates *
- Identification/Quantitation *
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No issues requiring the rejection of analytical data were noted in this data package.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

Nitroguanidine by 8330

The field blank sample was extracted one day outside the extraction holding time of seven days from sampling. The reported non-detect result in the sample was qualified as estimated UJ.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 4/1-2/09 and samples were received at the sub-contracting laboratory 4/7/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements with the following exception.

Holding Time

Nitroguanidine by 8330

Sample YS06-FB01-040109 was extracted one day outside the extraction holding time of seven days from sampling. The reported non-detect result in the sample was qualified as biased low UL with an HT qualifier code.

Reporting Limits

Nitroguanidine by 8330

The target compound did not meet the QAPP established method detection limits (MDLs) as noted on page 96 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. No validation action was required.

Compound	QAPP MDL (ug/L)	Lab MDL (ug/L)
nitroguanidine	25	26

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Nitroguanidine by 8330

Sample ID	Compound	Results	Q Flag	Q code
YS06-FB01-040109	nitroguanidine	-	UL	HT

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS06-GW12-0409

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660758
% Solids:		Date Received	04/07/2009
Conc. Extract Vol:	5.0 (mL)	Date Extracted	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 11:57	84	U	26	84

6409

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description:

YS06-GW12P-0409

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660759
% Solids:		Date Received:	04/07/2009
Conc. Extract Vol.	5.0 (mL)	Date Extracted:	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 12:25	84	U	26	84

JAC 6409

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS06-FB01-040109

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660760
% Solids:		Date Received:	04/07/2009
Conc. Extract Vol:	5.0 (mL)	Date Extracted:	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 12:34	84	J UL HT	26	84

JAC 6409

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS06-EB01-040209

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660761
% Solids:		Date Received:	04/07/2009
Conc. Extract Vol:	5.0 (mL)	Date Extracted:	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 12:43	84	U	26	84

JAC 04/09

COMPUCHEM

Project Name: CTO-166NWSY SITE 6

SDG #: 0

CTLabs Folder #: 72278

Project Number:

Matrix Spike Water

Analytical Run #:	56839	Analysis Date:	4/13/2009	Prep Batch #:	28620	Matrix:	GROUND WATER
CTLab #:	661464	Analysis Time:	12:06	Prep Date:	4/9/2009	Method:	SW8330B
Parent Sample #:	660758	Analyst:	RED	Prep Analyst:	RED		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,2-Dinitrobenzene	93.6	% Recovery				93.6	50 --- 150		
Nitroguanidine	964	ug/L	0		1000	96	50 --- 150		

JAC 4/09

COMPUCHEM

Project Name: CTO-166NWSY SITE 6

SDG #: 0

CTLabs Folder #: 72278

Project Number:

Matrix Spike Duplicate Water

Analytical Run #:	56839	Analysis Date:	4/13/2009	Prep Batch #:	28620	Matrix:	GROUND WATER
CTLab #:	661465	Analysis Time:	12:15	Prep Date:	4/9/2009	Method:	SW8330B
Parent Sample #:	661464	Analyst:	RED	Prep Analyst:	RED		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,2-Dinitrobenzene	93.8	% Recovery				93.8	50 --- 150		
Nitroguanidine	952	ug/L	0		1000	95	50 --- 150	1	30

JAC 6409

Holding Times

Sampling Date: 4/1-2/09
Received Date: 4/6/09 at compuchem
4/7/09 at subcontractor (CT Laboratories)
Extraction Dates: 4/9/09
Analysis Dates: 4/13/09

Sample receipt documentation was in order. Extraction holding time was exceeded for YS06-FB01-040109 by one day. Results reported in this sample were qualified as estimated UJ.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard six-point curve for the target compound and surrogate. Linear regression curves were plotted. Correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. Peak quality for nitroguanidine was not great but integration appeared consistent throughout the sequence. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory or field blanks.

SURROGATE RECOVERIES

All surrogate recovery criteria were met. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-GW12-0409 exhibited acceptable recoveries for nitroguanidine in both the MS & MSD. The RPD was also good. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compound. No qualifications were required.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW12-0409 **Duplicate ID:** YS06-GW12P-0409
Comments: No positive results for the target compound were reported in the samples.

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. Raw data was verified.

Reviewer JCleveland **Date:** 6409

LR Curve		HPLC2
	4/7/2009	
INTERCEPT	144.7064289	
SLOPE	451632.7041	
correlation coefficient	0.999924142	

CCV 4/7/09 at 1052

Y-	227295
x = (227295 - 144.7064289)/451632.7041	
x =	0.5030
Lab Value	0.504
%D =	-0.59%
Lab Value	0.78%

SLIGHT ROUNDING DIFFERENCES NOTED

Sample Calculation: 56839, 661464, msw

Compound:	nitroguanidine
Lab Value:	0.482 ug/ml
y =	217481
x = (217481 - 144.7064289)/451632.7041	
x in ug/ml	0.48122
Reported value in ug/L	964.00

rounding differences noted (0.2%D) - no impact - likely due to differences in curve plot

Case Narrative

Client: CompuChem
Project: CTO-166NWSY Site 6
Sample Receipt Date: 04/07/2008
SDG #: 69246

Four water samples were received for Nitroguanidine analysis. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

Two coolers were received with project samples. The "large" cooler had an intact custody seal present upon receipt. The "small" cooler had no custody seals present upon receipt but the tape on the cooler was intact.

Sample Analysis and Quality Control

Explosives Analysis:

The samples were analyzed using US EPA Method 8330. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Surrogate Recovery Data
Matrix Spike/Matrix Spike Duplicate Recovery Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log
Chromatograms

All analysis results met the method specified quality control criteria.

Notes regarding entire Chain of Custody:

Notes:
^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.
This report has been specifically prepared to satisfy project or program requirements. The test results in this report meet NELAP requirements for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Submitted by: PML

Pat M. Letterer
Project Manager
608-356-2760

Current CT Laboratories Certifications

Illinois NELAP ID# 200046

Kansas NELAP ID# E-10368

Kentucky ID# 0023

Pennsylvania NELAP ID# 68-04201

New Jersey NELAP ID# WI001

North Dakota ID# R-171

Wisconsin Chemistry ID# 157066030

Wisconsin Bacteriology ID# 105-289

ship Mon., NDA for Tues. "SDG 1" S 12976

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6	Samples shipped to: CT LABS	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: David Berwanger	Phone: (919) 379-4100 X ~~4050~~ 4089
Report style: Level III	Address: 1239 Lange Ct. Baraboo, WI 53913	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: ( )	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC2:

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other field blk

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other _____

DOD criteria

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Nitroguanidine 8330	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-GW12-0409	4/2	1325	2	F	U		S	4	X	✓	660358 / 0904014-02	USE FOR MS/MSD
YS06-GW12R-0409	4/2	1400	2	F	U		S	2		✓	660359 -03	
YS06-EB01-0409	4/1	1940	9	F	U		S	2		✓	660360 ✓ -~~04~~ 09	
YS06-EB01-0402	4/2	1510	4	F	U		S	2		✓	660361 ✓ -04	

4/3/09

Folder #: 72278
Company: COMPUCHEM
Project: CTO-166NWSY SITE 6
Logged By: JLS PM PM
°C

Clients Special Instructions:

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date: 4/6/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1340	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 4/7/09
Company Name:	Time:	Company Name:	Time:	Company Name: CT Laboratories	Time: 1026

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

012

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 10, 2009
SDG #s 0901126, 0902009, 0901127, 0902008 and 0901129, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0901126, 0902009, 0901127, 0902008 and 0901129. The data validation was performed in accordance with the SW-846 8260B for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94 (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable.

Sample ID	Lab ID	Matrix	VOA
SDG# 0901126			
YS01-DW001-0109	0901126-01	water	X
YS01-DW002-0109	0901126-02	water	X
SDG# 0902009			
YS01-DW004-0209	0902009-01	water	X
YS03-DW001-0209	0902009-02	water	X
YS03-DW002-0209	0902009-03	water	X
YS03-DW003-0209	0902009-04	water	X
YS03-DW004-0209	0902009-05	water	X
SDG#0901127			
YS01-SO01-0109	0901127-01	water	X
SDG# 0902008			
YS01-SO01-0209	0902008-01	water	X
SDG# 0901129			
YS01-DW003-0109	0901129-01	water	X

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- GC/MS Tuning *
- Initial/Continuing Calibrations
- Blanks
- Internal Standards *
- Surrogates *

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

SDG# 0901126

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-DW002-0109	methylene chloride	B	BL

SDG# 0902009

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all samples	methylene chloride	B	BL

SDG# 0901127

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKIV	methylene chloride	1.0J ug/L	5.0 ug/L	10 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-SO01-0109	methylene chloride	B	BL

SDG# 0901129

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-DW003-0109	methylene chloride	B	BL

Summary of Data Qualifications

VOA

SDG# 0901126

Sample ID	Compound	Results	Q Flag	Qual code
YS01-DW002-0109, YS01-DW001-0109DL	acetone	+/-	L/R	CCL
YS01-DW002-0109, YS01-DW001-0109DL	trichloroethene	+	J	CCH
YS01-DW002-0109	methylene chloride	+	B	BL
YS01-DW001-0109	all E-flagged results	+	R	DL
YS01-DW001-0109DL	all results except D-flagged compounds	+/-	R	DL
YS01-DW001-0109	vinyl chloride	+	J	LR

SDG# 0902009

Sample ID	Compound	Results	Q Flag	Qual code
all samples	acetone	+/-	L/R	CCL
all samples	chloromethane chloroethane	+	J	CCL
all samples	trichloroethene	+	J	CCH
all samples	methylene chloride	+	B	BL

SDG# 0901127

Sample ID	Compound	Results	Q Flag	Qual code
YS01-SO01-0109	acetone	+/-	L/R	ICL
YS01-SO01-0109	acetone*	+/-	L/R	CCL
YS01-SO01-0109	methylene chloride	+	B	BL

**qualified due to non-compliant initial calibration results*

SDG# 0902008

Sample ID	Compound	Results	Q Flag	Qual code
YS01-SO01-0209	acetone	+/-	L/R	ICL

SDG# 0901129

Sample ID	Compound	Results	Q Flag	Qual code
YS01-DW003-0109	acetone	+/-	L/R	CCL
YS01-DW003-0109	methylene chloride	+	B	BL

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SO01-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Matrix: (soil/water) SOIL Lab Sample ID: 0901127-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0901127-0159

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. 17 Date Analyzed: 01/30/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.0	U
74-87-3	Chloromethane	6.0	U
75-01-4	Vinyl Chloride	6.0	U
74-83-9	Bromomethane	6.0	U
75-00-3	Chloroethane	6.0	U
75-69-4	Trichlorofluoromethane	6.0	U
75-35-4	1,1-Dichloroethene	6.0	U
75-15-0	Carbon disulfide	6.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.0	U
67-64-1	Acetone	15	U R ICL
75-09-2	Methylene Chloride	1.2	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	6.0	U
1634-04-4	Methyl-tert-butyl ether	6.0	U
75-34-3	1,1-Dichloroethane	6.0	U
156-59-2	cis-1,2-Dichloroethene	6.0	U
78-93-3	2-butanone	15	U
67-66-3	Chloroform	6.0	U
71-55-6	1,1,1-Trichloroethane	6.0	U
56-23-5	Carbon Tetrachloride	6.0	U
71-43-2	Benzene	6.0	U
107-06-2	1,2-Dichloroethane	6.0	U
79-01-6	Trichloroethene	6.0	U
78-87-5	1,2-Dichloropropane	6.0	U
75-27-4	Bromodichloromethane	6.0	U
10061-01-5	cis-1,3-Dichloropropene	6.0	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	6.0	U
10061-02-6	trans-1,3-Dichloropropene	6.0	U
79-00-5	1,1,2-Trichloroethane	6.0	U
127-18-4	Tetrachloroethene	6.0	U
591-78-6	2-hexanone	15	U
124-48-1	Dibromochloromethane	6.0	U
106-93-4	1,2-Dibromoethane	6.0	U

JAC 02809

FORM I VOA

060909

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-16

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	173	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	2.8	U		P	
7440-39-3	Barium	23.9	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	34300			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	1.2	~~B~~	~~B BL~~	P	J x1 corr JAC 6809
7439-89-6	Iron	26.1	~~B~~	B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	516	~~B~~	J	P	
7439-96-5	Manganese	5.4	~~B~~	J	P	
7439-97-6	Mercury	0.15	~~B~~	J L	CV	BL JAC 6/28/09
7440-02-0	Nickel	7.1	~~B~~	J	P	
7440-09-7	Potassium	11300		~~J~~ SD	P	
7782-49-2	Selenium	4.1	U		P	
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	7020			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.55	~~B~~	B BL	P	
7440-66-6	Zinc	3.7	~~B~~	B BL	P	

JAC 6809

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS03-EB02-031809	chloromethane	0.19J	0.5	0.95
	acetone	7.4	2.5	74
	methylene chloride	3.1	0.5	31
	2-butanone	1.9J	2.5	19
	chloroform	0.22J	0.5	1.1
	toluene	0.34J	0.5	1.7
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
YS01-FB01-031609	chloromethane	0.24J	0.5	1.2
	acetone	2.9	2.5	29
	methylene chloride	9.7	0.5	97
	chloroform	0.66	0.5	3.3
	toluene	0.92	0.5	4.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309, YS01-GW22P-0309	methylene chloride	B	BL
YS03-GW08B-0309	2-hexanone	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	B	BL
YS03-GW21-0309	2-butanone	B	BL

Total and Dissolved Metals

Preparation, calibration and field blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	nickel	1.003B ug/L	5.015 ug/L	B	BL
	zinc	5.517B ug/L	27.585 ug/L	B	BL
ICB/CCB – dissolved metals	aluminum	74.2 B ug/L	371 ug/L	B	BL
	antimony	3.1B ug/L	15.5 ug/L	B	BL
	arsenic	2.5B ug/L	12.5 ug/L	B	BL
	beryllium	1.9B ug/L	9.5 ug/L	B	BL
	cadmium	0.9B ug/L	4.5 ug/L	B	BL
	cobalt	2.5b ug/L	12.5 ug/L	B	BL
	iron	29.2B ug/L	146 ug/L	B	BL
	selenium	2.7B ug/L	13.5 ug/L	B	BL
	thallium	4.7B ug/L	23.5 ug/L	B	BL
	copper	-1.5 ug/L	≤ 10X MDL (8.0 ug/L)	L/UL	BL
YS03-FB01-031909 –dissolved	potassium	592B ug/L	2960 ug/L	B	BL
YS01-EB01-031309-dissolved	manganese	0.43B ug/L	2.15 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW21-0309	nickel	B	BL
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309	zinc	B	BL
YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	B	BL
YS01-GW04A-0309	antimony	B	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	B	BL
YS01-GW04A-0309	iron	B	BL
YS01-GW22-0309	selenium	B	BL
YS01-GW14-0309	thallium	B	BL
all field samples	copper	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	B	BL
YS01-GW12-0309	manganese	B	BL

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS01-TB01-031309	all results	+/-	L/UL	OT
YS01-GW12-0309	acetone	+/-	L/R	CCL
YS01-GW14-0309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW22P-0309	2-butanone	+/-	L/R	ICL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	acetone	+/-	L/R	ICL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	acetone* 2-butanone	+/-	L/R	CCL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	chloromethane	+	J	CCH
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	acetone*	+/-	L/R	CCL
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	+	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	+	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	+	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS01GW22P-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	+	B	BL
YS03-GW08B-0309	2-hexanone	+	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	+	B	BL
YS03-GW21-0309	2-butanone	+	B	BL

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS01-GW04A-0309	trichloroethene	+	J	MSH
YS01-GW12-0309, YS01-GW22-0309, YS01-GW22P-0309	all E-flagged results	+	R	DL
YS01-GW12-0309DL, YS01-GW22-0309DL, YS01-GW22P-0309DL	all results except D-flagged compounds	+/-	R	DL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	antimony	+ up to action level	B	BL
all total metals field samples	lead	+/- up to action level	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	+/- up to action level	L/UL	BL
YS03-GW18-0309	iron	+ up to action level	B	BL
YS03-GW18-0309	manganese	+ up to action level	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	+ up to action level	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	+ up to action level	B	BL
YS03-GW21-0309	beryllium	+ up to action level	B	BL
all total metals field samples	selenium	+/-	L/UL	MSL
all total metals field samples	potassium	+/-	J/UJ	SD
YS01-GW22-0309, YS01-GW22P-0309	aluminum iron	+	J	FD
all samples	all analytes	+B	J	

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW21-0309	nickel	+ up to action level	B	BL
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309	zinc	+ up to action level	B	BL
YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	+ up to action level	B	BL
YS01-GW04A-0309	antimony	+ up to action level	B	BL

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	+ up to action level	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	+ up to action level	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	+ up to action level	B	BL
YS01-GW04A-0309	iron	+ up to action level	B	BL
YS01-GW22-0309	selenium	+ up to action level	B	BL
YS01-GW14-0309	thallium	+ up to action level	B	BL
all field samples	copper	+/- up to action level	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	+ up to action level	B	BL
YS01-GW12-0309	manganese	+ up to action level	B	BL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
YS01-GW22-0309, YS01-GW22P-0309	aluminum* iron	+	J	FD
all samples	all analytes	+B	J	

*aluminum in field dup sample was flagged B due to blank contamination

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309, YS03-GW25P-0309	acetone	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	B	BL
YS03-GW20-0309	2-butanone	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	beryllium	0.771B ug/L	3.855 ug/L	B	BL
	chromium	0.865B ug/L	4.325 ug/L	B	BL
	copper	-1.629B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	lead	-1.867B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	nickel	0.885B ug/L	4.425 ug/L	B	BL
ICB/CCB	antimony	2.4B ug/L	12 ug/L	B	BL
	vanadium	0.6B ug/L	3.0 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	beryllium	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	B	BL
all total metals field samples	copper	L/UL	BL
all total metals field samples	lead	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	B	BL
all total metals field samples	antimony	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	B	BL

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS03-GW28-0309	all results	+/-	L/UL	OT
all samples	acetone	+/-	L/R	ICL
all samples	acetone*	+/-	L/R	CCL
all samples	chloromethane	+	J	CCL
YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009, YS03-TB01-032009	2-butanone	+/-	L/R	CCL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	+	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309, YS03-GW25P-0309	acetone	+	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	+	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	+	B	BL
YS03-GW20-0309	2-butanone	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	beryllium	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	+ up to action level	B	BL
all total metals field samples	copper	+/- up to action level	L/UL	BL
all total metals field samples	lead	+/- up to action level	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	+ up to action level	B	BL
all total metals field samples	antimony	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	+ up to action level	B	BL
all total metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

QC 6/2009

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all field samples	chloromethane	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05BP-0309	acetone	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW1 – total metals	beryllium	0.542B ug/L	2.71 ug/L	B	BL
PBW2 – total metals	antimony	2.662B ug/L	13.3 ug/L	B	BL
	chromium	1.253B ug/L	6.265 ug/L	B	BL
	copper	0.969B ug/L	4.845 ug/L	B	BL
	nickel	0.847B ug/L	4.235 ug/L	B	BL
	vanadium	0.669B ug/L	3.345 ug/L	B	BL
	beryllium	-0.672B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-1.953B	≤ 10X MDL (16 ug/L)	L/UL	BL
ICB/CCB Run #2	antimony	3.3B ug/L	16.5 ug/L	B	BL
	chromium	2.0B ug/L	10 ug/L	B	BL
	copper	1.9B ug/L	9.5 ug/L	B	BL
	nickel	0.9B ug/L	4.5 ug/L	B	BL
	vanadium	0.9B ug/L	4.5 ug/L	B	BL
	beryllium	-0.9B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-2.0B	≤ 10X MDL (16 ug/L)	L/UL	BL

Total Metals

Sample ID	Analyte	Q Flag	Q Code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	antimony	B	BL
YS06-GW10-0309	beryllium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	L/UL	BL

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS06-TB01-032409, YS06-TB01-032509	all results	+/-	L/UL	OT
all samples	acetone	+/-	L/R	ICL
all samples	acetone* 2-butanone	+/-	L/R	CCL
all samples	chloromethane	+	J	CCL
YS06-TB01-032309	2-hexanone	+	J	CCL
all field samples	chloromethane	+	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05BP-0309	acetone	+	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	+	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	antimony	+ up to action level	B	BL
YS06-GW10-0309	beryllium	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	+/- up to action level	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	+/- up to action level	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	+ up to action level	B	BL
all samples	all analytes	+B	J	

O/O RJC 62809

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW01-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-02

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	13.3		~~J~~ L	P	MSL
7440-39-3	Barium	19.7	~~B~~	~~J~~ L	P	MSL
7440-41-7	Beryllium	0.42	~~B~~	B BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	69200			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~U~~	UL	P	BL JAC 62809
7439-89-6	Iron	19900			P	
7439-92-1	Lead	1.4	~~B~~	~~J~~ UL	P	BL
7439-95-4	Magnesium	7980			P	
7439-96-5	Manganese	551			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	3450	~~B~~	~~J~~ J SD	P	
7782-49-2	Selenium	4.1	~~B~~	~~J~~ B BL	P	
7440-22-4	Silver	0.62	~~U~~	~~J~~ UL	P	MSL
7440-23-5	Sodium	9400			P	
7440-28-0	Thallium	3.3	~~U~~	~~J~~ UL	P	MSL
7440-62-2	Vanadium	1.2	~~B~~	~~J~~ J	P	L MSL x2 Corr JAC 61009
7440-66-6	Zinc	5.2	U		P	

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW01P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-03

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	12.4		L	P	MSL
7440-39-3	Barium	19.2	B	↓	P	↓
7440-41-7	Beryllium	0.42	U	UL	P	MSL
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	69300			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U	UL	P	BL JC 62809
7439-89-6	Iron	19000			P	
7439-92-1	Lead	1.4	U	UL	P	MSL
7439-95-4	Magnesium	7750			P	
7439-96-5	Manganese	533			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	3380	B	J SD	P	
7782-49-2	Selenium	2.6	B	BL	P	
7440-22-4	Silver	0.62	U	UL	P	MSL
7440-23-5	Sodium	9370			P	
7440-28-0	Thallium	3.3	U	UL	P	MSL
7440-62-2	Vanadium	1.1	B	L	P	↓
7440-66-6	Zinc	7.8	B	J	P	

JC 61809

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW02-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-06

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.2	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	32.2	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	82000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~U~~	UL	P	BL JAC 62809
7439-89-6	Iron	397			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	2210	~~B~~	J	P	
7439-96-5	Manganese	27.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.72	~~B~~	B BL	P	
7440-09-7	Potassium	1300	~~B~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	4530	~~B~~	J	P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~B~~	UL	P	
7440-66-6	Zinc	5.2	U		P	

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW03-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-14

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.3	U		P	
7440-38-2	Arsenic	2.3	B	L	P	MSL
7440-39-3	Barium	23.1	B	L	P	
7440-41-7	Beryllium	0.42	U	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	93100			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U	UL	P	BL QAC 032809
7439-89-6	Iron	236			P	
7439-92-1	Lead	1.4	U	UL	P	MSL
7439-95-4	Magnesium	2550	B	J	P	
7439-96-5	Manganese	9.4	B	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.94	B	B BL	P	
7440-09-7	Potassium	3900	B	EJ SD	P	
7782-49-2	Selenium	2.4	B	B BL	P	
7440-22-4	Silver	0.62	U	UL	P	MSL
7440-23-5	Sodium	5900			P	
7440-28-0	Thallium	4.1	B	L	P	MSL
7440-62-2	Vanadium	0.57	U	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

QAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW05B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-18

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	4.0	~~B~~	~~B~~ L	P	MSL
7440-39-3	Barium	24.4	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	↓
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	112000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~U~~	UL	P	BL JAC 62809
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~U~~ UL	P	MSL
7439-95-4	Magnesium	2730	~~B~~	J	P	
7439-96-5	Manganese	8.5	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.5	~~B~~	B BL	P	
7440-09-7	Potassium	849	~~B~~	BJSN	P	
7782-49-2	Selenium	3.3	~~B~~	~~B BL~~	P	L MSL
7440-22-4	Silver	0.62	~~U~~	~~U~~ UL	P	MSL
7440-23-5	Sodium	8290			P	
7440-28-0	Thallium	3.3	~~U~~	~~U~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW05BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-19

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.6	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	24.1	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	112000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~U~~	UL	P	BL QC 62909
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	2670	~~B~~	J	P	
7439-96-5	Manganese	12.3			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	835	~~B~~	~~B~~ J SD	P	
7782-49-2	Selenium	4.0	~~B~~	~~X B BL~~	P	L MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	8160			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.87	~~B~~	B BL	P	
7440-66-6	Zinc	5.2	U		P	

QC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW07-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-17

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.3	~~B~~	~~X~~ L	P
7440-39-3	Barium	37.4	~~B~~	L	P
7440-41-7	Beryllium	0.42	~~U~~	UL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	124000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	UL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P
7439-95-4	Magnesium	5100			P
7439-96-5	Manganese	45.8			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	~~B~~	B BL	P
7440-09-7	Potassium	1100	~~B~~	~~E~~ J SD	P
7782-49-2	Selenium	3.0	~~B~~	~~X~~ L	P
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P
7440-23-5	Sodium	37000			P
7440-28-0	Thallium	3.7	~~B~~	~~X~~ B BL	P
7440-62-2	Vanadium	0.62	~~B~~	B BL	P
7440-66-6	Zinc	6.0	~~B~~	J	P

MSL ↓ MSL ↓ MSL ↓ BL

JAC 6/2009

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW09-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-15

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.2	~~U~~	~~X~~ UL	P	MSL
7440-39-3	Barium	55.9	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~U~~	UL	P	BL JAC 62809
7439-89-6	Iron	254			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	12600			P	
7439-96-5	Manganese	119			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.6	~~B~~	B BL	P	
7440-09-7	Potassium	4010	~~B~~	~~B~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ UL	P	R MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	260000			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.78	~~B~~	B BL	P	
7440-66-6	Zinc	5.2	U		P	

XICorr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW09A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-16

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	6.2	~~B~~	~~W~~ L	P	MSL
7440-39-3	Barium	63.4	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	46500			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	4.1	~~B~~	J L	P	BL JAC 6/28/09
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~W~~ UL	P	MSL
7439-95-4	Magnesium	1170	~~B~~	J	P	
7439-96-5	Manganese	8.7	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	~~B~~	B BL	P	
7440-09-7	Potassium	4670	~~B~~	EJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~W~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~W~~ UL	P	MSL
7440-23-5	Sodium	59500			P	
7440-28-0	Thallium	3.3	~~U~~	~~W~~ UL	P	MSL
7440-62-2	Vanadium	0.90	~~B~~	B BL	P	
7440-66-6	Zinc	9.7	~~B~~	J	P	

JAC 6/28/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-10

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	4.5	~~B~~	~~W~~ L	P	MSL
7440-39-3	Barium	31.8	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	130000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~U~~	UL	P	BL
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~W~~ UL	P	MSL
7439-95-4	Magnesium	6330			P	
7439-96-5	Manganese	3.0	~~B~~	J	P	
7439-97-6	Mercury	0.14	~~B~~	J	CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	2830	~~B~~	~~B~~ JSD	P	
7782-49-2	Selenium	4.3	~~B~~	~~W~~ BL	P	
7440-22-4	Silver	0.62	~~U~~	~~W~~ UL	P	MSL
7440-23-5	Sodium	39800			P	
7440-28-0	Thallium	3.3	~~U~~	~~W~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

6/29/09

6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-09

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.4	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	30.7	~~B~~	L	P	↓
7440-41-7	Beryllium	0.92	~~B~~	B BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	62600			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	~~B~~	U L	P	BL JDC 62809
7439-89-6	Iron	3100			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	4700	~~B~~	J	P	
7439-96-5	Manganese	112			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.70	~~B~~	B BL	P	
7440-09-7	Potassium	3200	~~B~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	7650			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	5.2	U		P	

JDC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-11

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.4	B	L	P	MSL
7440-39-3	Barium	20.8	B	L	P	
7440-41-7	Beryllium	0.42	B	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	93900			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U	UL	P	BL JAC 062809
7439-89-6	Iron	382			P	
7439-92-1	Lead	1.4	B	UL	P	MSL
7439-95-4	Magnesium	7300			P	
7439-96-5	Manganese	10.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.96	B	B BL	P	
7440-09-7	Potassium	3700	B	J SN	P	
7782-49-2	Selenium	2.2	U	R	P	MSL
7440-22-4	Silver	0.62	U	UL	P	MSL
7440-23-5	Sodium	31500			P	
7440-28-0	Thallium	3.3	B	UL	P	MSL
7440-62-2	Vanadium	0.57	B	UL	P	
7440-66-6	Zinc	7.5	B	J	P	

JAC 061009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 10, 2009
SDG #s 0901126, 0902009, 0901127, 0902008 and 0901129, CompuChem
NAB Little Creek

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0901126, 0902009, 0901127, 0902008 and 0901129. The data validation was performed in accordance with the SW-846 8260B for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94 (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable.

Sample ID	Lab ID	Matrix	VOA
SDG# 0901126			
YS01-DW001-0109	0901126-01	water	X
YS01-DW002-0109	0901126-02	water	X
SDG# 0902009			
YS01-DW004-0209	0902009-01	water	X
YS03-DW001-0209	0902009-02	water	X
YS03-DW002-0209	0902009-03	water	X
YS03-DW003-0209	0902009-04	water	X
YS03-DW004-0209	0902009-05	water	X
SDG#0901127			
YS01-SO01-0109	0901127-01	water	X
SDG# 0902008			
YS01-SO01-0209	0902008-01	water	X
SDG# 0901129			
YS01-DW003-0109	0901129-01	water	X

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- GC/MS Tuning *
- Initial/Continuing Calibrations
- Blanks
- Internal Standards *
- Surrogates *

- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Field Duplicates NA
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

SDG#s 0901126, 0902009 and 0901129

The continuing calibrations exhibited low RRF values that required non-detected values be rejected.

SDG#s 0901127

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

SDG#s 0902008

The initial calibration exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

SDG# 0901126

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

One of the samples required a dilution to obtain results within the calibration range.

SDG# 0902009

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

SDG# 0901127

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

SDG# 0901129

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 01/29/09 through 02/02/09 and samples were received at the laboratory 01/30/09 through 02/03/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

SDG# 0901126

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 02/03/09	acetone	0.0379	YS01-DW002-0109, YS01-DW001-0109DL	L/R	CCL
	trichloroethene	22.95		J	CCH

SDG# 0902009

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 02/03/09	acetone	0.0379	all samples	L/R	CCL
	chloromethane chloroethane	-23.99 -28.45		J	CCL
	trichloroethene	22.95		J	CCH

SDG# 0901127

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 01/24/09	acetone	0.0447	YS01-SO01-0109	L/R	ICL
CC 01/30/09	acetone	0.0476	YS01-SO01-0109	L/R	CCL

SDG# 0902008

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 02/06/09	acetone	0.0394	YS01-SO01-0209	L/R	ICL

SDG# 0901129

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 02/03/09	acetone	0.0379	YS01-DW003-01-09	L/R	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

SDG# 0901126

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-DW002-0109	methylene chloride	B	BL

SDG# 0902009

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all samples	methylene chloride	B	BL

SDG# 0901127

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKIV	acetone	1.0J ug/L	5.0 ug/L	10 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-SO01-0109	acetone	B	BL

SDG# 0901129

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-DW003-0109	methylene chloride	B	BL

Identification/Quantitation

VOA

SDG# 0901126

A dilution was required for sample YS01-DW001-0109 to obtain results within the calibration range. Therefore, E-flagged compound results were not used in the initial analysis of these samples in favor of the corresponding D-flagged compound result in the dilution, qualifier code: DL.

The dilution for sample YS01-DW001-0109 diluted out results for vinyl chloride; therefore results above the calibration range were used from the initial analysis and qualified as estimated (J), qualifier code: LR.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff

Laura Maschhoff
President

Summary of Data Qualifications

VOA

SDG# 0901126

Sample ID	Compound	Results	Q Flag	Qual code
YS01-DW002-0109, YS01-DW001-0109DL	acetone	+/-	L/R	CCL
YS01-DW002-0109, YS01-DW001-0109DL	trichloroethene	+	J	CCH
YS01-DW002-0109	methylene chloride	+	B	BL
YS01-DW001-0109	all E-flagged results	+	R	DL
YS01-DW001-0109DL	all results except D-flagged compounds	+/-	R	DL
YS01-DW001-0109	vinyl chloride	+	J	LR

SDG# 0902009

Sample ID	Compound	Results	Q Flag	Qual code
all samples	acetone	+/-	L/R	CCL
all samples	chloromethane chloroethane	+	J	CCL
all samples	trichloroethene	+	J	CCH
all samples	methylene chloride	+	B	BL

SDG# 0901127

Sample ID	Compound	Results	Q Flag	Qual code
YS01-SO01-0109	acetone**	+/-	L/R	ICL
YS01-SO01-0109	acetone*	+/-	L/R	CCL
YS01-SO01-0109	acetone	+	B	BL

**qualified due to non-compliant initial calibration results*
***final qualifier due to blank contamination*

SDG# 0902008

Sample ID	Compound	Results	Q Flag	Qual code
YS01-SO01-0209	acetone	+/-	L/R	ICL

SDG# 0901129

Sample ID	Compound	Results	Q Flag	Qual code
YS01-DW003-0109	acetone	+/-	L/R	CCL
YS01-DW003-0109	methylene chloride	+	B	BL

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW001-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0171

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.94	
75-01-4	Vinyl Chloride	32	~~E~~ J, LR
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.61	
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	21	
75-15-0	Carbon disulfide	0.28	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	26	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	14	
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	910	~~E~~ RDL
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.15	J
107-06-2	1,2-Dichloroethane	0.12	J
79-01-6	Trichloroethene	1300	~~E~~ RDL
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	3.1	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	1.7	
127-18-4	Tetrachloroethene	0.52	
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

060809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW001-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0171

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.16	J
108-38-3	m,p-Xylene	0.75	J
95-47-6	o-Xylene	0.31	J
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	910	E RDL
1330-20-7	Xylene (total)	1.1	
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

LM 060809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-DW0
01-0109DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01RE1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-01D71

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 714.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	360	U RDL
74-87-3	Chloromethane	360	U
75-01-4	Vinyl Chloride	360	U
74-83-9	Bromomethane	360	U
75-00-3	Chloroethane	360	U
75-69-4	Trichlorofluoromethane	360	U
75-35-4	1,1-Dichloroethene	360	U
75-15-0	Carbon disulfide	360	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	360	U
67-64-1	Acetone	1800	U
79-20-9	Methyl acetate	360	U
75-09-2	Methylene Chloride	180	DJB
156-60-5	trans-1,2-Dichloroethene	360	U
1634-04-4	Methyl-tert-butyl ether	360	U
75-34-3	1,1-Dichloroethane	360	U
156-59-2	cis-1,2-Dichloroethene	1700	D
78-93-3	2-butanone	1800	U RDL
67-66-3	Chloroform	360	U
71-55-6	1,1,1-Trichloroethane	360	U
56-23-5	Carbon Tetrachloride	360	U
71-43-2	Benzene	360	U
107-06-2	1,2-Dichloroethane	360	U
79-01-6	Trichloroethene	11000	D J CCH
78-87-5	1,2-Dichloropropane	360	U RDL
75-27-4	Bromodichloromethane	360	U
10061-01-5	cis-1,3-Dichloropropene	360	U
108-10-1	4-Methyl-2-pentanone	1800	U
108-88-3	Toluene	360	U
10061-02-6	trans-1,3-Dichloropropene	360	U
79-00-5	1,1,2-Trichloroethane	360	U
127-18-4	Tetrachloroethene	360	U
591-78-6	2-hexanone	1800	U
124-48-1	Dibromochloromethane	360	U

FORM I VOA

060809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-DW0
01-0109DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01RE1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-01D71

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 714.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	360	U	RDL
108-90-7	Chlorobenzene	360	U	
100-41-4	Ethylbenzene	360	U	
108-38-3	m,p-Xylene	710	U	
95-47-6	o-Xylene	360	U	
100-42-5	Styrene	360	U	
75-25-2	Bromoform	360	U	
98-82-8	Isopropyl Benzene	360	U	
79-34-5	1,1,2,2-Tetrachloroethane	360	U	
541-73-1	1,3-Dichlorobenzene	360	U	
106-46-7	1,4-Dichlorobenzene	360	U	
95-50-1	1,2-Dichlorobenzene	360	U	
96-12-8	1,2-Dibromo-3-Chloropropane	360	U	
120-82-1	1,2,4-Trichlorobenzene	360	U	
540-59-0	1,2-Dichloroethene (total)	1700	D	
1330-20-7	Xylene (total)	360	U	RDL
110-82-7	Cyclohexane	360	U	
108-87-2	Methylcyclohexane	360	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW002-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0271

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	~~J~~ L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.26	~~JB~~ BBL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	8.5	
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.49	~~J~~ JCCH
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.37	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 06/08/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW002-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0271

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.66	
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0171

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.20	J
75-15-0	Carbon disulfide	0.21	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.4	L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.18 JB	B BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.80	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.16 J	J CCH
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.18	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0171

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.24	J
108-38-3	m,p-Xylene	0.24	J
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.26	J
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

06/09/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW001-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0271

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 3.6

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.8	U
74-87-3	Chloromethane	1.1	~~J~~ J CCL
75-01-4	Vinyl Chloride	1.8	
74-83-9	Bromomethane	1.8	U
75-00-3	Chloroethane	1.8	U
75-69-4	Trichlorofluoromethane	1.8	U
75-35-4	1,1-Dichloroethene	1.8	U
75-15-0	Carbon disulfide	1.8	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	1.8	U
67-64-1	Acetone	15	L CCL
79-20-9	Methyl acetate	1.8	U
75-09-2	Methylene Chloride	0.66	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	1.8	U
1634-04-4	Methyl-tert-butyl ether	1.8	U
75-34-3	1,1-Dichloroethane	1.8	U
156-59-2	cis-1,2-Dichloroethene	65	
78-93-3	2-butanone	8.9	U
67-66-3	Chloroform	1.8	U
71-55-6	1,1,1-Trichloroethane	1.8	U
56-23-5	Carbon Tetrachloride	1.8	U
71-43-2	Benzene	1.8	U
107-06-2	1,2-Dichloroethane	1.8	U
79-01-6	Trichloroethene	16	J CCH
78-87-5	1,2-Dichloropropane	1.8	U
75-27-4	Bromodichloromethane	1.8	U
10061-01-5	cis-1,3-Dichloropropene	1.8	U
108-10-1	4-Methyl-2-pentanone	8.9	U
108-88-3	Toluene	0.57	J
10061-02-6	trans-1,3-Dichloropropene	1.8	U
79-00-5	1,1,2-Trichloroethane	1.8	U
127-18-4	Tetrachloroethene	1.8	U
591-78-6	2-hexanone	8.9	U
124-48-1	Dibromochloromethane	1.8	U

FORM I VOA

MM 060104

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW001-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0271

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 3.6

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.8	U
108-90-7	Chlorobenzene	1.8	U
100-41-4	Ethylbenzene	0.61	J
108-38-3	m,p-Xylene	3.6	U
95-47-6	o-Xylene	1.8	U
100-42-5	Styrene	1.8	U
75-25-2	Bromoform	1.8	U
98-82-8	Isopropyl Benzene	1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	1.8	U
541-73-1	1,3-Dichlorobenzene	1.8	U
106-46-7	1,4-Dichlorobenzene	1.8	U
95-50-1	1,2-Dichlorobenzene	1.8	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.8	U
120-82-1	1,2,4-Trichlorobenzene	1.8	U
540-59-0	1,2-Dichloroethene (total)	64	
1330-20-7	Xylene (total)	1.8	U
110-82-7	Cyclohexane	1.8	U
108-87-2	Methylcyclohexane	1.8	U

060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW002-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0371

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	3.0		L CCL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.25	~~JB~~	B BL
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.12	J	
156-59-2	cis-1,2-Dichloroethene	0.25	J	
78-93-3	2-butanone	2.5	U	
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	3.1		J CCH
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.42	J	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

02/09/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW002-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0371

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.82	
108-38-3	m,p-Xylene	0.24	J
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.25	J
1330-20-7	Xylene (total)	0.25	J
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-DW003-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0471

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	17	
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.41	~~J~~ J CCL
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.4	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.23	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.49	J
156-59-2	cis-1,2-Dichloroethene	12	
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.24	J
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.32	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060409

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW003-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0471

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.54	
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.14	J
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.14	J
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	0.14	J
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.12	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0571

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 71.4

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	36	U
74-87-3	Chloromethane	20	~~U~~ J CCL
75-01-4	Vinyl Chloride	690	
74-83-9	Bromomethane	36	U
75-00-3	Chloroethane	36	U
75-69-4	Trichlorofluoromethane	36	U
75-35-4	1,1-Dichloroethene	12	J
75-15-0	Carbon disulfide	36	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	36	U
67-64-1	Acetone	180	~~U~~ R CCL
79-20-9	Methyl acetate	36	U
75-09-2	Methylene Chloride	13	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	36	U
1634-04-4	Methyl-tert-butyl ether	36	U
75-34-3	1,1-Dichloroethane	8.1	J
156-59-2	cis-1,2-Dichloroethene	1100	
78-93-3	2-butanone	180	U
67-66-3	Chloroform	36	U
71-55-6	1,1,1-Trichloroethane	36	U
56-23-5	Carbon Tetrachloride	36	U
71-43-2	Benzene	36	U
107-06-2	1,2-Dichloroethane	36	U
79-01-6	Trichloroethene	270	J CCH
78-87-5	1,2-Dichloropropane	36	U
75-27-4	Bromodichloromethane	36	U
10061-01-5	cis-1,3-Dichloropropene	36	U
108-10-1	4-Methyl-2-pentanone	180	U
108-88-3	Toluene	36	U
10061-02-6	trans-1,3-Dichloropropene	36	U
79-00-5	1,1,2-Trichloroethane	36	U
127-18-4	Tetrachloroethene	36	U
591-78-6	2-hexanone	180	U
124-48-1	Dibromochloromethane	36	U

FORM I VOA

DL 02/09/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0571

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 71.4

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	36	U
108-90-7	Chlorobenzene	36	U
100-41-4	Ethylbenzene	36	U
108-38-3	m,p-Xylene	71	U
95-47-6	o-Xylene	36	U
100-42-5	Styrene	36	U
75-25-2	Bromoform	36	U
98-82-8	Isopropyl Benzene	36	U
79-34-5	1,1,2,2-Tetrachloroethane	36	U
541-73-1	1,3-Dichlorobenzene	36	U
106-46-7	1,4-Dichlorobenzene	36	U
95-50-1	1,2-Dichlorobenzene	36	U
96-12-8	1,2-Dibromo-3-Chloropropane	36	U
120-82-1	1,2,4-Trichlorobenzene	36	U
540-59-0	1,2-Dichloroethene (total)	1100	
1330-20-7	Xylene (total)	36	U
110-82-7	Cyclohexane	36	U
108-87-2	Methylcyclohexane	36	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SO01-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Matrix: (soil/water) SOIL Lab Sample ID: 0901127-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0901127-0159

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. 17 Date Analyzed: 01/30/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.0	U
74-87-3	Chloromethane	6.0	U
75-01-4	Vinyl Chloride	6.0	U
74-83-9	Bromomethane	6.0	U
75-00-3	Chloroethane	6.0	U
75-69-4	Trichlorofluoromethane	6.0	U
75-35-4	1,1-Dichloroethene	6.0	U
75-15-0	Carbon disulfide	6.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.0	U
67-64-1	Acetone	15	U
75-09-2	Methylene Chloride	1.2	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	6.0	U
1634-04-4	Methyl-tert-butyl ether	6.0	U
75-34-3	1,1-Dichloroethane	6.0	U
156-59-2	cis-1,2-Dichloroethene	6.0	U
78-93-3	2-butanone	15	U
67-66-3	Chloroform	6.0	U
71-55-6	1,1,1-Trichloroethane	6.0	U
56-23-5	Carbon Tetrachloride	6.0	U
71-43-2	Benzene	6.0	U
107-06-2	1,2-Dichloroethane	6.0	U
79-01-6	Trichloroethene	6.0	U
78-87-5	1,2-Dichloropropane	6.0	U
75-27-4	Bromodichloromethane	6.0	U
10061-01-5	cis-1,3-Dichloropropene	6.0	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	6.0	U
10061-02-6	trans-1,3-Dichloropropene	6.0	U
79-00-5	1,1,2-Trichloroethane	6.0	U
127-18-4	Tetrachloroethene	6.0	U
591-78-6	2-hexanone	15	U
124-48-1	Dibromochloromethane	6.0	U
106-93-4	1,2-Dibromoethane	6.0	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SO01-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Matrix: (soil/water) SOIL Lab Sample ID: 0901127-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0901127-0159

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. 17 Date Analyzed: 01/30/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	6.0	U
100-41-4	Ethylbenzene	6.0	U
100-42-5	Styrene	6.0	U
75-25-2	Bromoform	6.0	U
98-82-8	Isopropyl Benzene	6.0	U
79-34-5	1,1,2,2-Tetrachloroethane	6.0	U
541-73-1	1,3-Dichlorobenzene	6.0	U
106-46-7	1,4-Dichlorobenzene	6.0	U
95-50-1	1,2-Dichlorobenzene	6.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.0	U
120-82-1	1,2,4-Trichlorobenzene	6.0	U
1330-20-7	Xylene (total)	6.0	U
79-20-9	Methyl acetate	6.0	U
110-82-7	Cyclohexane	6.0	U
108-87-2	Methylcyclohexane	6.0	U
108-38-3	m,p-Xylene (part of total)	12	U
95-47-6	o-Xylene (part of total)	6.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-SO01-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Matrix: (soil/water) SOIL Lab Sample ID: 0902008-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0902008-01R59

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. 26 Date Analyzed: 02/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.8	U
74-87-3	Chloromethane	6.8	U
75-01-4	Vinyl Chloride	6.8	U
74-83-9	Bromomethane	6.8	U
75-00-3	Chloroethane	6.8	U
75-69-4	Trichlorofluoromethane	6.8	U
75-35-4	1,1-Dichloroethene	6.8	U
75-15-0	Carbon disulfide	6.8	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.8	U
67-64-1	Acetone	28	L ICL
75-09-2	Methylene Chloride	6.8	U
156-60-5	trans-1,2-Dichloroethene	6.8	U
1634-04-4	Methyl-tert-butyl ether	6.8	U
75-34-3	1,1-Dichloroethane	6.8	U
156-59-2	cis-1,2-Dichloroethene	11	
78-93-3	2-butanone	17	U
67-66-3	Chloroform	6.8	U
71-55-6	1,1,1-Trichloroethane	6.8	U
56-23-5	Carbon Tetrachloride	6.8	U
71-43-2	Benzene	6.8	U
107-06-2	1,2-Dichloroethane	6.8	U
79-01-6	Trichloroethene	14	
78-87-5	1,2-Dichloropropane	6.8	U
75-27-4	Bromodichloromethane	6.8	U
10061-01-5	cis-1,3-Dichloropropene	6.8	U
108-10-1	4-Methyl-2-pentanone	17	U
108-88-3	Toluene	6.8	U
10061-02-6	trans-1,3-Dichloropropene	6.8	U
79-00-5	1,1,2-Trichloroethane	6.8	U
127-18-4	Tetrachloroethene	6.8	U
591-78-6	2-hexanone	17	U
124-48-1	Dibromochloromethane	6.8	U
106-93-4	1,2-Dibromoethane	6.8	U

FORM I VOA

VM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SO01-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Matrix: (soil/water) SOIL Lab Sample ID: 0902008-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0902008-01R59

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. 26 Date Analyzed: 02/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	6.8	U
100-41-4	Ethylbenzene	6.8	U
100-42-5	Styrene	6.8	U
75-25-2	Bromoform	6.8	U
98-82-8	Isopropyl Benzene	4.5	J
79-34-5	1,1,2,2-Tetrachloroethane	6.8	U
541-73-1	1,3-Dichlorobenzene	6.8	U
106-46-7	1,4-Dichlorobenzene	6.8	U
95-50-1	1,2-Dichlorobenzene	6.8	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.8	U
120-82-1	1,2,4-Trichlorobenzene	6.8	U
1330-20-7	Xylene (total)	6.8	U
79-20-9	Methyl acetate	6.8	U
110-82-7	Cyclohexane	6.8	U
108-87-2	Methylcyclohexane	8.8	
108-38-3	m,p-Xylene (part of total)	14	U
95-47-6	o-Xylene (part of total)	6.8	U

VM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW003-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Matrix: (soil/water) WATER Lab Sample ID: 0901129-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901129-0171

Level: (low/med) LOW Date Received: 01/31/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.28	~~JB~~ B PR
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.28	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW003-0109

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Matrix: (soil/water) WATER Lab Sample ID: 0901129-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901129-0171

Level: (low/med) LOW Date Received: 01/31/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

WK 060901

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 01/29/09
Received Date: 01/30/09
Analysis Dates: 02/02-03/09

Cooler Temps: 0.4°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial calibration. Qualifications were required for the continuing calibrations due to low RRF and high %D values, see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments. A dilution was required for sample YS01-DW001-0109 to obtain results within the calibration range. The dilution for sample YS01-DW001-0109 diluted out results for vinyl chloride; therefore results above the calibration range were used from the initial analysis and qualified as estimated (J), qualifier code: LR.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Ilyssa Mascellaro Date: 6/8/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Lab File ID: 9B03003-TUN171 BFB Injection Date: 02/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1200

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	79.1 (97.2)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9B03003-CCV	9B03003-CCV171	02/03/09	1230
02	VBLKJB	9020308-BLK	9020308-BLK1R7	02/03/09	1532
03	VJBLCS	9020308-BS1	9020308-BS171	02/03/09	1611
04	VJBLCSD	9020308-BSD	9020308-BSD171	02/03/09	1640
05	YS01-DW002-0109 ✓	0901126-02	0901126-0271	02/03/09	1708
06	YS01-DW001-0109DL ✓	0901126-01R	0901126-01D71	02/03/09	1736
07					
08					
09					
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Instrument ID: 5972HP71 Calibration Date: 02/03/09 Time: 1230

Lab File ID: 9B03003-CCV171 Init. Calib. Date(s): 02/02/09 02/02/09

Init. Calib. Times: 1430 1724

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	1.0919800	0.6997262	0.6997262	0.001	-35.92	90.00	AVRG	
Chloromethane	95.017176	125.00000	0.3576133	0.1	-23.99	90.00	LINR	
Vinyl Chloride	100.82538	125.00000	0.4194522	0.001	-19.34	90.00	LINR	
Bromomethane	0.3783400	0.2674846	0.2674846	0.001	-29.30	90.00	AVRG	
Chloroethane	0.2489500	0.1781140	0.1781140	0.001	-28.45	90.00	AVRG	
Trichlorofluoromethane	0.9651400	0.5419571	0.5419571	0.001	-43.85	90.00	AVRG	
1,1-Dichloroethene	0.2932900	0.2912258	0.2912258	0.001	-0.70	20.00	AVRG	
Carbon disulfide	0.9610600	0.9906426	0.9906426	0.001	3.08	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.2758500	0.2033527	0.2033527	0.001	-26.28	90.00	AVRG	
Acetone	595.28585	625.00000	0.0379614	0.001	-4.75	90.00	LINR	L/R
Methyl acetate	0.2362600	0.2608690	0.2608690	0.001	10.42	90.00	AVRG	
Methylene Chloride	0.2867500	0.3575029	0.3575029	0.001	24.67	90.00	AVRG	
trans-1,2-Dichloroethene	0.3092800	0.3257335	0.3257335	0.001	5.32	90.00	AVRG	
ethyl-tert-butyl ether	0.6080100	0.5762864	0.5762864	0.001	-5.22	90.00	AVRG	
1,1-Dichloroethane	0.6273200	0.5860585	0.5860585	0.1	-6.58	90.00	AVRG	
cis-1,2-Dichloroethene	0.2981800	0.3067620	0.3067620	0.001	2.88	90.00	AVRG	
2-butanone	0.0506900	0.0591736	0.0591736	0.001	16.74	90.00	AVRG	
Chloroform	101.22957	125.00000	0.6211986	0.001	-19.02	90.00	LINR	
1,1,1-Trichloroethane	0.8165700	0.5838726	0.5838726	0.001	-28.50	90.00	AVRG	
Carbon Tetrachloride	0.7079200	0.5139137	0.5139137	0.001	-27.40	90.00	AVRG	
Benzene	0.9989700	1.0135151	1.0135151	0.001	1.46	90.00	AVRG	
1,2-Dichloroethane	0.4846900	0.3681640	0.3681640	0.001	-24.04	90.00	AVRG	
Trichloroethene	0.3405600	0.4187298	0.4187298	0.001	-22.95	90.00	AVRG	I
1,2-Dichloropropane	0.2364900	0.2530958	0.2530958	0.001	7.02	20.00	AVRG	
Bromodichloromethane	0.5387000	0.4339753	0.4339753	0.001	-19.44	90.00	AVRG	
cis-1,3-Dichloropropene	0.4564600	0.4143052	0.4143052	0.001	-9.24	90.00	AVRG	
4-Methyl-2-pentanone	0.1584600	0.1867674	0.1867674	0.001	17.86	90.00	AVRG	
Toluene	0.8792700	0.9097378	0.9097378	0.001	3.46	20.00	AVRG	
trans-1,3-Dichloropropene	0.5585900	0.4954196	0.4954196	0.001	-11.31	90.00	AVRG	
1,1,2-Trichloroethane	0.2166600	0.2234232	0.2234232	0.001	3.12	90.00	AVRG	
Tetrachloroethene	0.4505900	0.4108316	0.4108316	0.001	-8.82	90.00	AVRG	
2-hexanone	0.1078200	0.1283483	0.1283483	0.001	19.04	90.00	AVRG	
Dibromochloromethane	0.4120000	0.3804207	0.3804207	0.001	-7.66	90.00	AVRG	
1,2-Dibromoethane	0.2525500	0.2314726	0.2314726	0.001	-8.34	90.00	AVRG	
Chlorobenzene	0.9610400	1.0050318	1.0050318	0.3	4.58	90.00	AVRG	
Ethylbenzene	0.5263400	0.5264613	0.5264613	0.001	0.02	20.00	AVRG	
m,p-Xylene	0.6520100	0.6634255	0.6634255	0.001	1.75	90.00	AVRG	
o-Xylene	0.6155600	0.6225477	0.6225477	0.001	1.14	90.00	AVRG	
Styrene	1.0039300	1.0361461	1.0361461	0.001	3.21	90.00	AVRG	
Bromoform	0.2242200	0.2076480	0.2076480	0.1	-7.39	90.00	AVRG	
Isopropyl Benzene	1.9904300	1.8354197	1.8354197	0.001	-7.79	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.4291000	0.4987416	0.4987416	0.3	16.23	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Lab File ID: 9020308-BLK1R71_T Lab Sample ID: 9020308-BLK1

Date Analyzed: 02/03/09 Time Analyzed: 1532

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJBLCS	9020308-BS1	9020308-BS17	1611
B 02	YS01-DW002-0109	0901126-02	0901126-0271	1708
03	YS01-DW001-0109DL	0901126-01RE1	0901126-01D7	1736
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COMMENTS: Methylene Chl 0.53 (0.50) ug/L

Initial Calibration Date: 2/2/2009

RRF and %RSD Calculations:

Compound Name: bromomethane
Lab Value: 0.340

Area of Compound	863230
Area of Internal STD	508202
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.340

Compound Name: 1,4-dichlorobenzene
Lab Value: 8.49

RRF of STD 1	1.7440
RRF of STD 2	1.4989
RRF of STD 3	1.7337
RRF of STD 4	1.4629
RRF of STD 5	1.5237
Calculated % RSD	8.49

Continuing Calibration File ID: 2/3/2009

RRF and %D Calculations:

Compound Name: 2-butanone
Lab Value: 0.059

Area of Compound	174060
Area of Internal STD	588303
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.059

Compound Name: 2-hexanone
Lab Value: 19.0

Average RRF	0.108
Calibration Check RRF	0.128
Calculated % D	-19.0

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0901126
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-DW001-0109 and YS01-DW002-0109.

The 2 aqueous samples listed above were received intact, properly refrigerated at 0.4°C, with proper documentation, in sealed shipping containers, on January 30, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0901126 are included in the sample data sections

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in both of the samples. In the initial analysis of YS01-DW001-0109, the on-column amount of target compounds exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The sample was reanalyzed using a smaller aliquot of raw sample to bring the on-column amount into range. We have reported both analyses of YS01-DW001-0109. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual quantitations were performed on one or more of the process files associated with this SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS) met all accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
GC/GCMS Volatile Supervisor
February 4, 2009

CTO-166

15822

54

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 -
Address: 5700 Cleveland St. Ste 101	Sampling Location: NWS Yorktown
City: VA Beach State: VA Zip: 23462	Turnaround time: Soil = 7day AQ = Per contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-6208	Are aqueous samples field filtered for metals? Y or N: N/A
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3 [3x40mL]	VOCs OLM04.3 [2x40mL]	* 8260B per Megan	pH / Sample Info (Lab Use)
090111726-01	YS01-DW001-0109	1/27/09	1300	AQ	3	X						X			
↓ -02	YS01-DW002-0109	1/27/09	1530	AQ	3	X						X			
090112727-01	YS01-S001-0109	1/27/09	1600	SO	1								X		

Lab Use Only

Sample Unpacked By: Kelly Saad
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Pat Murphy	Date/Time: 1/27/09 1830	Received by: Kelly Saad	Date/Time: 1/28/09 1015
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

039

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 02/02/09
Received Date: 02/03/09
Analysis Dates: 02/03/09

Cooler Temps: 5.3°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial calibration. Qualifications were required for the continuing calibrations due to low RRF and high %D values, see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascellaro Date: 6,9,09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Lab File ID: 9B03003-TUN171 BFB Injection Date: 02/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1200

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	79.1 (97.2)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9B03003-CCV	9B03003-CCV171	02/03/09	1230
02	VBLKJB	9020308-BLK	9020308-BLK1R7	02/03/09	1532
03	VJBLCS	9020308-BS1	9020308-BS171_	02/03/09	1611
04	VJBLCSD	9020308-BSD	9020308-BSD171	02/03/09	1640
05	YS03-DW002-0209	0902009-03	0902009-0371	02/03/09	1853
06	YS03-DW004-0209	0902009-05	0902009-0571	02/03/09	1921
07	YS03-DW001-0209	0902009-02	0902009-0271	02/03/09	1950
08	YS03-DW003-0209	0902009-04	0902009-0471	02/03/09	2018
09	YS01-DW004-0209	0902009-01	0902009-0171	02/03/09	2047
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Instrument ID: 5972HP71 Calibration Date: 02/03/09 Time: 1230

Lab File ID: 9B03003-CCV171 Init. Calib. Date(s): 02/02/09 02/02/09

Init. Calib. Times: 1430 1724

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	1.0919800	0.6997262	0.6997262	0.001	-35.92	90.00	AVRG	
Chloromethane	95.017176	125.00000	0.3576133	0.1	-23.99	90.00	LINR	J
Vinyl Chloride	100.82538	125.00000	0.4194522	0.001	-19.34	90.00	LINR	
Bromomethane	0.3783400	0.2674846	0.2674846	0.001	-29.30	90.00	AVRG	
Chloroethane	0.2489500	0.1781140	0.1781140	0.001	-28.45	90.00	AVRG	J
Trichlorofluoromethane	0.9651400	0.5419571	0.5419571	0.001	-43.85	90.00	AVRG	
1,1-Dichloroethene	0.2932900	0.2912258	0.2912258	0.001	-0.70	20.00	AVRG	
Carbon disulfide	0.9610600	0.9906426	0.9906426	0.001	3.08	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.2758500	0.2033527	0.2033527	0.001	-26.28	90.00	AVRG	
Acetone	595.28585	625.00000	0.0379614	0.001	-4.75	90.00	LINR	L/R
Methyl acetate	0.2362600	0.2608690	0.2608690	0.001	10.42	90.00	AVRG	
Methylene Chloride	0.2867500	0.3575029	0.3575029	0.001	24.67	90.00	AVRG	
trans-1,2-Dichloroethene	0.3092800	0.3257335	0.3257335	0.001	5.32	90.00	AVRG	
Methyl-tert-butyl ether	0.6080100	0.5762864	0.5762864	0.001	-5.22	90.00	AVRG	
1,1-Dichloroethane	0.6273200	0.5860585	0.5860585	0.1	-6.58	90.00	AVRG	
cis-1,2-Dichloroethene	0.2981800	0.3067620	0.3067620	0.001	2.88	90.00	AVRG	
2-butanone	0.0506900	0.0591736	0.0591736	0.001	16.74	90.00	AVRG	
Chloroform	101.22957	125.00000	0.6211986	0.001	-19.02	90.00	LINR	
1,1,1-Trichloroethane	0.8165700	0.5838726	0.5838726	0.001	-28.50	90.00	AVRG	
Carbon Tetrachloride	0.7079200	0.5139137	0.5139137	0.001	-27.40	90.00	AVRG	
Benzene	0.9989700	1.0135151	1.0135151	0.001	1.46	90.00	AVRG	
1,2-Dichloroethane	0.4846900	0.3681640	0.3681640	0.001	-24.04	90.00	AVRG	J
Trichloroethene	0.3405600	0.4187298	0.4187298	0.001	22.95	90.00	AVRG	
1,2-Dichloropropane	0.2364900	0.2530958	0.2530958	0.001	7.02	20.00	AVRG	
Bromodichloromethane	0.5387000	0.4339753	0.4339753	0.001	-19.44	90.00	AVRG	
cis-1,3-Dichloropropene	0.4564600	0.4143052	0.4143052	0.001	-9.24	90.00	AVRG	
4-Methyl-2-pentanone	0.1584600	0.1867674	0.1867674	0.001	17.86	90.00	AVRG	
Toluene	0.8792700	0.9097378	0.9097378	0.001	3.46	20.00	AVRG	
trans-1,3-Dichloropropene	0.5585900	0.4954196	0.4954196	0.001	-11.31	90.00	AVRG	
1,1,2-Trichloroethane	0.2166600	0.2234232	0.2234232	0.001	3.12	90.00	AVRG	
Tetrachloroethene	0.4505900	0.4108316	0.4108316	0.001	-8.82	90.00	AVRG	
2-hexanone	0.1078200	0.1283483	0.1283483	0.001	19.04	90.00	AVRG	
Dibromochloromethane	0.4120000	0.3804207	0.3804207	0.001	-7.66	90.00	AVRG	
1,2-Dibromoethane	0.2525500	0.2314726	0.2314726	0.001	-8.34	90.00	AVRG	
Chlorobenzene	0.9610400	1.0050318	1.0050318	0.3	4.58	90.00	AVRG	
Ethylbenzene	0.5263400	0.5264613	0.5264613	0.001	0.02	20.00	AVRG	
m,p-Xylene	0.6520100	0.6634255	0.6634255	0.001	1.75	90.00	AVRG	
o-Xylene	0.6155600	0.6225477	0.6225477	0.001	1.14	90.00	AVRG	
Styrene	1.0039300	1.0361461	1.0361461	0.001	3.21	90.00	AVRG	
Bromoform	0.2242200	0.2076480	0.2076480	0.1	-7.39	90.00	AVRG	
Isopropyl Benzene	1.9904300	1.8354197	1.8354197	0.001	-7.79	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.4291000	0.4987416	0.4987416	0.3	16.23	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Lab File ID: 9020308-BLK1R71_T Lab Sample ID: 9020308-BLK1

Date Analyzed: 02/03/09 Time Analyzed: 1532

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJBLCS	9020308-BS1	9020308-BS17	1611
02	VJBLCSD	9020308-BSD1	9020308-BSD1	1640
B 03	YS03-DW002-0209	0902009-03	0902009-0371	1853
04	YS03-DW004-0209	0902009-05	0902009-0571	1921
05	YS03-DW001-0209	0902009-02	0902009-0271	1950
06	YS03-DW003-0209	0902009-04	0902009-0471	2018
07	YS01-DW004-0209	0902009-01	0902009-0171	2047
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COMMENTS: Methylene Chl 0.53 ug/L (0.50)

Initial Calibration Date: 2/2/2009

RRF and %RSD Calculations:

Compound Name: bromomethane
Lab Value: 0.340

Area of Compound	863230
Area of Internal STD	508202
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.340

Compound Name: 1,4-dichlorobenzene
Lab Value: 8.49

RRF of STD 1	1.7440
RRF of STD 2	1.4989
RRF of STD 3	1.7337
RRF of STD 4	1.4629
RRF of STD 5	1.5237
Calculated % RSD	8.49

Continuing Calibration File ID: 2/3/2009

RRF and %D Calculations:

Compound Name: 2-butanone
Lab Value: 0.059

Area of Compound	174060
Area of Internal STD	588303
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.059

Compound Name: 2-hexanone
Lab Value: 19.0

Average RRF	0.108
Calibration Check RRF	0.128
Calculated % D	-19.0

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501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0902009
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-DW004-0209, YS03-DW001-0209, YS03-DW002-0209, YS03-DW003-0209 AND YS03-DW004-0209

The 5 aqueous samples listed above were received intact, refrigerated at 5.2°C, with proper documentation, in sealed shipping containers, on February 3, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0902009 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, samples YS03-DW001-0209and YS03-DW004-0209 were initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9B02005-CAL171 and 9B02005-CAL271 process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy

Patricia A Murphy
Senior Scientist
February 4, 2009

CTO-166

16619

Page 1 of 1

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CHAIN OF CUSTODY

CompuChem
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501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 Yorktown
Address: 5700 Cleveland Ste. 101	Sampling Location: NWS Yorktown Sites 1 and 3
City: VA Beach State: VA Zip: 23462	Turnaround time: AQ = 48hr SO = 7days
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type): VOCs SW846 [3x40mL] | VOCs SW846 [2x 2oz]

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 [3x40mL]	VOCs SW846 [2x 2oz]	pH / Sample Info (Lab Use)
0902009-01	YS01-DW004-0209	2/2/09	0830	AQ	3	3						3		
0902008-01	YS03-SO01-0209	2/2/09	1030	SO	2								2	
0902009-02	YS03-DW001-0209	2/2/09	1200	AQ	3	3						3		
-03	YS03-DW002-0209	2/2/09	1335	AQ	3	3						3		
-04	YS03-DW003-0209	2/2/09	1430	AQ	3	3						3		
-05	YS03-DW004-0209	2/2/09	1515	AQ	3	3						3		

Lab Use Only

Sample Unpacked By: Diana Byrd
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Sample Custody

Relinquished by: P. Murphy	Date/Time: 2/2/09 1800	Received by: Diana Byrd	Date/Time: 2/3/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 5.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

047

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 01/29/09
Received Date: 01/30/09
Analysis Dates: 01/30/09

Cooler Temps: 0.4°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Ayuna Mascellaro **Date:** 6/9/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Lab File ID: 9A24006-TUN159 BFB Injection Date: 01/24/09

Instrument ID: 5972HP59 BFB Injection Time: 1518

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.8
75	30.0 - 60.0% of mass 95	48.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	Greater than 50.0% of mass 95	77.2
175	5.0 - 9.0% of mass 174	5.5 (7.1)1
176	95.0 - 101.0% of mass 174	76.8 (99.5)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	9A24006-CAL	9A24006-CAL359	01/24/09	1610
02	VSTD010	9A24006-CAL	9A24006-CAL259	01/24/09	1638
03	VSTD005	9A24006-CAL	9A24006-CAL159	01/24/09	1707
04	VSTD200	9A24006-CAL	9A24006-CAL659	01/24/09	1735
05	VSTD100	9A24006-CAL	9A24006-CAL559	01/24/09	1804
06	VSTD050	9A24006-CAL	9A24006-CAL459	01/24/09	1832
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Instrument ID: 5972HP59 Calibration Date(s): 01/24/09 01/24/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1610 1832

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.89463078	5.176	15.000	
Chloromethane	AVRG		0.46158421	2.951	15.000	
Vinyl Chloride	AVRG		0.43847707	6.826	30.000	
Bromomethane	LINR	0.05747991	2.30045048	0.9950753	0.9900000	<-
Chloroethane	AVRG		0.30924292	11.937	15.000	
Trichlorofluoromethane	AVRG		0.88969771	3.455	15.000	
1,1-Dichloroethene	AVRG		0.35230021	5.235	30.000	
Carbon disulfide	AVRG		1.35190373	5.555	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.58020276	6.864	15.000	
Acetone	AVRG		0.04466762	7.047	15.000	LIR
Methylene Chloride	AVRG		0.33399839	7.203	15.000	
trans-1,2-Dichloroethene	AVRG		0.38100286	4.388	15.000	
Methyl-tert-butyl ether	AVRG		0.70561511	7.559	15.000	
1,1-Dichloroethane	AVRG		0.69446767	3.225	15.000	
cis-1,2-Dichloroethene	AVRG		0.34922852	4.321	15.000	
2-butanone	AVRG		0.06534075	13.155	15.000	<-
loroform	AVRG		0.74657649	4.476	30.000	
,1,1-Trichloroethane	AVRG		0.76655728	5.361	15.000	
Carbon Tetrachloride	AVRG		0.71841433	5.230	15.000	
Benzene	AVRG		1.34908513	6.705	15.000	
1,2-Dichloroethane	AVRG		0.42440461	4.851	15.000	
Trichloroethene	AVRG		0.44354735	7.054	15.000	
1,2-Dichloropropane	AVRG		0.28988027	3.990	30.000	
Bromodichloromethane	AVRG		0.52004374	7.552	15.000	
cis-1,3-Dichloropropene	AVRG		0.54232196	7.888	15.000	
4-Methyl-2-pentanone	AVRG		0.22949426	13.844	15.000	
Toluene	AVRG		1.13653638	8.484	30.000	
trans-1,3-Dichloropropene	AVRG		0.63858431	9.303	15.000	
1,1,2-Trichloroethane	AVRG		0.29277288	9.526	15.000	
Tetrachloroethene	AVRG		0.46018330	7.282	15.000	
2-hexanone	LINR	0.25224518	5.23689993	0.9991224	0.9900000	
Dibromochloromethane	AVRG		0.49085710	11.085	15.000	
1,2-Dibromoethane	AVRG		0.33331760	11.263	15.000	
Chlorobenzene	AVRG		1.21626751	7.806	15.000	
Ethylbenzene	AVRG		0.66604234	7.037	30.000	
Styrene	AVRG		1.17504056	10.230	15.000	
Bromoform	AVRG		0.26240211	11.547	15.000	
Isopropyl Benzene	AVRG		2.25012175	5.272	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.82166939	9.471	15.000	
1,3-Dichlorobenzene	AVRG		2.05708958	7.583	15.000	
1,4-Dichlorobenzene	AVRG		2.06841649	5.811	15.000	
1,2-Dichlorobenzene	AVRG		1.72557282	8.923	15.000	
1,2-Dibromo-3-Chloropropane	LINR	0.10955791	5.88392865	0.9991490	0.9900000	
1,2,4-Trichlorobenzene	LINR	0.09203718	0.68201845	0.9988466	0.9900000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Lab File ID: 9A30002-TUN159 BFB Injection Date: 01/30/09

Instrument ID: 5972HP59 BFB Injection Time: 1026

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	50.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.3
175	5.0 - 9.0% of mass 174	5.6 (7.3)1
176	95.0 - 101.0% of mass 174	75.9 (99.6)1
177	5.0 - 9.0% of mass 176	5.3 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	9A30002-CCV	9A30002-CCV159	01/30/09	1050
02	VBLKIV	9013002-BLK	9013002-BLK159	01/30/09	1126
03	VIVLCSD	9013002-BSD	9013002-BSD159	01/30/09	1235
04	VIVLCS	9013002-BS1	9013002-BS1R59	01/30/09	1434
05	YS01-SO01-0109	0901127-01	0901127-0159	01/30/09	1706
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FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Instrument ID: 5972HP59 Calibration Date: 01/30/09 Time: 1050

Lab File ID: 9A30002-CCV159 Init. Calib. Date(s): 01/24/09 01/24/09

Init. Calib. Times: 1610 1832

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF50 or AMOUNT	CCAL RRF50	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.8946300	0.7633585	0.7633585	0.001	-14.67	25.00	AVRG	
Chloromethane	0.4615800	0.3989438	0.3989438	0.1	-13.57	25.00	AVRG	
Vinyl Chloride	0.4384800	0.4318043	0.4318043	0.001	-1.52	20.00	AVRG	
Bromomethane	230.03536	250.00000	0.3749968	0.001	-7.98	25.00	LINR	
Chloroethane	0.3092400	0.3421646	0.3421646	0.001	10.65	25.00	AVRG	
Trichlorofluoromethane	0.8897000	0.8673157	0.8673157	0.001	-2.52	25.00	AVRG	
1,1-Dichloroethene	0.3523000	0.3688046	0.3688046	0.001	4.68	20.00	AVRG	
Carbon disulfide	1.3519000	1.3783444	1.3783444	0.001	1.96	25.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.5802000	0.6801061	0.6801061	0.001	17.22	25.00	AVRG	4/R
Acetone	0.0446700	0.0475655	0.0475655	0.001	6.48	25.00	AVRG	
Methylene Chloride	0.3340000	0.3704374	0.3704374	0.001	10.91	25.00	AVRG	
trans-1,2-Dichloroethene	0.3810000	0.4073515	0.4073515	0.001	6.92	25.00	AVRG	
Methyl-tert-butyl ether	0.7056200	0.7761895	0.7761895	0.001	10.00	25.00	AVRG	
1-Dichloroethane	0.6944700	0.7092441	0.7092441	0.1	2.13	25.00	AVRG	
s-1,2-Dichloroethene	0.3492300	0.3820181	0.3820181	0.001	9.39	25.00	AVRG	
2-butanone	0.0653400	0.0686414	0.0686414	0.001	5.05	25.00	AVRG	
Chloroform	0.7465800	0.7618439	0.7618439	0.001	2.04	20.00	AVRG	
1,1,1-Trichloroethane	0.7665600	0.7970482	0.7970482	0.001	3.98	25.00	AVRG	
Carbon Tetrachloride	0.7184200	0.7638258	0.7638258	0.001	6.32	25.00	AVRG	
Benzene	1.3490800	1.3749531	1.3749531	0.001	1.92	25.00	AVRG	
1,2-Dichloroethane	0.4244000	0.4245647	0.4245647	0.001	0.04	25.00	AVRG	
Trichloroethene	0.4435400	0.4644414	0.4644414	0.001	4.71	25.00	AVRG	
1,2-Dichloropropane	0.2898800	0.3024368	0.3024368	0.001	4.33	20.00	AVRG	
Bromodichloromethane	0.5200400	0.5599934	0.5599934	0.001	7.68	25.00	AVRG	
cis-1,3-Dichloropropene	0.5423200	0.5433681	0.5433681	0.001	0.19	25.00	AVRG	
4-Methyl-2-pentanone	0.2295000	0.2470192	0.2470192	0.001	7.63	25.00	AVRG	
Toluene	1.1365300	1.2157239	1.2157239	0.001	6.97	20.00	AVRG	
trans-1,3-Dichloropropene	0.6385800	0.6515766	0.6515766	0.001	2.04	25.00	AVRG	
1,1,2-Trichloroethane	0.2927700	0.3060291	0.3060291	0.001	4.53	25.00	AVRG	
Tetrachloroethene	0.4601800	0.5961271	0.5961271	0.001	29.54	25.00	AVRG	<-
2-hexanone	533.02485	625.00000	0.1435853	0.001	-14.72	25.00	LINR	
Dibromochloromethane	0.4908600	0.5374071	0.5374071	0.001	9.48	25.00	AVRG	
1,2-Dibromoethane	0.3333200	0.3585724	0.3585724	0.001	7.58	25.00	AVRG	
Chlorobenzene	1.2162700	1.2940552	1.2940552	0.3	6.40	25.00	AVRG	
Ethylbenzene	0.6660400	0.6842469	0.6842469	0.001	2.73	20.00	AVRG	
Styrene	1.1750400	1.2973370	1.2973370	0.001	10.41	25.00	AVRG	
Bromoform	0.2624000	0.2801615	0.2801615	0.1	6.77	25.00	AVRG	
Isopropyl Benzene	2.2501200	2.4461421	2.4461421	0.001	8.71	25.00	AVRG	
1,1,2,2-Tetrachloroethane	0.8216700	0.8191302	0.8191302	0.3	-0.31	25.00	AVRG	
1,3-Dichlorobenzene	2.0570900	2.0156934	2.0156934	0.001	-2.01	25.00	AVRG	
1,4-Dichlorobenzene	2.0684200	2.0406447	2.0406447	0.001	-1.34	25.00	AVRG	
2-Dichlorobenzene	1.7255700	1.7836888	1.7836888	0.001	3.37	25.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKIV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Lab File ID: 9013002-BLK159 Lab Sample ID: 9013002-BLK1

Date Analyzed: 01/30/09 Time Analyzed: 1126

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972HP59

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VIVLCSD	9013002-BSD1	9013002-BSD1	1235
02	VIVLCS	9013002-BS1	9013002-BS1R	1434
B 03	YS01-SO01-0109	0901127-01	0901127-0159	1706
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COMMENTS: Methylene Chl 1.0 J ug/L (5.0)

CompuChem
a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0901127
PROTOCOL: SW-846

SAMPLE IDENTIFICATION:

YS01-SO01-0109

The one soil sample listed above was received intact, at temperature of 0.4 °C, with proper documentation, in sealed shipping container, on January 30, 2009. The sample was scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, Method 8260B were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. The percent moisture value of this soil sample is 17.

Volatiles Section

Analysis holding time requirements were met for this sample.

There were no volatile project analyte detected above Quantitation Limit in this sample.

Manual integrations were performed on one or more of the process files associated with this SDG. There were no manual integrations performed on this sample. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the system monitoring compounds met recovery criteria in the analysis of these samples.

All of the internal standards met response and retention time criteria in the analysis of these samples.

The associated method blank met all quality control criteria. The method blank contained levels of methylene chloride within allowable limit.

There were no associated duplicate matrix spikes for this SDG. Duplicate Laboratory Control Samples (LCS/LCSD) were analyzed instead. The associated (LCS/LCSD) prepared and analyzed along with these samples met all accuracy and precision criteria, with the following exception. The recoveries of benzene and tetrachloroethene in the LCS and tetrachloroethene in the LCSD were above the control limits.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd
Senior Scientist I
February 5, 2009

CTO-166

15822

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CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 -
Address: 5700 Cleveland St. Ste 101	Sampling Location: NWS Yorktown
City: VA Beach State: VA Zip: 23462	Turnaround time: Soil = 7day AQ = Per contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-6208	Are aqueous samples field filtered for metals? Y or N: N/A
Sampler's Name: Pete Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3 [3x40mL]	VOCs OLM04.3 [2x4oz]	* 8260B per Megan	pH / Sample Info (Lab Use)
0901126-01	YSO1-DW001-0109	1/29/09	1300	AQ	3	X						X			
-02	YSO1-DW002-0109	1/29/09	1530	AQ	3	X						X			
0901127-01	YSO1-SO01-0109	1/29/09	1600	SO	1								X		

* 8260B per Megan

Lab Use Only

Sample Unpacked By: Kelly Seal
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Pete Murphy	Date/Time: 1/29/09 1830	Received by: Kelly Seal	Date/Time: 1/30/09 1115
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 02/02/09
Received Date: 02/03/09
Analysis Dates: 02/06/09

Cooler Temps: 5.3°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial calibration due to low RRF values; see attached Form VI.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks however no qualifications were required to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascitti Date: 6/9/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Lab File ID: 9B06002-TUN159 BFB Injection Date: 02/06/09

Instrument ID: 5972HP59 BFB Injection Time: 1233

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.4
75	30.0 - 60.0% of mass 95	47.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	78.2
175	5.0 - 9.0% of mass 174	5.6 (7.1)1
176	95.0 - 101.0% of mass 174	78.6 (100.5)1
177	5.0 - 9.0% of mass 176	4.9 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	9B06002-CAL	9B06002-CAL359	02/06/09	1338
02	VSTD010	9B06002-CAL	9B06002-CAL259	02/06/09	1406
03	VSTD005	9B06002-CAL	9B06002-CAL159	02/06/09	1434
04	VSTD100	9B06002-CAL	9B06002-CAL559	02/06/09	1502
05	VSTD200	9B06002-CAL	9B06002-CAL659	02/06/09	1531
06	VSTD050	9B06002-CAL	9B06002-CAL4R5	02/06/09	1559
07	VBLKJK	9020622-BLK	9020622-BLK159	02/06/09	1753
08	VJKLCS	9020622-BS1	9020622-BS159	02/06/09	1928
09	VJKLCSD	9020622-BSD	9020622-BSD159	02/06/09	1956
10	YS03-SO01-0209	0902008-01	0902008-01R59	02/06/09	2343
11					
12					
13					
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17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Instrument ID: 5972HP59 Calibration Date(s): 02/06/09 02/06/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1338 1559

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.86201056	10.351	15.000
Chloromethane	AVRG		0.40584270	9.005	15.000
Vinyl Chloride	AVRG		0.54797917	11.524	30.000
Bromomethane	LINR	0.02841710	2.59153421	0.9974140	0.9900000
Chloroethane	AVRG		0.33089638	14.347	15.000
Trichlorofluoromethane	AVRG		0.78678325	10.698	15.000
1,1-Dichloroethene	AVRG		0.33221608	12.008	30.000
Carbon disulfide	AVRG		1.26239212	11.790	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.53192855	9.051	15.000
Acetone	AVRG		0.03941005	12.879	15.000
Methylene Chloride	AVRG		0.32265235	9.382	15.000
trans-1,2-Dichloroethene	AVRG		0.36164307	10.800	15.000
Methyl-tert-butyl ether	AVRG		0.60765304	10.677	15.000
1,1-Dichloroethane	AVRG		0.60548355	8.782	15.000
cis-1,2-Dichloroethene	AVRG		0.33597967	8.602	15.000
-butanone	LINR	0.17747740	15.1208143	0.9996605	0.9900000
loroform	AVRG		0.63785852	9.678	30.000
1,1,1-Trichloroethane	AVRG		0.64916751	9.340	15.000
Carbon Tetrachloride	AVRG		0.60998354	10.666	15.000
Benzene	AVRG		1.31642975	8.207	15.000
1,2-Dichloroethane	AVRG		0.34092280	10.161	15.000
Trichloroethene	AVRG		0.42455681	12.161	15.000
1,2-Dichloropropane	AVRG		0.26773662	7.126	30.000
Bromodichloromethane	AVRG		0.44544703	12.057	15.000
cis-1,3-Dichloropropene	AVRG		0.48907902	11.578	15.000
4-Methyl-2-pentanone	LINR	0.26323330	3.95665663	0.9977065	0.9900000
Toluene	AVRG		1.12234092	9.607	30.000
trans-1,3-Dichloropropene	AVRG		0.58636577	10.937	15.000
1,1,2-Trichloroethane	AVRG		0.26746634	14.196	15.000
Tetrachloroethene	AVRG		0.46473171	9.556	15.000
2-hexanone	LINR	0.28160420	5.73891573	0.9978854	0.9900000
Dibromochloromethane	AVRG		0.45701515	13.811	15.000
1,2-Dibromoethane	LINR	0.08171930	2.71551392	0.9985418	0.9900000
Chlorobenzene	AVRG		1.20842645	7.846	15.000
Ethylbenzene	AVRG		0.64447295	7.760	30.000
Styrene	AVRG		1.15874254	10.352	15.000
Bromoform	LINR	0.10041050	3.37041043	0.9981095	0.9900000
Isopropyl Benzene	AVRG		2.15709183	7.070	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.77749117	12.248	15.000
1,3-Dichlorobenzene	AVRG		2.05578283	10.563	15.000
1,4-Dichlorobenzene	AVRG		2.06002760	7.460	15.000
1,2-Dichlorobenzene	AVRG		1.75337064	8.940	15.000
1,2-Dibromo-3-Chloropropane	LINR	0.13650190	6.10414497	0.9970443	0.9900000
1,2,4-Trichlorobenzene	LINR	0.08782090	0.72502100	0.9986085	0.9900000

L/R

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0902008
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-SO01-0209

The 1 soil sample listed above was received intact, properly refrigerated at 5.3°C with proper documentation, in sealed shipping containers, on February 3, 2009. Sample was scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0902008 are included in the sample data sections.

Analysis holding time requirements were met for the sample. Sample percent moisture value was equal to 26 percent. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in the sample. The system monitoring compounds met recovery criteria in the analyses of the sample. All of the internal standards met response and retention time criteria in the analyses of the sample.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 59 on 2/6/09 associated with the BFB injected at 1233. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VI. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard. Manual integrations were performed on 9B06002CAL159, 9B06002CAL259, 9B06002CAL359 and 9B06002CAL4R59, process file associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met all accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
February 11, 2009

CTO-166

16619

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CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 Yorktown
Address: 5700 Cleveland Ste. 101	Sampling Location: NWS Yorktown Sites 1 and 3
City: VA Beach State: VA Zip: 23462	Turnaround time: AQ = 48hr. SO = 7days
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 [3x40mL]	VOCs SW846 [2x 20z]	pH / Sample Info (Lab Use)
0902009-01	YS01-DW004-0209	2/2/09	0830	AQ	3	3						3		
0902008-01	YS03-SO01-0209	2/2/09	1030	SO	2								2	
0902009-02	YS03-DW001-0209	2/2/09	1200	AQ	3	3						3		
-03	YS03-DW002-0209	2/2/09	1335	AQ	3	3						3		
-04	YS03-DW003-0209	2/2/09	1430	AQ	3	3						3		
-05	YS03-DW004-0209	2/2/09	1545	AQ	3	3						3		

Lab Use Only

Sample Unpacked By: Diane Byrd
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: P. Murphy	Date/Time: 2/2/09 1800	Received by: Diane Byrd	Date/Time: 2/3/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 5.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

062

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 01/30/09
Received Date: 01/31/09
Analysis Dates: 02/03/09

Cooler Temps: 0.1°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial calibration. Qualifications were required for the continuing calibration due to low RRF values; see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks however no qualifications were required to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Massetti **Date:** 6/9/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Lab File ID: 9B03003-TUN171 BFB Injection Date: 02/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1200

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	79.1 (97.2)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9B03003-CCV	9B03003-CCV171	02/03/09	1230
02	VBLKJB	9020308-BLK	9020308-BLK1R7	02/03/09	1532
03	VJBLCS	9020308-BS1	9020308-BS171_	02/03/09	1611
04	VJBLCSD	9020308-BSD	9020308-BSD171	02/03/09	1640
05	YS01-DW003-0109	0901129-01	0901129-0171	02/03/09	1816
06					
07					
08					
09					
10					
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22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Instrument ID: 5972HP71 Calibration Date: 02/03/09 Time: 1230

Lab File ID: 9B03003-CCV171 Init. Calib. Date(s): 02/02/09 02/02/09

Init. Calib. Times: 1430 1724

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	1.0919800	0.6997262	0.6997262	0.001	-35.92	90.00	AVRG
Chloromethane	95.017176	125.00000	0.3576133	0.1	-23.99	90.00	LINR
Vinyl Chloride	100.82538	125.00000	0.4194522	0.001	-19.34	90.00	LINR
Bromomethane	0.3783400	0.2674846	0.2674846	0.001	-29.30	90.00	AVRG
Chloroethane	0.2489500	0.1781140	0.1781140	0.001	-28.45	90.00	AVRG
Trichlorofluoromethane	0.9651400	0.5419571	0.5419571	0.001	-43.85	90.00	AVRG
1,1-Dichloroethene	0.2932900	0.2912258	0.2912258	0.001	-0.70	20.00	AVRG
Carbon disulfide	0.9610600	0.9906426	0.9906426	0.001	3.08	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2758500	0.2033527	0.2033527	0.001	-26.28	90.00	AVRG
etone	595.28585	625.00000	0.0379614	0.001	-4.75	90.00	LINR
chyl acetate	0.2362600	0.2608690	0.2608690	0.001	10.42	90.00	AVRG
Methylene Chloride	0.2867500	0.3575029	0.3575029	0.001	24.67	90.00	AVRG
trans-1,2-Dichloroethene	0.3092800	0.3257335	0.3257335	0.001	5.32	90.00	AVRG
Methyl-tert-butyl ether	0.6080100	0.5762864	0.5762864	0.001	-5.22	90.00	AVRG
1,1-Dichloroethane	0.6273200	0.5860585	0.5860585	0.1	-6.58	90.00	AVRG
cis-1,2-Dichloroethene	0.2981800	0.3067620	0.3067620	0.001	2.88	90.00	AVRG
2-butanone	0.0506900	0.0591736	0.0591736	0.001	16.74	90.00	AVRG
Chloroform	101.22957	125.00000	0.6211986	0.001	-19.02	90.00	LINR
1,1,1-Trichloroethane	0.8165700	0.5838726	0.5838726	0.001	-28.50	90.00	AVRG
Carbon Tetrachloride	0.7079200	0.5139137	0.5139137	0.001	-27.40	90.00	AVRG
Benzene	0.9989700	1.0135151	1.0135151	0.001	1.46	90.00	AVRG
1,2-Dichloroethane	0.4846900	0.3681640	0.3681640	0.001	-24.04	90.00	AVRG
Trichloroethene	0.3405600	0.4187298	0.4187298	0.001	22.95	90.00	AVRG
1,2-Dichloropropane	0.2364900	0.2530958	0.2530958	0.001	7.02	20.00	AVRG
Bromodichloromethane	0.5387000	0.4339753	0.4339753	0.001	-19.44	90.00	AVRG
cis-1,3-Dichloropropene	0.4564600	0.4143052	0.4143052	0.001	-9.24	90.00	AVRG
4-Methyl-2-pentanone	0.1584600	0.1867674	0.1867674	0.001	17.86	90.00	AVRG
Toluene	0.8792700	0.9097378	0.9097378	0.001	3.46	20.00	AVRG
trans-1,3-Dichloropropene	0.5585900	0.4954196	0.4954196	0.001	-11.31	90.00	AVRG
1,1,2-Trichloroethane	0.2166600	0.2234232	0.2234232	0.001	3.12	90.00	AVRG
Tetrachloroethene	0.4505900	0.4108316	0.4108316	0.001	-8.82	90.00	AVRG
2-hexanone	0.1078200	0.1283483	0.1283483	0.001	19.04	90.00	AVRG
Dibromochloromethane	0.4120000	0.3804207	0.3804207	0.001	-7.66	90.00	AVRG
1,2-Dibromoethane	0.2525500	0.2314726	0.2314726	0.001	-8.34	90.00	AVRG
lorobenzene	0.9610400	1.0050318	1.0050318	0.3	4.58	90.00	AVRG
ylbenzene	0.5263400	0.5264613	0.5264613	0.001	0.02	20.00	AVRG
m,p-Xylene	0.6520100	0.6634255	0.6634255	0.001	1.75	90.00	AVRG
o-Xylene	0.6155600	0.6225477	0.6225477	0.001	1.14	90.00	AVRG
Styrene	1.0039300	1.0361461	1.0361461	0.001	3.21	90.00	AVRG
Bromoform	0.2242200	0.2076480	0.2076480	0.1	-7.39	90.00	AVRG

L/R

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Lab File ID: 9020308-BLK1R71_T Lab Sample ID: 9020308-BLK1

Date Analyzed: 02/03/09 Time Analyzed: 1532

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJBLCS	9020308-BS1	9020308-BS17	1611
02	VJBLCSD	9020308-BSD1	9020308-BSD1	1640
B 03	YS01-DW003-0109	0901129-01	0901129-0171	1816
04				
05				
06				
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28				
29				
30				

COMMENTS: Methylene Chl 0.53 (0.50) ug/L

Initial Calibration Date: 2/2/2009

RRF and %RSD Calculations:

Compound Name: bromomethane
Lab Value: 0.340

Area of Compound	863230
Area of Internal STD	508202
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.340

Compound Name: 1,4-dichlorobenzene
Lab Value: 8.49

RRF of STD 1	1.7440
RRF of STD 2	1.4989
RRF of STD 3	1.7337
RRF of STD 4	1.4629
RRF of STD 5	1.5237
Calculated % RSD	8.49

Continuing Calibration File ID: 2/3/2009

RRF and %D Calculations:

Compound Name: 2-butanone
Lab Value: 0.059

Area of Compound	174060
Area of Internal STD	588303
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.059

Compound Name: 2-hexanone
Lab Value: 19.0

Average RRF	0.108
Calibration Check RRF	0.128
Calculated % D	-19.0

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0901129
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-SW003-0109.

The 1 aqueous sample listed above was received intact, properly refrigerated at 0.1°C, with proper documentation, in sealed shipping containers, on January 31, 2009. The sample was scheduled for the requested analysis of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0901129 are included in the sample data sections

Analysis holding time requirements were met for the sample. The pH value of the sample is equal to 1. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in the sample. All of the system monitoring compounds met recovery criteria in the analysis of the sample. All of the internal standards met response and retention time criteria in the analysis of the sample.

Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual quantitations were performed on one or more of the process files associated with this SDG. The associated method blank met all quality control criteria. The associated Laboratory Control Samples (LCS) met all accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
GC/GCMS Volatile Supervisor
February 4, 2009

CTO-166

15821

Page 1 of 1

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CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166 DPT GW		GW - Ground water
Address: 5700 Cleveland St. Ste. 101	Sampling Location: NWS Yorktown Site 1		WW - Waste water
City: VA Beach State: VA Zip: 23462	Turnaround time: AQ = 48hr		SW - Surface water
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?		SO - Soil/Sediment
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N: N/A		TB - Trip Blank
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?		RI - Rinsate
			WP - Wipe
			O - Other

VOCs SW8260 [3x40mL] 82608 Per Megan VA 1/31/09

CompuChem No (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW8260 [3x40mL]	pH / Sample Info (Lab Use)
0901129-01	YS01-DW003-0109	1/31/09	1130	AQ	3	3						3	

Lab Use Only

Sample Unpacked By: J-Rdp
Sample Order Entry By: J-Rdp
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA (NA)
625 & Phenol samples checked for chlorine? Y or NA (NA)
608 samples checked for pH between 5.0-9.0? Y or NA (NA)

Comments

Sample Custody

Relinquished by: P. Murphy	Date/Time: 1/31/09 1800	Received by: J-Rdp	Date/Time: 1/31/09 1055
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.1 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for custom[illegible]

070

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # SDG001, Empirical Laboratories
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameter noted in the table below for SDG #s SDG001. The data validation was performed in accordance with the SW-846 8330 for explosives, PETN and 3,5-dinitroaniline. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site.

Sample ID	Lab ID	Matrix	EXP
YS06-EB01-032309	0903310-04	water	X
YS06-EB01-032409	0903325-02	water	X
YS06-EB01-032509	0903339-01	water	X
YS06-EB02-032309	0903310-05	water	X
YS06-EB02-032409	0903136-09	water	X
YS06-EB02-032509	0903339-02	water	X
YS06-GW01-0309	0903310-02	water	X
YS06-GW01A-0309	0903310-01	water	X
YS06-GW01P-0309	0903310-03	water	X
YS06-GW02-0309	0903325-01	water	X
YS06-GW03-0309	0903339-03	water	X
YS06-GW09-0309	0903339-04	water	X
YS06-GW09A-0309	0903339-05	water	X
YS06-GW10-0309	0903325-05	water	X
YS06--GW10A-0309	0903325-06	water	X
YS06-GW11-0309	0903325-04	water	X
YS06-GW01A-0309 MS	0903310-01MS	water	X
YS06-GW01A-0309 MSD	0903310-01MSD	water	X

The following quality control samples were provided with this SDG: samples YS06-EB01-032309, YS06-EB02-032309, YS06-EB01-032409, YS06-EB02-032409, YS06-EB01-032509, and YS06-EB02-032509-equipment blanks; and sample YS06-GW01P-0309-field duplicate of sample YS06-GW01-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Sample Condition *
- HPLC Performance *
- Initial/Continuing Calibrations
- Blanks
- Surrogates
- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No issues requiring the rejection of analytical data were noted in this data package.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

Explosives by 8330

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

One of the samples exhibited high surrogate recoveries. Results in the samples were qualified.

All P flagged results were qualified as estimated.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 3/23-3/25 and samples were received at the sub-contracting laboratory 3/25 and 3/27. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D	Samples	Q Flag	Q Code
4/8/09, 1712	tetryl	-16.9	all samples	J/UJ	CCL
4/8/09, 2246		-17.0			
4/12/09, 0016		-16.7			
4/15/09, 0722		-20.1			
4/8/09, 1205	3,5-dinitroaniline	-45.8	YS06-GW01A-0309, YS06-GW01-0309, YS06-GW01P-0309, YS06-EB01-032309, YS06-EB02-032309	J/UJ	CCL
4/8/09, 1739		-67.2			
4/8/09, 2313		-75			
4/15/09, 0750	3,5-dinitroaniline	36.4	YS06-GW09-0309	J	CCH
4/15/09, 1324		36.5			

Blanks

Explosives

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
EW1BLK0327	1,3,5-trinitrobenzene	0.11J ug/L	0.55 ug/L	B	BL
YS06-EB01-032509	1,3,5-trinitrobenzene	0.17JPM ug/L	0.85 ug/L	B	BL
YS06-EB02-032509	RDX	0.15Jug/L	0.75 ug/L	B	BL

Qualifications required in the field samples are noted in the following table.

Sample ID	Compound	Q Flag	Q Code
YS06-GW03-0309, YS06-GW02-0309, YS06-GW11-0309, YS06-GW10A-0309	1,3,5-trinitrobenzene	B	BL
YS06-GW09A-0309	RDX	B	BL

Surrogates

Explosives

Sample YS06-GW09-0309 exhibited high recoveries for 1,2-dinitrobenzene (749/311/437); therefore all positive results in the sample were qualified as biased high (K), qualifier code: SSH.

Identification/Quantitation

Explosives

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Reporting Limits

Explosives by 8330

Two of the target compounds did not meet the QAPP established method detection limits (MDLs) as noted on page 96 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) met criteria. No validation action was required.

Compound	QAPP MDL (ug/L)	Lab MDL (ug/L)
2-amino-4,6-dinitrotoluene	0.1	0.12
3-nitrotoluene	0.1	0.12

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

CH2M HILL
NWS Yorktown
SDG001

Summary of Data Qualifications

Explosives

Sample ID	Compound	Results	Q Flag	Q code
all samples	tetryl	+/-	J/UJ	CCL
YS06-GW01A-0309, YS06-GW01-0309, YS06-GW01P-0309, YS06-EB01-032309, YS06-EB02-032309	3,5-dinitroaniline	+/-	J/UJ	CCL
YS06-GW09-0309	3,5-dinitroaniline	+	J	CCH
YS06-GW03-0309, YS06-GW02-0309, YS06-GW11-0309, YS06-GW10A-0309	1,3,5-trinitrobenzene	+	B	BL
YS06-GW09A-0309	RDX	+	B	BL
YS06-GW09-0309	all compounds	+	K	SSH
all samples	all compounds	+P	J	2C

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-01

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 046V4601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 14:24

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.93		U
121-82-4	RDX	0.075	0.93		U
98-95-3	Nitrobenzene	0.082	0.93		U
99-65-0	1,3-Dinitrobenzene	0.075	0.93		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.93		U
121-14-2	2,4-Dinitrotoluene	0.097	0.93		U
606-20-2	2,6-Dinitrotoluene	0.097	0.93		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.93		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.93		U
479-45-8	Tetryl	0.075	0.93		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.93		U
88-72-2	2-Nitrotoluene	0.075	0.93		U
99-99-0	4-Nitrotoluene	0.075	0.93		U
99-08-1	3-Nitrotoluene	0.11	0.93		U
618-87-1	3,5-Dinitroaniline	0.075	0.93		~~U~~ UJ CCL

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-01

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 004V0401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 13:00

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 051V5101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 16:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.24	J
121-82-4	RDX	0.080	1.0	0.88	J
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		UJ CCL

JDC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 007V0701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 14:31

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JDC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 054V5401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 18:07

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98	0.38	~~J~~ J 2C
121-82-4	RDX	0.078	0.98	1.3	
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		~~J~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		~~J~~ UJ CCL

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 008V0801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 15:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JJC 6809

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-04

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 055V5501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 18:35

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.96		U
121-82-4	RDX	0.077	0.96	0.086	~~JPM~~ J X
98-95-3	Nitrobenzene	0.085	0.96		U
99-65-0	1,3-Dinitrobenzene	0.077	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.96	0.62	J#
121-14-2	2,4-Dinitrotoluene	0.10	0.96		U
606-20-2	2,6-Dinitrotoluene	0.10	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.96		U
479-45-8	Tetryl	0.077	0.96		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.96		U
88-72-2	2-Nitrotoluene	0.077	0.96		U
99-99-0	4-Nitrotoluene	0.077	0.96		U
99-08-1	3-Nitrotoluene	0.12	0.96		U
618-87-1	3,5-Dinitroaniline	0.077	0.96		~~U~~ UJ CCL

8/6/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-04

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 009V0901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 15:32

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-05

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 056V5601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 19:03

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.93		U
121-82-4	RDX	0.075	0.93		U
98-95-3	Nitrobenzene	0.082	0.93		U
99-65-0	1,3-Dinitrobenzene	0.075	0.93		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.93	0.12	~~JPMB~~ J a
121-14-2	2,4-Dinitrotoluene	0.097	0.93		U
606-20-2	2,6-Dinitrotoluene	0.097	0.93		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.93		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.93		U
479-45-8	Tetryl	0.075	0.93		~~U~~ UJ ccl
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.93		U
88-72-2	2-Nitrotoluene	0.075	0.93		U
99-99-0	4-Nitrotoluene	0.075	0.93		U
99-08-1	3-Nitrotoluene	0.11	0.93		U
618-87-1	3,5-Dinitroaniline	0.075	0.93		~~U~~ UJ ccl

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-05

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 16:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-01

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 21:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.047	0.94		U
121-82-4	RDX	0.047	0.94	0.081	J
98-95-3	Nitrobenzene	0.047	0.94		U
99-65-0	1,3-Dinitrobenzene	0.047	0.94		U
99-35-4	1,3,5-Trinitrobenzene	0.047	0.94	0.069	~~JPB~~ B BL
121-14-2	2,4-Dinitrotoluene	0.047	0.94		U
606-20-2	2,6-Dinitrotoluene	0.047	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.047	0.94	0.070	~~JP~~ J JC
35572-78-2	2-Amino-4,6-dinitrotoluene	0.047	0.94		U
479-45-8	Tetryl	0.047	0.94		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.047	0.94		U
88-72-2	2-Nitrotoluene	0.047	0.94		U
99-99-0	4-Nitrotoluene	0.047	0.94		U
99-08-1	3-Nitrotoluene	0.047	0.94		U
618-87-1	3,5-Dinitroaniline	0.047	0.94		U

JBC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-01

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 18:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 011V1101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 21:29

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.048	0.96		U
121-82-4	RDX	0.048	0.96		U
98-95-3	Nitrobenzene	0.048	0.96		U
99-65-0	1,3-Dinitrobenzene	0.048	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.048	0.96	0.43	JB
121-14-2	2,4-Dinitrotoluene	0.048	0.96		U
606-20-2	2,6-Dinitrotoluene	0.048	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.048	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.048	0.96		U
479-45-8	Tetryl	0.048	0.96		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.048	0.96		U
88-72-2	2-Nitrotoluene	0.048	0.96		U
99-99-0	4-Nitrotoluene	0.048	0.96		U
99-08-1	3-Nitrotoluene	0.048	0.96		U
618-87-1	3,5-Dinitroaniline	0.048	0.96		U

JB 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 18:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 012V1201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 21:57

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.048	0.95		U
121-82-4	RDX	0.048	0.95		U
98-95-3	Nitrobenzene	0.048	0.95		U
99-65-0	1,3-Dinitrobenzene	0.048	0.95		U
99-35-4	1,3,5-Trinitrobenzene	0.048	0.95	0.22	~~JPMB~~ J JC
121-14-2	2,4-Dinitrotoluene	0.048	0.95		U
606-20-2	2,6-Dinitrotoluene	0.048	0.95		U
118-96-7	2,4,6-Trinitrotoluene	0.048	0.95		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.048	0.95		U
479-45-8	Tetryl	0.048	0.95		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.048	0.95		U
88-72-2	2-Nitrotoluene	0.048	0.95		U
99-99-0	4-Nitrotoluene	0.048	0.95		U
99-08-1	3-Nitrotoluene	0.048	0.95		U
618-87-1	3,5-Dinitroaniline	0.048	0.95		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 016V1601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 19:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 013V1301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 22:25

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.050	1.0		U
121-82-4	RDX	0.050	1.0	0.56	~~JPM~~ J JC
98-95-3	Nitrobenzene	0.050	1.0		U
99-65-0	1,3-Dinitrobenzene	0.050	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.050	1.0	0.056	~~JPB~~ B CL
121-14-2	2,4-Dinitrotoluene	0.050	1.0		U
606-20-2	2,6-Dinitrotoluene	0.050	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.050	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.050	1.0		U
479-45-8	Tetryl	0.050	1.0		~~U~~ UJ CL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.050	1.0		U
88-72-2	2-Nitrotoluene	0.050	1.0	0.052	~~JP~~ J JC
99-99-0	4-Nitrotoluene	0.050	1.0		U
99-08-1	3-Nitrotoluene	0.050	1.0		U
618-87-1	3,5-Dinitroaniline	0.050	1.0		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 017V1701

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 03/24/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 19:35

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-05

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 22:53

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.049	0.98		U
121-82-4	RDX	0.049	0.98	0.10	~~JPM~~ J QC
98-95-3	Nitrobenzene	0.049	0.98		U
99-65-0	1,3-Dinitrobenzene	0.049	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.049	0.98	8.9	~~J~~
121-14-2	2,4-Dinitrotoluene	0.049	0.98		U
606-20-2	2,6-Dinitrotoluene	0.049	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.049	0.98	1.3	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.049	0.98	0.70	~~JP~~ J QC
479-45-8	Tetryl	0.049	0.98		~~UJ~~ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.049	0.98		U
88-72-2	2-Nitrotoluene	0.049	0.98		U
99-99-0	4-Nitrotoluene	0.049	0.98		U
99-08-1	3-Nitrotoluene	0.049	0.98		U
618-87-1	3,5-Dinitroaniline	0.049	0.98	0.59	J

QC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-05

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 018V1801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 20:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JJC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-06

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 23:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.047	0.94		U
121-82-4	RDX	0.047	0.94		U
98-95-3	Nitrobenzene	0.047	0.94		U
99-65-0	1,3-Dinitrobenzene	0.047	0.94		U
99-35-4	1,3,5-Trinitrobenzene	0.047	0.94	0.064	~~JB~~ B BL
121-14-2	2,4-Dinitrotoluene	0.047	0.94		U
606-20-2	2,6-Dinitrotoluene	0.047	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.047	0.94		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.047	0.94		U
479-45-8	Tetryl	0.047	0.94		U UU CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.047	0.94		U
88-72-2	2-Nitrotoluene	0.047	0.94		U
99-99-0	4-Nitrotoluene	0.047	0.94		U
99-08-1	3-Nitrotoluene	0.047	0.94		U
618-87-1	3,5-Dinitroaniline	0.047	0.94		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-06

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 020V2001

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 03/24/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 21:06

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-01

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 044V4401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 10:37

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.96	0.16	~~JP~~ J 2C
121-82-4	RDX	0.077	0.96	0.15	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.085	0.96		U
99-65-0	1,3-Dinitrobenzene	0.077	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.96	0.17	~~JPM~~ J 2C
121-14-2	2,4-Dinitrotoluene	0.10	0.96		U
606-20-2	2,6-Dinitrotoluene	0.10	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.96		U
479-45-8	Tetryl	0.077	0.96		~~JP~~ U 2C
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.96		U
88-72-2	2-Nitrotoluene	0.077	0.96		U
99-99-0	4-Nitrotoluene	0.077	0.96		U
99-08-1	3-Nitrotoluene	0.12	0.96		U
618-87-1	3,5-Dinitroaniline	0.077	0.96		U

MR 4/30/09
JPC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-01

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 024V2401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 23:07

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 045V4501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 11:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.96	0.18	J
121-82-4	RDX	0.077	0.96	0.15	J
98-95-3	Nitrobenzene	0.085	0.96		U
99-65-0	1,3-Dinitrobenzene	0.077	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.96	0.31	~~JPM~~J JC
121-14-2	2,4-Dinitrotoluene	0.10	0.96		U
606-20-2	2,6-Dinitrotoluene	0.10	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.96		U
479-45-8	Tetryl	0.077	0.96		UJQUTCA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.96		U
88-72-2	2-Nitrotoluene	0.077	0.96		U
99-99-0	4-Nitrotoluene	0.077	0.96		U
99-08-1	3-Nitrotoluene	0.12	0.96		U
618-87-1	3,5-Dinitroaniline	0.077	0.96		U

4/30/09
JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 025V2501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 23:37

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-03

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 046V4601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 11:33

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.089	1.1		U
121-82-4	RDX	0.089	1.1		U
98-95-3	Nitrobenzene	0.098	1.1		U
99-65-0	1,3-Dinitrobenzene	0.089	1.1		U
99-35-4	1,3,5-Trinitrobenzene	0.089	1.1	0.12	JBBL
121-14-2	2,4-Dinitrotoluene	0.12	1.1		U
606-20-2	2,6-Dinitrotoluene	0.12	1.1		U
118-96-7	2,4,6-Trinitrotoluene	0.089	1.1		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.1		U
479-45-8	Tetryl	0.089	1.1		UJ CA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.089	1.1		U
88-72-2	2-Nitrotoluene	0.089	1.1		U
99-99-0	4-Nitrotoluene	0.089	1.1		U
99-08-1	3-Nitrotoluene	0.13	1.1		U
618-87-1	3,5-Dinitroaniline	0.089	1.1		U

4/30/09 JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-03

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 026V2601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 00:07

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.29	3.3		U

JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-04

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 047V4701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 12:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98	4.1	K SSH
121-82-4	RDX	0.078	0.98	70	~~P~~ K SSH
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98	18	K SSH
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98	51	K SSH
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98	5.0	K SSH
479-45-8	Tetryl	0.078	0.98		U RHJ CCI
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98	0.78	~~JPM~~ J CCI

4/30/09 JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-04

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 027V2701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 00:38

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 048V4801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 12:29

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0	0.13	J B BL
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

4/30/09 JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 028V2801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 01:08

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

6809

Holding Times

Sampling Date: 3/23-3/25
Received Date: 3/25-3/27
Extraction Dates: 3/26, 3/27, 3/31
Analysis Dates: 4/8-4/24

Sample receipt documentation was in order. Cooler temps were acceptable with one exception.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

Contamination was reported in the associated field QC blanks.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
EW1BLK0327	1,3,5-trinitrobenzene	0.11J ug/L	0.55 ug/L	B	BL
YS06-EB01-032509	1,3,5-trinitrobenzene	0.17JPM ug/L	0.85 ug/L	B	BL
YS06-EB02-032509	RDX	0.15Jug/L	0.75 ug/L	B	BL

Sample ID	Compound	Q Flag	Q Code
YS06-GW03-0309, YS06-GW02-0309, YS06-GW11-0309, YS06-GW10A-0309	1,3,5-trinitrobenzene	B	BL
YS06-GW09A-0309	RDX	B	BL

SURROGATE RECOVERIES

All surrogate recovery criteria were met with the exception of one sample requiring qualifications. All reported positive results in sample YS06-GW09-0309 were qualified as biased high K.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-GW01A-0309 exhibited acceptable recoveries (within QAPP limits) in the MS and/or the MSD. RPDs were OK. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compounds in the LCS and/or the LCSD. No qualifications were required. RPDs were OK

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW01-0309 **Duplicate ID:** YS06-GW01P-0309

Compound	Sample Conc.	Duplicate Conc.	RPD
HMX	0.24	0.38	45%
RDX	0.88	1.3	39%
1,3,5-TNB			#DIV/0!

Comments: No qualifications were required. All results but RDX in the dup were <RLs.

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J. Some samples were reported with an M qualifier to indicate matrix issues. These results were qualified as estimated J if not already flagged due to another QC issue.

Reviewer JCleveland **Date:** 61109

Initial Calibration Date: 2/20/09, HPLC2, ULTRA C-18
RRF and %RSD Calculations: RF10, FILE ID 002V0401
Compound Name: rdx
Lab Value: 147.6000

Area of Compound	1476
Conc. Of Compund	10
Calculated CF	147.6000

Compound Name: rdx
Lab Value: 17.2

CF 1	147.6000
CF 2	110.4800
CF 3	195.5200
CF 4	157.8460
CF 5	139.9800
CF 6	142.6960
CF7	141.9630
Calculated % RSD	17.21

Continuing Calibration File ID: 4/15/09, 0722, File ID 037v3701.d
RRF and %D Calculations:
Compound Name: nitrobenzene
Lab Value: 388.00000

Area of Compound	388461
Conc. Of Compund	1000
Calculated CF	388.4610

Compound Name: nitrobenzene
Lab Value: 10.7

Average RRF	351.00000
Calibration Check RRF	388.00000
Calculated % D	-10.5

SAMPLE CALCULATION

Sample ID: YS06-GW10-0309
Standard ID: ICAL
Compound: 2,4,6-TNT
Concentration: 1.3 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	3531		
CF of Compound	21.4795		
Dilution Factor	1		
Weight of Sample	NA		
Extract Volume	8		
Volume of Sample	1020	NA	
% Moisture	NA		
injection volume	100	NA	
Conversion Factor	100		
Concentration	1.2900	#REF!	#REF!

ORGANIC CASE NARRATIVE – Explosives
CH2M Hill, Inc. – YORKTOWN_NWS
SDG: SDG001/ CTO166
Workorder: 0903310, 0903325 and 0903339

Sampled	Rec'd	Lab ID	Client ID
3/23/2009	3/25/2009	0903310-01	YS06-GW01A-0309
3/23/2009	3/25/2009	0903310-02	YS06-GW01-0309
3/23/2009	3/25/2009	0903310-03	YS06-GW01P-0309
3/23/2009	3/25/2009	0903310-04	YS06-EB01-032309
3/23/2009	3/25/2009	0903310-05	YS06-EB02-032309
3/24/2009	3/26/2009	0903325-01	YS06-GW02-0309
3/24/2009	3/26/2009	0903325-02	YS06-EB01-032409
3/24/2009	3/26/2009	0903325-03	YS06-EB02-032409
3/24/2009	3/26/2009	0903325-04	YS06-GW11-0309
3/24/2009	3/26/2009	0903325-05	YS06-GW10-0309
3/24/2009	3/26/2009	0903325-06	YS06-GW10A-0309
3/25/2009	3/27/2009	0903339-01	YS06-EB01-032509
3/25/2009	3/27/2009	0903339-02	YS06-EB02-032509
3/25/2009	3/27/2009	0903339-03	YS06-GW03-0309
3/25/2009	3/27/2009	0903339-04	YS06-GW09-0309
3/25/2009	3/27/2009	0903339-05	YS06-GW09A-0309

Method: The samples were analyzed by USEPA SW-846 Method 8330A (solid phase extraction followed by packed column HPLC) for waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline. Wavelengths 254nm and 210nm were used to obtain the requested quantitation limits.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: Most CCVs were within 20% difference or exceeded with a positive bias and were non-detect or were not required for confirmation. The 4/7/09 C-18 sequence CCVs exceeded 20% difference with negative biases for 3,5-dinitroaniline. Samples were reanalyzed for 3,5-dinitroaniline 4/9/09-4/10/09 and confirmed non-detect as reported on the associated sample result forms.
- Blank Results: Method blanks EW1BLK0326 and EW1BLK0327 have reported concentrations of 1,3,5-trinitrobenzene less than ½ the quantitation limit. Reported concentrations in the associated samples are qualified with a "B".
- Surrogate Recoveries: Recoveries of the surrogate exceeded the limit of 145% at 749% (C-18), 311% (P2) and 437% (P2 for PETN) in sample YS06-GW09-0309. All other surrogate recoveries were within limits.
- LCS/LCSD Results: Recoveries of Tetryl, 1,3,5-trinitrobenzene and HMX were below the limits of 20%, 65% and 80% at 0%/(62%), 55%/(96%) and 79%/(89%) in spike samples EW1BLK0331LCS/LCSD with 1,3,5-trinitrobenzene having an RPD exceeding the limit of 30 at 41. All other recoveries and relative percent differences were within limits. Results for tetryl are qualified with a "Q" in the associated samples. All other LCS/LCSD results were within limits.
- MS/MSD Results: All recoveries and relative percent differences were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately

reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

START # 11 SDG 1 S 13000
(and keep open)

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6
TAT: 21 calendar days
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL
Contact: Janice Shilling
Address: 621 Mainstream Drive Suite 270
Nashville, TN 37228
Phone: (615) 345-1115 x 252

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050

Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Expl. 8330 + PETN @ 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
												e-mail cdover@compuchemlabs.com if any questions
	2009											
YS06-GW01A-0309	3/23	1230	2	F	U		S	6	✓	✓		0903310
YS06-GW01-0309		1205	1					2		✓		USE FOR MS/MSD -01
YS06-GW01P-0309		1210	↓					2		✓		-02
YS06-EB01-032309		1335	4					2		✓		-03
YS06-EB02-032309	↓	1330	4	↓	↓			2		✓		-04
												-05

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date: 3/24/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1430	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 3/25/09	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time: 09:00	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

9/30

S 12877

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: Janice Shilling	Phone: (919) 379-4100 X4089
Report style: level IV	Address: 621 Mainstream Drive Suite 220 Nashville, TN 37228	Fax: (919) 379-4050
Disk requirement: EDD (NEDD)	Phone: (615) 345-1115 x252	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC?

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4 Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL. §330+ PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3) 0903325
YS06-GW02-0309	3/24	1030	2	F	U		S	2		✓		-01
YS06-EB01-032409		1215	4					1*		✓	-02	*low volume/ do 500ml extracti
YS06-EB02-032409		1220	4					2		✓		-03
YS06-GW11-0309		0940	2					2		✓		-04
YS06-GW10-0309		1335	2					1*		✓	-05	*low volume/ do 500ml extracti
YS06-GW10A-0309	↓	1515	2	↓	↓		↓	2		✓		-06

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Diane Byrd	Date: 3/25/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1635	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 3/26/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

09.00

Revision 0 2-10-99

Commine SDG # S 12742

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: LTO-166 NWSY SITE 6	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: JANICE SCHILLING	Phone: (919) 379-4100 X 4089
Report style: Level IV	Address: 621 MAINSTREAM DRIVE SUITE 270 NASHVILLE TN 37228	Fax: (919) 379- 4050
Disk requirement: SNEDD	Phone: (615) 345 1115 X 256	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC? _____

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other _____

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL, 8330+TNT+ 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-EB01-032509	3/25	1415	4	F	U		S	2		✓	0903141-12	0903339-01
YS06-EB02-032509	"	1620	4	"	"		"	2		✓	-13	-02
YS06-GW03-032509	"	1040	2	"	"		"	2		✓	-14	-03
YS06-GW09-032509	"	1145	2	"	"		"	2		✓	-15	-04
YS06-GW09A-032509	↓	1515	2	↓	↓		↓	2		✓	↓ -16	-05
								14			3/26/09	

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date: 3/26/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1520	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 3/27/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 10:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

8756

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903310 Number of Coolers: 1 of 2

Client: Compuchem Project: CTO - 166

Date/Time Received: 3-25-09 1000 Date cooler(s) opened: 3-25-09

Opened By (print): E. J. Overby (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8137

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3-24-09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 5.1°C

Dates samples were logged-in: 3-25-09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 2

Client: Compuchem Project: CTO - 166

Date/Time Received: 3-25-09 1000 Date cooler(s) opened: 3-25-09

Opened By (print): E.J. Overby (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8945

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3-24-09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A

4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A

5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A

6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A

7. Was project identifiable from custody papers? ..... (Yes) No N/A

8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 4.7°C

Dates samples were logged-in: 3-25-09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A

11. Did all bottles arrive unbroken? ..... Yes No N/A

12. Was all required bottle label information complete? ..... Yes No N/A

13. Did all bottle labels agree with custody papers? ..... Yes No N/A

14. Were correct containers used for the analyses indicated? ..... Yes No N/A

15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A

16. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A

17. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 2

Client: Conpuchem Project: CTO-166

Date/Time Received: 03/26/09 10:00 Date cooler(s) opened: 03/26/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 1501

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/25/09 Seal Initials: DB

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 1.5°C

Dates samples were logged-in: 03/26/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 2

Client: Conpuchem Project: CTO-166

Date/Time Received: 03/26/09 10:00 Date cooler(s) opened: 03/26/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 3098

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/25/09 Seal Initials: DB

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.5°C

Dates samples were logged-in: 03/26/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
17. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903339 Number of Coolers: 1 of 1

Client: Compuchem Project: CTO-166

Date/Time Received: 03/27/09 09:00 WS 10:00 Date cooler(s) opened: 03/27/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive? ~~FedEx~~ WS (UPS) DHL Hand Delivered
EL Courier — Other: _____

If applicable, enter airbill number here: 3343

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/26/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 4.1°C

Dates samples were logged-in: 03/27/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers? ..... WS	(Yes)	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\041V4101.D
Report Date: 27-Apr-2009 15:07

Empirical Laboratories, LLC

JLS 4.27.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 12:05
Lab File ID: 041V4101.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: 35 dna 1 09C0386 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	403	ϕ 231	0.010	-42.8	15.0	<- LOW D/KD

GW01A
GW01
GW01P
EB01-032309
EB02-032309

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\052V5201low.D
Report Date: 27-Apr-2009 15:07

JCB 4.27.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 17:12
Lab File ID: 052V5201low.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.56400	0.010	-8.4	15.0	
	2 RDX	148	142	0.010	-3.8	15.0	
$	32 1,2-Dinitrobenzene	202	189	0.010	-6.4	15.0	
	3 1,3,5-Trinitrobenzene	350	329	0.010	-6.1	15.0	
	4 1,3-Dinitrobenzene	485	452	0.010	-6.8	15.0	
	5 Tetryl	239	199	0.010	-16.9	15.0	<-low (<20%)
	6 Nitrobenzene	351	348	0.010	-0.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.99600	0.010	-11.6	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.64300	0.010	-6.6	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	316	0.010	-7.1	15.0	
	12 2,6-Dinitrotoluene	213	192	0.010	-9.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.54800	0.010	-10.3	15.0	
	14 2-Nitrotoluene	207	197	0.010	-5.0	15.0	
	15 4-Nitrotoluene	182	169	0.010	-7.5	15.0	
	16 3-Nitrotoluene	226	214	0.010	-5.4	15.0	

BM 042709

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\053V5301.D
Report Date: 27-Apr-2009 15:07

JLS 4.22.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 17:39
Lab File ID: 053V5301.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: 35 dna 1 09C0386 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	403	132	0.010	-67.2	15.0	<- low JLS 4.22.09

See prev. page for quals.

BS 04.27.09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\064V6401.D
Report Date: 27-Apr-2009 15:08

JLB 4-27-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 22:46
Lab File ID: 064V6401.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.39800	0.010	-9.2	15.0	
	2 RDX	148	143	0.010	-3.6	15.0	
$	32 1,2-Dinitrobenzene	202	187	0.010	-7.0	15.0	
	3 1,3,5-Trinitrobenzene	350	330	0.010	-5.8	15.0	
	4 1,3-Dinitrobenzene	485	449	0.010	-7.2	15.0	
	5 Tetryl	239	198	0.010	-17.0	15.0	<- LOW J/UJ
	6 Nitrobenzene	351	355	0.010	1.1	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.81100	0.010	-12.4	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.32100	0.010	-9.0	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	315	0.010	-7.6	15.0	
	12 2,6-Dinitrotoluene	213	194	0.010	-8.8	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.38200	0.010	-11.0	15.0	
	14 2-Nitrotoluene	207	196	0.010	-5.2	15.0	
	15 4-Nitrotoluene	182	168	0.010	-7.6	15.0	
	16 3-Nitrotoluene	226	214	0.010	-5.5	15.0	

See prev pages for assoc.

BM 042709

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\065V6501.D
Report Date: 27-Apr-2009 15:08

JLS 4.27.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 23:13
Lab File ID: 065V6501.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: 35 dna 1 09C0386 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	403	101	0.010	-75.0	15.0	<-LOW

JLS

GW01A
GW01
GW01P
EB01 032309
QB02 032309

DS 04.27.09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\010V1001low.D
Report Date: 30-Apr-2009 10:42

JLS 4-30-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 09-APR-2009 19:32
Lab File ID: 010V1001low.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl ccv 1000ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\8330CH2.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.53800	0.010	-8.5	15.0	
	2 RDX	148	143	0.010	-3.4	15.0	
$	32 1,2-Dinitrobenzene	202	192	0.010	-4.9	15.0	
	3 1,3,5-Trinitrobenzene	350	340	0.010	-3.1	15.0	
	4 1,3-Dinitrobenzene	485	456	0.010	-5.8	15.0	
	5 Tetryl	239	198	0.010	-17.2	15.0	<LOQ NQ
	6 Nitrobenzene	351	378	0.010	7.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.96500	0.010	-11.7	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.18900	0.010	-9.9	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.6	15.0	
	12 2,6-Dinitrotoluene	213	194	0.010	-8.9	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.35700	0.010	-11.1	15.0	
	14 2-Nitrotoluene	207	199	0.010	-4.1	15.0	
	15 4-Nitrotoluene	182	170	0.010	-6.6	15.0	
	16 3-Nitrotoluene	226	216	0.010	-4.6	15.0	

ONLY USED FOR 1,2-DNB

BM 043009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\022V2201.D
Report Date: 30-Apr-2009 10:42

JLG 4.30-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 10-APR-2009 01:06
Lab File ID: 022V2201.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.53100	0.010	-8.6	15.0	
	2 RDX	148	145	0.010	-1.7	15.0	
$	30 1,2-Dinitrobenzene	202	ϕ 194	0.010	-3.9	15.0	
	3 1,3,5-Trinitrobenzene	350	312	0.010	-10.8	15.0	
	4 1,3-Dinitrobenzene	485	505	0.010	4.2	15.0	
	5 Tetryl	239	101	0.010	-57.6	15.0	<-LOQ NQ
	6 Nitrobenzene	351	373	0.010	6.2	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	19.03000	0.010	-11.4	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.57200	0.010	-7.1	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	320	0.010	-6.2	15.0	
	12 2,6-Dinitrotoluene	213	194	0.010	-8.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.39200	0.010	-11.0	15.0	
	14 2-Nitrotoluene	207	201	0.010	-3.0	15.0	
	15 4-Nitrotoluene	182	173	0.010	-5.2	15.0	
	16 3-Nitrotoluene	226	219	0.010	-2.9	15.0	

ONLY USED FOR 1,2-DNB

BM 04/30/09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\034V3401.D
Report Date: 30-Apr-2009 10:42

JLG 4.30.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 10-APR-2009 06:40
Lab File ID: 034V3401.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.60400	0.010	-8.2	15.0	
	2 RDX	148	145	0.010	-2.2	15.0	
$	30 1,2-Dinitrobenzene	202	Φ198	0.010	-1.9	15.0	
	3 1,3,5-Trinitrobenzene	350	230	0.010	-34.3	15.0	<- LOW NQ
	4 1,3-Dinitrobenzene	485	523	0.010	7.9	15.0	
	5 Tetryl	239	++++	0.010	++++	15.0	<- NOT THERE
	6 Nitrobenzene	351	328	0.010	-6.4	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.83200	0.010	-12.3	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	13.65700	0.010	0.9	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.5	15.0	
	12 2,6-Dinitrotoluene	213	195	0.010	-8.3	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.39200	0.010	-11.0	15.0	
	14 2-Nitrotoluene	207	201	0.010	-2.8	15.0	
	15 4-Nitrotoluene	182	171	0.010	-6.0	15.0	
	16 3-Nitrotoluene	226	217	0.010	-3.9	15.0	

ONLY USED FOR 1,2-DNB

RM 043009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041109.b\017V1701.D
Report Date: 14-Apr-2009 06:45

Ans 4-14-09
JLS 4-14-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 12-APR-2009 00:16
Lab File ID: 017V1701.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0192 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041109.b\8330CH2.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	19.93300	0.010	-1.6	15.0	
	2 RDX	148	151	0.010	2.1	15.0	
$	32 1,2-Dinitrobenzene	202	199	0.010	-1.1	15.0	
	3 1,3,5-Trinitrobenzene	350	348	0.010	-0.6	15.0	
	4 1,3-Dinitrobenzene	485	482	0.010	-0.6	15.0	
	5 Tetryl	239	199	0.010	-16.7	15.0	<-
	6 Nitrobenzene	351	379	0.010	8.1	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	20.07100	0.010	-6.6	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	13.12700	0.010	-3.0	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	334	0.010	-1.9	15.0	
	12 2,6-Dinitrotoluene	213	206	0.010	-3.1	15.0	
	13 2,4-Dinitrotoluene	25.15066	23.68600	0.010	-5.8	15.0	
	14 2-Nitrotoluene	207	211	0.010	1.8	15.0	
	15 4-Nitrotoluene	182	180	0.010	-1.4	15.0	
	16 3-Nitrotoluene	226	229	0.010	1.3	15.0	

GW02-0309
8301-032409
8302-032409
GW11-0309
GW10
GW10A

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\037V3701.D
Report Date: 16-Apr-2009 13:19

JLS 4.16.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

J.H. 4.22.09

Instrument ID: hplc2.i Injection Date: 15-APR-2009 07:22
Lab File ID: 037V3701.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.72700	0.010	-7.6	15.0	
	2 RDX	148	147	0.010	-0.7	15.0	
$	30 1,2-Dinitrobenzene	202	197	0.010	-2.2	15.0	
	3 1,3,5-Trinitrobenzene	350	350	0.010	-0.1	15.0	
	4 1,3-Dinitrobenzene	485	466	0.010	-3.7	15.0	
	5 Tetryl	239	191	0.010	-20.1	15.0	<-low JLJ
	6 Nitrobenzene	351	388	0.010	10.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.70500	0.010	-12.9	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	11.83800	0.010	-12.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.5	15.0	
	12 2,6-Dinitrotoluene	213	195	0.010	-8.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.07300	0.010	-12.2	15.0	
	14 2-Nitrotoluene	207	205	0.010	-1.2	15.0	
	15 4-Nitrotoluene	182	176	0.010	-3.6	15.0	
	16 3-Nitrotoluene	226	222	0.010	-1.7	15.0	

Ave.: 6.9% x

~~See prev.~~

YS06 - EB01 - 032509
EB02 - 032509
GW03
GW09
GW09A

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\038V3801.D
Report Date: 16-Apr-2009 13:19

Empirical Laboratories, LLC

JLS 4-16-09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 07:50
Lab File ID: 038V3801.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	x ϕ 558	0.010	36.4	15.0	<-HIGH J+

GW09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\050V5001.D
Report Date: 16-Apr-2009 14:59

Empirical Laboratories, LLC

JLB 4.16.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 13:24
Lab File ID: 050V5001.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	X ϕ558	0.010	36.5	15.0	<-HIGH J+

GW09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\001V0102.D
Report Date: 26-Apr-2009 16:27

JLS 4.26.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 23-APR-2009 11:19
Lab File ID: 001V0102.D Init. Cal. Date(s): 29-NOV-2004 12-MAR-2009
Analysis Type: Init. Cal. Times: 16:41 05:41
Lab Sample ID: mix#4 1/5ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\8332C.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
$ 29 1,2-Dinitrobenzene	384	456	0.010	18.9	15.0	<-HIGH NQ
8 Nitroglycerin	9.72121	10.56920	0.010	8.7	15.0	
17 PETN	180	Δ 195	0.010	8.2	15.0	

<20%

lal 4/27/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\116V1601.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 00:52
Lab File ID: 116V1601.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.96000	0.010	4.6	15.0	
	2 RDX	275	290	0.010	5.4	15.0	
	4 3,5-Dinitroaniline	1000	1024	0.010	-2.4	15.0	
	5 Nitrobenzene	258	251	0.010	-2.6	15.0	
	6 4-Amino-2,6-dinitrotolune	359	285	0.010	-20.7	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.11000	0.010	-0.5	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.20500	0.010	-13.6	15.0	
	10 2-Nitrotoluene	367	349	0.010	-4.9	15.0	
	12 3-NT/4-NT	242	234	0.010	-3.4	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	974	0.010	2.6	15.0	
	14 2,6-Dinitrotoluene	1000	969	0.010	3.1	15.0	
	15 1,3,5-Trinitrobenzene	1000	917	0.010	8.3	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.59800	0.010	-5.6	15.0	
	17 Tetryl	1000	940	0.010	6.0	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.20600	0.010	-15.2	15.0	<- NQ

4/24/09

WL
4/27/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\129V2901.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 08:55
Lab File ID: 129V2901.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.24700	0.010	2.3	15.0	
	2 RDX	275	272	0.010	-0.8	15.0	
	4 3,5-Dinitroaniline	1000	1019	0.010	-1.9	15.0	
	5 Nitrobenzene	258	249	0.010	-3.5	15.0	
	6 4-Amino-2,6-dinitrotolune	359	282	0.010	-21.4	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.01100	0.010	-1.2	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.27900	0.010	-12.7	15.0	
	10 2-Nitrotoluene	367	362	0.010	-1.4	15.0	
	12 3-NT/4-NT	242	239	0.010	-1.2	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	989	0.010	1.1	15.0	
	14 2,6-Dinitrotoluene	1000	1010	0.010	-1.0	15.0	
	15 1,3,5-Trinitrobenzene	1000	969	0.010	3.1	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.95600	0.010	-0.5	15.0	
	17 Tetryl	1000	998	0.010	0.2	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.23500	0.010	-14.7	15.0	

WL
4/27/09

FORM 4
EXPL METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

EW1BLK0326

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: EW1BLK0326 Lab File ID: 042V4201LOW

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc/Soxh) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 03/26/09

Date Analyzed (1): 04/08/09 Date Analyzed (2): 04/23/09

Time Analyzed (1): 1233 Time Analyzed (2): 1726

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column (1): ULTRA C-18 ID: 4.60(mm) Column (2): PINNACLE2 BIPHENYL ID: 4.60(m

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EW1BLK0326LC	EW1BLK0326LCS	04/08/09	
02	YS06-GW01A-0	0903310-01	04/08/09	04/23/09
03	YS06-GW01A-0	0903310-01MS	04/08/09	
04	YS06-GW01A-0	0903310-01MSD	04/08/09	
05	YS06-GW01-03	0903310-02	04/08/09	04/23/09
06	YS06-GW01P-0	0903310-03	04/08/09	04/23/09
07	YS06-EB01-03	0903310-04	04/08/09	04/23/09
08	YS06-EB02-03	0903310-05	04/08/09	04/23/09
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19				
20				
21				
22				
23				
24				
25				
26				

1,3,5-TNT
~~3/5~~ 3,5-DNA run on C-18
4/9/09
4/10/09
NA
NA
Microbiology

COMMENTS: 0.11J/0.55

page 1 of 1

FORM IV EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EW1BLK0326

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: EW1BLK0326

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 042V4201LOW

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 12:33

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.11	JP
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

FORM 4
EXPL METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

EW1BLK0327

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: EW1BLK0327 Lab File ID: 005V0501

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc/Soxh) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 03/27/09

Date Analyzed (1): 04/11/09 Date Analyzed (2): 04/23/09

Time Analyzed (1): 1842 Time Analyzed (2): 2109

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column (1): ULTRA C-18 ID: 4.60(mm) Column (2): PINNACLE2 BIPHENYL ID: 4.60(m

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EW1BLK0327LC	EW1BLK0327LCS	04/11/09	
02	EW1BLK0327LC	EW1BLK0327LCSD	04/11/09	
03	EW1BLK0327LC	EW1BLK0327LCSN	04/11/09	
04	EW1BLK0327LC	EW1BLK0327LCSD	04/11/09	
05	YS06-GW02-03	0903325-01	04/11/09	04/23/09
06	YS06-EB01-03	0903325-02	04/11/09	04/23/09
07	YS06-EB02-03	0903325-03	04/11/09	04/23/09
08	YS06-GW11-03	0903325-04	04/11/09	04/23/09
09	YS06-GW10-03	0903325-05	04/11/09	04/24/09
10	YS06-GW10A-0	0903325-06	04/11/09	04/24/09
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26				

1,3,5-TNT

B

B

B

COMMENTS: 0.11J / 0.55

FORM IV EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EW1BLK0327

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: EW1BLK0327

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 005V0501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 18:42

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.050	1.0		U
121-82-4	RDX	0.050	1.0		U
98-95-3	Nitrobenzene	0.050	1.0		U
99-65-0	1,3-Dinitrobenzene	0.050	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.050	1.0	0.11	J
121-14-2	2,4-Dinitrotoluene	0.050	1.0		U
606-20-2	2,6-Dinitrotoluene	0.050	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.050	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.050	1.0		U
479-45-8	Tetryl	0.050	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.050	1.0		U
88-72-2	2-Nitrotoluene	0.050	1.0		U
99-99-0	4-Nitrotoluene	0.050	1.0		U
99-08-1	3-Nitrotoluene	0.050	1.0		U
618-87-1	3,5-Dinitroaniline	0.050	1.0		U

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT	
01	EW1BLK0326	101	85					0	
02	EW1BLK0326LC	92						0	
03	YS06-GW01A-0	96	81					0	
04	YS06-GW01A-0	95						0	
05	YS06-GW01A-0	93						0	
06	YS06-GW01-03	95	85					0	
07	YS06-GW01P-0	88	93					0	
08	YS06-EB01-03	105	93					0	
09	YS06-EB02-03	102	79					0	
10	EW1BLK0327	106	88					0	
11	EW1BLK0327LC	96						0	
12	EW1BLK0327LC	97						0	
13	EW1BLK0327LC							0	
14	EW1BLK0327LC							0	
15	YS06-GW02-03	97	82					0	
16	YS06-EB01-03	102	82					0	
17	YS06-EB02-03	96	79					0	
18	YS06-GW11-03	97	79					0	
19	YS06-GW10-03	93	111					0	
20	YS06-GW10A-0	111	86					0	
21	EW1BLK0331	106	92					0	
22	EW1BLK0331LC	102						0	
23	EW1BLK0331LC	104						0	
24	EW1BLK0331LC							0	
25	EW1BLK0331LC							0	
26	YS06-EB01-03	120	104					0	
27	YS06-EB02-03	121	90					0	
28	YS06-GW03-03	117	91					0	
29	YS06-GW09-03	749*	311*					2	K+
30	YS06-GW09A-0	127	81					0	

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER EXPL SURROGATE RECOVERY

PETN

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Column(1): ULTRA C-18 ID: 4.60 (mm) Column (2): Pinnacle 2 m 4/29/09

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	EW1BLK0326	102						0
02	EW1BLK0326LC	115						0
03	YS06-GW01A-0	100						0
04	YS06-GW01A-0	91						0
05	YS06-GW01A-0	103						0
06	YS06-GW01-03	98						0
07	YS06-GW01P-0	98						0
08	YS06-EB01-03	99						0
09	YS06-EB02-03	95						0
10	EW1BLK0327	107	88					0
11	EW1BLK0327LC	92						0
12	EW1BLK0327LC	102						0
13	YS06-GW02-03	100						0
14	YS06-EB01-03	102						0
15	YS06-EB02-03	98						0
16	YS06-GW11-03	99						0
17	YS06-GW10-03	100						0
18	YS06-GW10A-0	104						0
19	EW1BLK0331	106						0
20	EW1BLK0331LC	108						0
21	EW1BLK0331LC	96						0
22	YS06-EB01-03	110	104					0
23	YS06-EB02-03	100	90					0
24	YS06-GW03-03	97						0
25	YS06-GW09-03	437*						1 K+
26	YS06-GW09A-0	95						0
27								
28								
29								
30								

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
HMX	10.00	0.0000	7.946	79*	80-115
RDX	10.00	0.0000	8.884	89	50-160
Nitrobenzene	10.00	0.0000	7.924	79	50-140
1,3-Dinitrobenzene	10.00	0.0000	8.711	87	45-160
1,3,5-Trinitrobenzene	10.00	0.0000	5.478	55*	65-140
2,4-Dinitrotoluene	10.00	0.0000	7.829	78	60-135
2,6-Dinitrotoluene	10.00	0.0000	8.199	82	60-135
2,4,6-Trinitrotoluene	10.00	0.0000	7.041	70	50-145
2-Amino-4,6-dinitrotolu	10.00	0.0000	8.228	82	50-155
Tetryl	10.00	0.0000	0.0000	0*	20-175
4-Amino-2,6-dinitrotolu	10.00	0.0000	8.745	87	55-155
2-Nitrotoluene	10.00	0.0000	8.322	83	45-135
4-Nitrotoluene	10.00	0.0000	8.263	83	50-130
3-Nitrotoluene	10.00	0.0000	8.464	85	50-130

No Quals - LCSD all OK

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	8.918	89	10	30	80-115
RDX	10.00	10.11	101	12	30	50-160
Nitrobenzene	10.00	10.60	106	29	30	50-140
1,3-Dinitrobenzene	10.00	9.708	97	11	30	45-160
1,3,5-Trinitrobenzene	10.00	9.580	96	41*	30	65-140
2,4-Dinitrotoluene	10.00	8.907	89	13	30	60-135
2,6-Dinitrotoluene	10.00	9.249	92	12	30	60-135
2,4,6-Trinitrotoluene	10.00	8.435	84	18	30	50-145
2-Amino-4,6-dinitrotolu	10.00	9.319	93	12	30	50-155
Tetryl	10.00	6.165	62	N/A	30	20-175
4-Amino-2,6-dinitrotolu	10.00	8.700	87	0	30	55-155
2-Nitrotoluene	10.00	8.969	90	7	30	45-135
4-Nitrotoluene	10.00	9.058	90	9	30	50-130
3-Nitrotoluene	10.00	9.230	92	7	30	50-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 14 outside limits
Spike Recovery: 3 out of 28 outside limits

COMMENTS: _____

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-02 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.45	3.17	3.73	0.2444	
	2	2.78	2.49	3.11	0.2876	16.2
RDX	1	5.33	4.95	5.67	0.8831	
	2	3.27	3.09	3.51	0.8146	8.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-03 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.45	3.17	3.73	0.3801	
	2	2.79	2.49	3.11	0.6480	52.1
RDX	1	5.33	4.95	5.67	1.349	
	2	3.28	3.09	3.51	1.339	0.7
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-04 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.38	4.95	5.67	0.08554	
	2	3.28	3.09	3.51	0.6266	152.0
1,3,5-Trinitrobenzene	1	7.47	6.77	7.61	0.6175	
	2	15.98	15.86	17.16	0.4459	32.3
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-05 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.47	6.77	7.61	0.4618	
	2	15.90	15.86	17.16	0.1182	118.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-01 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.45	4.97	5.69	0.08082	
	2	3.12	3.09	3.51	0.09884	20.1
1,3,5-Trinitrobenzene	1	7.52	6.80	7.64	0.06921	
	2	16.05	15.86	17.16	0.2828	121.4
2,4,6-Trinitrotoluene	1	10.97	10.66	11.92	0.06957	
	2	22.44	21.81	24.01	0.2742	119.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-02 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.49	6.80	7.64	0.4262	
	2	16.26	15.86	17.16	0.4281	0.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-03 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.51	6.80	7.64	0.3866	
	2	16.24	15.86	17.16	0.2196	55.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-04 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.62	4.97	5.69	3.871	
	2	3.21	3.09	3.51	0.5559	149.8
1,3,5-Trinitrobenzene	1	7.50	6.80	7.64	0.05651	
	2	16.29	15.86	17.16	0.5083	160.0
2-Nitrotoluene	1	15.40	14.66	15.98	0.05163	
	2	10.88	10.45	11.19	0.1256	83.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-05 Date(s) Analyzed: 04/11/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.37	4.97	5.69	0.4240	
	2	3.28	3.09	3.51	0.1016	122.7
1,3,5-Trinitrobenzene	1	7.25	6.80	7.64	8.880	
	2	16.53	15.86	17.16	10.34	15.2
2,4,6-Trinitrotoluene	1	11.32	10.66	11.92	1.289	
	2	22.94	21.81	24.01	1.442	11.2
2-Amino-4,6-dinitrotoluen	1	12.27	11.48	13.00	0.7054	
	2	8.02	7.31	8.13	2.916	122.1
3,5-Dinitroaniline	1	9.54	9.03	10.03	0.5924	
	2	5.93	5.42	6.42	0.5927	0.0
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-06 Date(s) Analyzed: 04/11/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.49	6.80	7.64	0.06356	
	2	16.49	15.86	17.16	0.09323	37.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-01 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.19	3.75	0.1572	
	2	2.79	2.49	3.11	0.2616	49.8
RDX	1	5.24	5.02	5.74	0.1528	
	2	3.26	3.09	3.51	0.8020	136.0
1,3,5-Trinitrobenzene	1	7.57	6.87	7.71	0.9791	
	2	16.71	15.86	17.16	0.1697	140.9
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-02 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.19	3.75	0.1769	
	2	2.79	2.49	3.11	0.1438	20.6
RDX	1	5.49	5.02	5.74	0.1482	
	2	3.19	3.09	3.51	0.1535	3.5
1,3,5-Trinitrobenzene	1	7.56	6.87	7.71	0.6042	
	2	16.47	15.86	17.16	0.3060	65.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-03 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.56	6.87	7.71	0.1202	
	2	16.33	15.86	17.16	0.1647	31.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-04 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.19	3.75	4.120	
	2	2.80	2.49	3.11	3.725	10.1
RDX	1	5.35	5.02	5.74	69.86	
	2	3.30	3.09	3.51	43.66	46.2
1,3-Dinitrobenzene	1	8.67	8.18	9.18	17.99	
	2	10.31	10.03	10.71	15.78	13.1
2,4-Dinitrotoluene	1	13.34	12.69	13.97	50.74	
	2	17.82	17.43	18.59	39.92	23.9
2-Amino-4,6-dinitrotoluen	1	12.37	11.61	13.13	4.954	
	2	7.91	7.31	8.13	6.885	32.6
3,5-Dinitroaniline	1	9.60	9.07	10.07	1.421	
	2	5.89	5.42	6.42	0.7776	58.5
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-05 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.46	5.02	5.74	0.1322	
	2	3.15	3.09	3.51	0.09298	34.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # SDG002, Empirical Laboratories
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameter noted in the table below for SDG #s SDG002. The data validation was performed in accordance with the SW-846 8330 for explosives, PETN and 3,5-dinitroaniline. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site.

Sample ID	Lab ID	Matrix	EXP
YS06-EB01-032609	0903355-04	water	X
YS06-EB01-033109	0904043-03	water	X
YS06-EB01-040109	0904043-10	water	X
YS06-EB01-040209	0904058-03	water	X
YS06-EB01-040309	0904058-05	water	X
YS06-EB02-032609	0903354-04	water	X
YS06-EB02-040109	0904043-11	water	X
YS06-FB01-032609	0903354-01	water	X
YS06-FB01-040109	0904043-09	water	X
YS06-GW04-0309	0904043-02	water	X
YS06-GW06-0309	0903354-02	water	X
YS06-GW06A-0309	0903354-03	water	X
YS06-GW08-0309	0904043-01	water	X
YS06-GW09B-0409	0904058-04	water	X
YS06-GW12-0409	0904058-01	water	X
YS06-GW12A-0409	0904043-08	water	X
YS06-GW12P-0409	0904058-02	water	X
YS06-GW13-0409	0904043-06	water	X
YS06-GW13A-0409	0904043-07	water	X
YS06-GW14-0309	0904043-04	water	X
YS06-GW15-0309	0904043-05	water	X
YS06-GW07-0309	0903355-01	water	X
YS06-GW05B-0309	0903355-02	water	X
YS06-GW05BP-0309	0903355-03	water	X
YS06-GW12-0409MS	0904058-01MS	water	X
YS06-GW12-0409MSD	0904058-01MSD	water	X

The following quality control samples were provided with this SDG: samples YS06-EB01-032609, YS06-EB01-033109, YS06-EB01-040109, YS06-EB01-040209, YS06-

EB01-040309, YS06-EB02-032609, and YS06-EB02-040109-equipment blanks; samples YS06-FB01-032609 and YS06-FB01-040109-field blanks; sample YS06-GW12P-0409-field duplicate of sample YS06-GW12-0409; and sample YS06-GW05BP-0309-field duplicate of sample YS06-GW05B-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Sample Condition *
- HPLC Performance *
- Initial/Continuing Calibrations
- Blanks
- Surrogates
- Laboratory Control Samples
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No issues requiring the rejection of analytical data were noted in this data package.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following

paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

Explosives by 8330

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

One of the samples exhibited high surrogate recoveries and two samples exhibited low surrogate recoveries. Results in the samples were qualified.

The LCS pair exhibited low recoveries for one compound; therefore, the compound was qualified in the associated samples.

One sample required a dilution to obtain results within the calibration range.

One reported non-detect result in sample YS06-GW05BP-0309 was reported as presumptively present at an estimated concentration, NJ, based on review of the chromatogram.

One of the field duplicate pairs exhibited one compound with a non-compliant RPD. The results for this compound were qualified as estimated in the field duplicate pair.

All P flagged results were qualified as estimated.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required. Clarification and a corrected narrative were required from the laboratory regarding sample receipt. A copy of the e-mail correspondence is included in the validation narrative.

Technical Holding Times

According to chain of custody records, sampling was performed on 3/26-4/3 and samples were received at the sub-contracting laboratory 3/28 and 4/3. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D	Samples	Q Flag	Q Code
4/15/09, 2045	tetryl	-16.8	YS06-FB01-032609, YS06-EB02-032609, YS06-GW06-0309, YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-EB01-032609	J/UJ	CCL
4/16/09, 2144	tetryl	-19.6			
4/17/09, 0346	tetryl	-29.5			
4/24/09, 1935	PETN	18	YS06-GW13A-0409	J	CCH

Blanks

Explosives

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
YS06-FB01-032609	1,3,5-trinitrobenzene	0.34JPM ug/L	1.7 ug/L	B	BL
YS06-EB01-032609	HMX	0.22J ug/L	1.1 ug/L	B	BL
YS06-FB01-040109	1,3,5-trinitrobenzene	0.15JPM ug/L	0.75 ug/L	B	BL
	RDX	0.13JP ug/L	0.65 ug/L	B	BL
YS06-EB02-040109	RDX	0.52JP ug/L	2.6 ug/L	B	BL
YS06-EB01-040309	1,3,5-trinitrobenzene	0.22JPM ug/L	1.1 ug/L	B	BL

Qualifications required in the field samples are noted in the following table.

Sample ID	Compound	Q Flag	Q Code
YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW12-0409, YS06-GW09B-0409	1,3,5-trinitrobenzene	B	BL
YS06-GW07-0309	HMX	B	BL
YS06-GW13A-0409	RDX	B	BL

Surrogates

Explosives

Sample YS06-GW06-0309 exhibited low recoveries for 1,2-dinitrobenzene (15/11/14); therefore all results in the sample were qualified as biased low (L/UL), qualifier code: SSL.

Sample YS06-GW13-0409 exhibited low recoveries for 1,2-dinitrobenzene (46/0); therefore all results in the sample were qualified as biased low (L/UL), qualifier code: SSL.

Sample YS06-GW04-0309 exhibited high recoveries for 1,2-dinitrobenzene (316/47650); therefore all positive results in the sample were qualified as biased high (K), qualifier code: SSH.

Laboratory Control Sample

Explosives

The LCS pair submitted exhibited low recoveries for 1,3,5-trinitrobenzene (55% & 41%); therefore the positive and non-detect results for the compound were qualified as biased low, L/UL with a qualifier code of BSL.

Field Duplicates

Explosives

One of the field duplicate pairs submitted in this SDG exhibited a non-compliant RPD for one compound. Specific action is noted in the following table.

FD Pair	Compound	Samples Affected	RPD	Q Flag	Q Code
YS06-GW05B-0309, YS06-GW05BP-0309	2,4-dintrotoluene	YS06-GW05B-0309, YS06-GW05BP-0309	42	J	FD

Identification/Quantitation

Explosives

A dilution was required for samples YS06-GW04-0309 to obtain results within the calibration range for one target compound. Therefore, E-flagged compound results were not used from the initial analysis in favor of the corresponding D-flagged compound in the dilution analysis, qualifier code: DL.

The compound 2,4-dinitrotoluene was not confirmed in sample YS06-GW05BP-0309. The compound was detected with good peak resolution within the RTW on the primary column in both the field sample and field duplicate. The peak was identified on the confirmation column in the field sample but was not in the field duplicate. Review of the chromatogram for the field duplicate sample indicated that there was a peak present that had been identified as tetryl. Review of the chromatograms of the associated standards indicated that the compounds tetryl and 2,4-dintrotoluene essentially co-eluted. Therefore, based on a review of the raw data the reported non-detect result for 2,4-dinitrotoluene in sample YS06-GW05BP-0309 is replaced with the quantitated result from the primary column (4.0 ug/L) and flagged as presumptively present at an estimated

concentration NJ with a qualifier code of OT. A copy of the raw data used to make this determination is included in the validation worksheets.

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Reporting Limits

Explosives by 8330

Two of the target compounds did not meet the QAPP established method detection limits (MDLs) as noted on page 96 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) met criteria. No validation action was required.

Compound	QAPP MDL (ug/L)	Lab MDL (ug/L)
2-amino-4,6-dinitrotoluene	0.1	0.12
3-nitrotoluene	0.1	0.12

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Explosives

Sample ID	Compound	Results	Q Flag	Q code
YS06-FB01-032609, YS06-EB02-032609, YS06-GW06-0309, YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-EB01-032609	tetryl	+/-	J/UJ	CCL
YS06-GW13A-0409	PETN	+	J	CCH
YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW12-0409, YS06-GW09B-0409	1,3,5-trinitrobenzene	+	B	BL
YS06-GW07-0309	HMX	+	B	BL
YS06-GW13A-0409	RDX	+	B	BL
YS06-GW06-0309, YS06-GW13-0409	all compounds	+/-	L/UL	SSL
YS06-GW04-0309	all compounds	+	K	SSH
all samples	1,3,5-trinitrobenzene	+/-	L/UL	BSL
YS06-GW05B-0309, YS06-GW05BP-0309	2,4-dinitrotoluene	+	J	FD
YS06-GW04-0309	2-amino-4,6-dinitrotoluene	+E	R	DL
YS06-GW05BP-0309	2,4-dinitrotoluene	-	4.0 NJ	OT
all samples	all compounds	+P	J	2C

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 009V0901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 18:54

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.16	2.0		U
121-82-4	RDX	0.16	2.0		U
98-95-3	Nitrobenzene	0.18	2.0		U
99-65-0	1,3-Dinitrobenzene	0.16	2.0		U
99-35-4	1,3,5-Trinitrobenzene	0.16	2.0	0.34	~~JPM~~ L BS
121-14-2	2,4-Dinitrotoluene	0.21	2.0		U
606-20-2	2,6-Dinitrotoluene	0.21	2.0		U
118-96-7	2,4,6-Trinitrotoluene	0.16	2.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.24	2.0		U
479-45-8	Tetryl	0.16	2.0		~~U~~ 10 CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.16	2.0		U
88-72-2	2-Nitrotoluene	0.16	2.0		U
99-99-0	4-Nitrotoluene	0.16	2.0		U
99-08-1	3-Nitrotoluene	0.24	2.0		U
618-87-1	3,5-Dinitroaniline	0.16	2.0		U

5/1/09
JJC
6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 029V2901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 01:38

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.53	6.0		U

JRC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-02

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 19:22

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98		U
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

UL SSL

UL SSL

5.1.09 JAC 6809 JAC 61109

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-02

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 030V3001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 02:09

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U UL SSL

JAC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 011V1101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 19:50

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.076	0.95		U
121-82-4	RDX	0.076	0.95		U
98-95-3	Nitrobenzene	0.084	0.95		U
99-65-0	1,3-Dinitrobenzene	0.076	0.95		U
99-35-4	1,3,5-Trinitrobenzene	0.076	0.95	0.088	~~JP~~ B BL
121-14-2	2,4-Dinitrotoluene	0.099	0.95		U
606-20-2	2,6-Dinitrotoluene	0.099	0.95		U
118-96-7	2,4,6-Trinitrotoluene	0.076	0.95	0.30	~~JP~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.95	0.44	~~JP~~ J 2C
479-45-8	Tetryl	0.076	0.95		U Q UJ CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.076	0.95		U
88-72-2	2-Nitrotoluene	0.076	0.95		U
99-99-0	4-Nitrotoluene	0.076	0.95		U
99-08-1	3-Nitrotoluene	0.11	0.95		U
618-87-1	3,5-Dinitroaniline	0.076	0.95		U

5.1.09

JC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 031V3101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 02:39

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-04

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 012V1201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 20:17

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.16	2.0	0.22	~~JPM~~ J 2C
121-82-4	RDX	0.16	2.0	0.21	~~JPM~~ J 2C
98-95-3	Nitrobenzene	0.18	2.0		U
99-65-0	1,3-Dinitrobenzene	0.16	2.0		U
99-35-4	1,3,5-Trinitrobenzene	0.16	2.0	0.31	~~JPM~~ L BSL
121-14-2	2,4-Dinitrotoluene	0.21	2.0		U
606-20-2	2,6-Dinitrotoluene	0.21	2.0		U
118-96-7	2,4,6-Trinitrotoluene	0.16	2.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.24	2.0		U
479-45-8	Tetryl	0.16	2.0		~~U~~ QUCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.16	2.0		U
88-72-2	2-Nitrotoluene	0.16	2.0		U
99-99-0	4-Nitrotoluene	0.16	2.0		U
99-08-1	3-Nitrotoluene	0.24	2.0		U
618-87-1	3,5-Dinitroaniline	0.16	2.0		U

m=5.109 JPC 4/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-04

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 033V3301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 03:40

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.53	6.0		U

JDC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 013V1301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/16/09 22:40

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.10	~~JPM~~B BL
121-82-4	RDX	0.080	1.0	0.32	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.36	~~JPM~~B BL
121-14-2	2,4-Dinitrotoluene	0.10	1.0	6.4	
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0	0.11	~~JP~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0	0.24	~~JP~~ J 2C
479-45-8	Tetryl	0.080	1.0		~~J~~ QU CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

5.1.09 DLC 0809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 034V3401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 04:10

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-02

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/16/09 23:08

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.076	0.95	7.2	
121-82-4	RDX	0.076	0.95	20	
98-95-3	Nitrobenzene	0.084	0.95		U
99-65-0	1,3-Dinitrobenzene	0.076	0.95	0.34	J
99-35-4	1,3,5-Trinitrobenzene	0.076	0.95	~~0.98~~	B BL
121-14-2	2,4-Dinitrotoluene	0.099	0.95	2.6	J FD
606-20-2	2,6-Dinitrotoluene	0.099	0.95		U
118-96-7	2,4,6-Trinitrotoluene	0.076	0.95	1.0	~~J~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.95	5.4	
479-45-8	Tetryl	0.076	0.95		R QW J 2C
19406-51-0	4-Amino-2,6-dinitrotoluene	0.076	0.95		U
88-72-2	2-Nitrotoluene	0.076	0.95		U
99-99-0	4-Nitrotoluene	0.076	0.95		U
99-08-1	3-Nitrotoluene	0.11	0.95		U
618-87-1	3,5-Dinitroaniline	0.076	0.95		U

5.1.09
6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-02

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 035V3501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 04:40

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 4/30/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW0
5BP-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/16/09 23:35

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.94	8.3	
121-82-4	RDX	0.075	0.94	23	
98-95-3	Nitrobenzene	0.083	0.94		U
99-65-0	1,3-Dinitrobenzene	0.075	0.94	0.37	J
99-35-4	1,3,5-Trinitrobenzene	0.075	0.94	0.77	~~J~~ BBL
121-14-2	2,4-Dinitrotoluene	0.098	0.94	4.0	~~U~~ NJ QT
606-20-2	2,6-Dinitrotoluene	0.098	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.94	0.99	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.94	5.4	
479-45-8	Tetryl	0.075	0.94		UQRJCA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.94		U
88-72-2	2-Nitrotoluene	0.075	0.94		U
99-99-0	4-Nitrotoluene	0.075	0.94		U
99-08-1	3-Nitrotoluene	0.11	0.94		U
618-87-1	3,5-Dinitroaniline	0.075	0.94		U

5.1.09 JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW0
5BP-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 036V3601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 05:11

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

DAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-04

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 016V1601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/17/09 00:03

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.92	0.22	J
121-82-4	RDX	0.074	0.92		U
98-95-3	Nitrobenzene	0.081	0.92		U
99-65-0	1,3-Dinitrobenzene	0.074	0.92		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.92	0.23	~~JPM~~ L BSL
121-14-2	2,4-Dinitrotoluene	0.096	0.92		U
606-20-2	2,6-Dinitrotoluene	0.096	0.92		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.92		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.92		U
479-45-8	Tetryl	0.074	0.92		~~U~~ RLT CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.92		U
88-72-2	2-Nitrotoluene	0.074	0.92		U
99-99-0	4-Nitrotoluene	0.074	0.92		U
99-08-1	3-Nitrotoluene	0.11	0.92		U
618-87-1	3,5-Dinitroaniline	0.074	0.92		U

5.1.09
6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-04

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 037V3701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 05:41

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.24	2.8		U

JPC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW08-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-01

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 076V7601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 04:15

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98		U
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW08-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-01

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 041V4101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 07:42

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JWC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW04-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 077V7701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 04:42

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	1.6	K SSH
121-14-2	2,4-Dinitrotoluene	0.10	1.0	36	K SSH
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0	~~2900~~	~~EPM~~ R DL
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW04-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 042V4201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 08:12

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW0
4-0309DL

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-02DL

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 003V0301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 13:16

Injection Volume: 100.0(uL) Dilution Factor: 1000.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
35572-78-2	2-Amino-4,6-dinitrotoluene	120	1000	7400	D

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-033109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 004V0401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 13:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.94		U
121-82-4	RDX	0.075	0.94		U
98-95-3	Nitrobenzene	0.083	0.94		U
99-65-0	1,3-Dinitrobenzene	0.075	0.94		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.94		~~U~~ UL BSL
121-14-2	2,4-Dinitrotoluene	0.098	0.94		U
606-20-2	2,6-Dinitrotoluene	0.098	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.94	0.10	~~JP~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.94		U
479-45-8	Tetryl	0.075	0.94		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.94		U
88-72-2	2-Nitrotoluene	0.075	0.94		U
99-99-0	4-Nitrotoluene	0.075	0.94		U
99-08-1	3-Nitrotoluene	0.11	0.94		U
618-87-1	3,5-Dinitroaniline	0.075	0.94		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-033109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 043V4301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 08:43

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW14-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 005V0501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 14:12

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

1 uL BSC

JMC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW14-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 044V4401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 09:13

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW15-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 081V8101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 06:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

ULBSL

JAC 6805

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW15-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 045V4501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 09:43

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-06

Sample wt/vol: 950.0 (g/ml) ML Lab File ID: 082V8201

% Moisture: _____ decanted: (Y/N) __ Date Sampled: 04/01/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted: 04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 07:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.084	1.0		U
121-82-4	RDX	0.084	1.0		U
98-95-3	Nitrobenzene	0.093	1.0		U
99-65-0	1,3-Dinitrobenzene	0.084	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.084	1.0		U
121-14-2	2,4-Dinitrotoluene	0.11	1.0		U
606-20-2	2,6-Dinitrotoluene	0.11	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.084	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.0		U
479-45-8	Tetryl	0.084	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.084	1.0		U
88-72-2	2-Nitrotoluene	0.084	1.0		U
99-99-0	4-Nitrotoluene	0.084	1.0		U
99-08-1	3-Nitrotoluene	0.13	1.0		U
618-87-1	3,5-Dinitroaniline	0.084	1.0		U

UL SSL

JJC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-06

Sample wt/vol: 950.0 (g/ml) ML Lab File ID: 047V4701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 10:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.28	3.2		U UL SSL

6809

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-07

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 083V8301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 07:29

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98	0.28	~~J~~ B BL
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		~~U~~ UL BSL
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-07

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 048V4801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 11:14

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9	2.0	~~JPJ~~ CCH

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-08

Sample wt/vol: 850.0 (g/ml) ML Lab File ID: 084V8401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 07:58

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.094	1.2		U
121-82-4	RDX	0.094	1.2		U
98-95-3	Nitrobenzene	0.10	1.2		U
99-65-0	1,3-Dinitrobenzene	0.094	1.2		U
99-35-4	1,3,5-Trinitrobenzene	0.094	1.2		U
121-14-2	2,4-Dinitrotoluene	0.12	1.2		U
606-20-2	2,6-Dinitrotoluene	0.12	1.2		U
118-96-7	2,4,6-Trinitrotoluene	0.094	1.2	0.21	~~JP~~ J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.14	1.2		U
479-45-8	Tetryl	0.094	1.2		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.094	1.2		U
88-72-2	2-Nitrotoluene	0.094	1.2		U
99-99-0	4-Nitrotoluene	0.094	1.2		U
99-08-1	3-Nitrotoluene	0.14	1.2		U
618-87-1	3,5-Dinitroaniline	0.094	1.2		U

VuL BSL

2C

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-08

Sample wt/vol: 850.0 (g/ml) ML Lab File ID: 049V4901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 11:45

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.31	3.5		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-09

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 085V8501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 08:25

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98	0.13	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98	0.15	~~JPM~~ L BSL
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-09

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 050V5001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 13:31

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JJC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-10

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 087V8701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 09:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.089	1.1		U
121-82-4	RDX	0.089	1.1		U
98-95-3	Nitrobenzene	0.098	1.1		U
99-65-0	1,3-Dinitrobenzene	0.089	1.1		U
99-35-4	1,3,5-Trinitrobenzene	0.089	1.1		U
121-14-2	2,4-Dinitrotoluene	0.12	1.1		U
606-20-2	2,6-Dinitrotoluene	0.12	1.1		U
118-96-7	2,4,6-Trinitrotoluene	0.089	1.1		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.1		U
479-45-8	Tetryl	0.089	1.1		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.089	1.1		U
88-72-2	2-Nitrotoluene	0.089	1.1		U
99-99-0	4-Nitrotoluene	0.089	1.1		U
99-08-1	3-Nitrotoluene	0.13	1.1		U
618-87-1	3,5-Dinitroaniline	0.089	1.1		U

ULBSL

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-10

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 051V5101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 14:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.29	3.3		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-11

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 089V8901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 10:17

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.93		U
121-82-4	RDX	0.075	0.93	0.52	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.082	0.93		U
99-65-0	1,3-Dinitrobenzene	0.075	0.93		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.93		~~U~~ UL BSL
121-14-2	2,4-Dinitrotoluene	0.097	0.93		U
606-20-2	2,6-Dinitrotoluene	0.097	0.93		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.93		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.93		U
479-45-8	Tetryl	0.075	0.93		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.93		U
88-72-2	2-Nitrotoluene	0.075	0.93		U
99-99-0	4-Nitrotoluene	0.075	0.93		U
99-08-1	3-Nitrotoluene	0.11	0.93		U
618-87-1	3,5-Dinitroaniline	0.075	0.93		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-11

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 052V5201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 14:32

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 037V3701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 13:25

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 4.0(ml) Date Analyzed: 04/19/09 05:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.47	J
121-82-4	RDX	0.080	1.0	0.91	J
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.11	~~JP~~ B BL
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JEC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 055V5501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 13:25

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 16:03

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L MDL	RL	CONC	Q
78-11-5	PETN	0.53	6.0		U

JMC 6/8/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12P-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 042V4201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 07:22

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.52	J
121-82-4	RDX	0.080	1.0	0.90	J
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U MLBSL
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12P-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 058V5801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 17:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040209

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 043V4301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 07:49

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98	0.15	~~JP~~ J JC
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U JNL BSL
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98	0.094	~~JP~~ J JC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040209

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 059V5901

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 04/02/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 18:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09B-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-04

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 044V4401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 11:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 08:17

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.089	1.1		U
121-82-4	RDX	0.089	1.1		U
98-95-3	Nitrobenzene	0.098	1.1		U
99-65-0	1,3-Dinitrobenzene	0.089	1.1		U
99-35-4	1,3,5-Trinitrobenzene	0.089	1.1	0.11	~~JP~~ B BL
121-14-2	2,4-Dinitrotoluene	0.12	1.1		U
606-20-2	2,6-Dinitrotoluene	0.12	1.1		U
118-96-7	2,4,6-Trinitrotoluene	0.089	1.1		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.1		U
479-45-8	Tetryl	0.089	1.1		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.089	1.1		U
88-72-2	2-Nitrotoluene	0.089	1.1		U
99-99-0	4-Nitrotoluene	0.089	1.1		U
99-08-1	3-Nitrotoluene	0.13	1.1		U
618-87-1	3,5-Dinitroaniline	0.089	1.1		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09B-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-04

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 060V6001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 11:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 18:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.29	3.3		U

JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-040309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 045V4501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 08:45

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0	0.11	~~JP~~ J x
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.22	J L BSL
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 061V6101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 19:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JMC 6/8/09

Holding Times

Sampling Date: 3/26-4/3
Received Date: 3/28, 4/3
Extraction Dates: 3/31, 4/6, 4/9
Analysis Dates: 4/15-4/24

Sample receipt documentation was in order. Cooler temps were acceptable with one exception. One cooler was received at 8 degrees Celsius. Sample temp was less than 10 and according to the laboratory there was plenty of ice in the cooler, so results were not flagged.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8332. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

Contamination was reported in the associated field QC blanks.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
YS06-FB01-032609	1,3,5-trinitrobenzene	0.34JPM ug/L	1.7 ug/L	B	BL
YS06-EB01-032609	HMX	0.22J ug/L	1.1 ug/L	B	BL
YS06-FB01-040109	1,3,5-trinitrobenzene	0.15JPM ug/L	0.75 ug/L	B	BL
	RDX	0.13JP ug/L	0.65 ug/L	B	BL
YS06-EB02-040109	RDX	0.52JP ug/L	2.6 ug/L	B	BL
YS06-EB01-040309	1,3,5-trinitrobenzene	0.22JPM ug/L	1.1 ug/L	B	BL

Sample ID	Compound	Q Flag	Q Code
YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW12-0409, YS06-GW09B-0409	1,3,5-trinitrobenzene	B	BL
YS06-GW07-0309	HMX	B	BL
YS06-GW13A-0409	RDX	B	BL

SURROGATE RECOVERIES

All surrogate recovery criteria were met with the exception of three samples requiring qualifications. All results in samples YS06-GW06-0309 and YS06-GW13-0409 were qualified as biased low L/UL. All reported positive results in sample YS06-GW04-0309 were qualified as biased high K.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-GW12-0409 exhibited acceptable recoveries (within QAPP limits) in the MS and/or the MSD. RPDs were OK. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compounds except for 1,3,5-trinitrobenzene, which was low in both LCS & LCSD. This analyte was flagged as biased low in all samples. RPDs were OK

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW12-0409 **Duplicate ID:** YS06-GW12P-0409

Compound	Sample Conc.	Duplicate Conc.	RPD
HMX	0.47	0.52	10%
RDX	0.91	0.9	1%
1,3,5-TNB	0.11	0	200%

Comments: No qualifications were required. All results were <RLs.

Sample ID: YS06-GW05B-0309 **Duplicate ID:** YS06-GW05BP-0309

Compound	Sample Conc.	Duplicate Conc.	RPD
HMX	7.2	8.3	14%
RDX	20	23	14%
1,3-DNB	0.34	0.37	8%
1,3,5-TNB	0.98	0.77	24%
2,4-DNT	2.6	4	42%
2,4,6-TNT	1	0.99	1%
2-amino-4,6-DNT	5.4	5.4	0%

Comments: J 2,4-DNT in field duplicate pair

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J. Some samples were reported with an M qualifier to indicate matrix issues. These results were qualified as estimated J if not already flagged due to another QC issue. One sample, YS06-GW04-0309, required dilution to accurately quantitate a target compound. Raw data was verified.

Reviewer JCleveland **Date:** 61109

Initial Calibration Date: 2/20/09, HPLC2, ULTRA C-18
RRF and %RSD Calculations: RF10, FILE ID 002V0401
Compound Name: rdx
Lab Value: 147.6000

Area of Compound	1476
Conc. Of Compund	10
Calculated CF	147.6000

Compound Name: rdx
Lab Value: 17.2

CF 1	147.6000
CF 2	110.4800
CF 3	195.5200
CF 4	157.8460
CF 5	139.9800
CF 6	142.6960
CF7	141.9630
Calculated % RSD	17.21

Continuing Calibration File ID: 4/15/09, 0722, File ID 037v3701.d
RRF and %D Calculations:
Compound Name: nitrobenzene
Lab Value: 388.00000

Area of Compound	388461
Conc. Of Compund	1000
Calculated CF	388.4610

Compound Name: nitrobenzene
Lab Value: 10.7

Average RRF	351.00000
Calibration Check RRF	388.00000
Calculated % D	-10.5

SAMPLE CALCULATION

Sample ID: YS06-GW05B-0309
Standard ID: ICAL
Compound: 2,4-DNT
Concentration: 2.6 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	8756		
CF of Compound	25.15066		
Dilution Factor	1		
Weight of Sample	NA		
Extract Volume	8		
Volume of Sample	1050	NA	
% Moisture	NA		
injection volume	100	NA	
Conversion Factor	100		
Concentration	2.6500	#REF!	#REF!

ORGANIC CASE NARRATIVE – Explosives – REVISED 6/11/09
CH2M Hill, Inc. – YORKTOWN_NWS
SDG: SDG002/ CTO166
Workorder: 0903354, 0903355, 0904043 and 0904058

Sampled	Rec'd	Lab ID	Client ID
3/26/2009	3/28/2009	0903354-02	YS06-GW06-0309
3/26/2009	3/28/2009	0903354-03	YS06-GW06A-0309
3/26/2009	3/28/2009	0903354-04	YS06-EB02-032609
3/26/2009	3/28/2009	0903355-01	YS06-GW07-0309
3/26/2009	3/28/2009	0903355-02	YS06-GW05B-0309
3/26/2009	3/28/2009	0903355-03	YS06-GW05BP-0309
3/26/2009	3/28/2009	0903355-04	YS06-EB01-032609
3/31/2009	4/3/2009	0904043-01	YS06-GW08-0309
3/31/2009	4/3/2009	0904043-02	YS06-GW04-0309
3/31/2009	4/3/2009	0904043-03	YS06-EB01-033109
3/31/2009	4/3/2009	0904043-04	YS06-GW14-0309
3/31/2009	4/3/2009	0904043-05	YS06-GW15-0309
4/1/2009	4/3/2009	0904043-06	YS06-GW13-0409
4/1/2009	4/3/2009	0904043-07	YS06-GW13A-0409
4/1/2009	4/3/2009	0904043-08	YS06-GW12A-0409
4/1/2009	4/3/2009	0904043-09	YS06-FB01-040109
4/1/2009	4/3/2009	0904043-10	YS06-EB01-040109
4/1/2009	4/3/2009	0904043-11	YS06-EB02-040109
4/2/2009	4/7/2009	0904058-01	YS06-GW12-0409
4/2/2009	4/7/2009	0904058-02	YS06-GW12P-0409
4/2/2009	4/7/2009	0904058-03	YS06-EB01-040209
4/3/2009	4/7/2009	0904058-04	YS06-GW09B-0409
4/3/2009	4/7/2009	0904058-05	YS06-EB01-040309

Method: The samples were analyzed by USEPA SW-846 Method 8330A (solid phase extraction followed by packed column HPLC) for waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- NOTE: Samples received 4/3/09 were on one COC but received in three separate coolers. Of the three coolers, one was at 8°C. Due to a misunderstanding as to the correct sample receiving procedure and the thought that temperature was acceptable so long as the cooler contained ice, no note was made as to which samples/containers were received at 8°C.
- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline. Wavelengths 254nm and 210nm were used to obtain the requested quantitation limits.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: Most CCVs were within 20% difference or exceeded with a positive bias and were non-detect or were not required for confirmation. The 4/24/09 19:35 C-18 CCV exceeded 20% difference with a negative bias for the surrogate 1,2-dinitrobenzene. Associate surrogate recoveries were evaluated and determined not to have been biased into control.
- Blank Results: No target analytes were detected in the associated samples.
- Surrogate Recoveries: Recoveries of the surrogate were below the limit of 40% at 15%/14%/11% for sample YS06-GW06-0309. Pinnacle confirmation surrogate concentrations were masked by a matrix peak making results either non-detect or extremely high in samples analyzed 4/23/09 and 4/26/09. See form 2.
- LCS/LCSD Results: Recoveries of Tetryl, 1,3,5-trinitrobenzene and HMX were below

Resubmitted Rod 6/10
JAC 6.10.09

the limits of 20%, 65% and 80% at 0%/(62%), 55%/(96%) and 79%/(89%) in spike samples EW1BLK0331LCS/LCSD with 1,3,5-trinitrobenzene having an RPD exceeding the limit of 30 at 41. All other recoveries and relative percent differences were within limits. Results for tetryl are qualified with a "Q" in the associated samples. All other LCS/LCSD results were within limits.

- MS/MSD Results: Recoveries of tetryl and 3,5-dinitroaniline were below the limits of 80% and 60% at 78%/(85%) and 47%/52% while the relative percent difference for tetryl exceeded the limit of 30 at 34. All other recoveries and relative percent differences were within limits.
- Dilutions: All samples were analyzed without dilution. Sample YS06-GW04-0309 was also analyzed at a 2x dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

Resubmitted Rcd 6/10
JAC 61009

Jacqueline Cleveland

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "Jacqueline Cleveland" <cleve137@charter.net>
Cc: "Rebekha Shaw" <Rebekha.Shaw@CH2M.com>; "DataQual" <dataqual@charter.net>
Sent: Thursday, June 11, 2009 9:53 AM
Subject: RE: CH2M Yorktown, CTO-166 Empirical SDG # SDG002

Hi Jackie,

I finally heard back from the sub lab on the Explosive sample cooler with the temperature of 8.0 degrees C. Their response is below. If we had received the cooler here and some samples were out of temperature range---we would have segregated the sample containers that were affected.

I am waiting for the revised narrative. I will forward the revised narrative as soon as I receive it.

Response from Empirical:
At the time these samples were received, there was one COC and three coolers so we are unable to determine which samples were in the cooler that was received at 8C. I have also come to learn that at that point in time, there was a misunderstanding as to the correct procedure in sample receiving. If a cooler contained samples "on ice" and was delivered from a local entity, it was assumed that the samples just did not have time to get down to temperature. No corrective action form was filled out to document the samples affected.

Would you like us to revise the case narrative for the report (s) in question so this is documented?

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: Jacqueline Cleveland [mailto:cleve137@charter.net]
Sent: Tuesday, June 09, 2009 12:56 PM
To: Cathy Dover
Cc: Rebekha Shaw; DataQual
Subject: CH2M Yorktown, CTO-166 Empirical SDG # SDG002

Good Afternoon Cathy!

I need some information regarding the SDG sub-contracted to Empirical for Explosives/PETN analysis. There was a cooler with a temperature of 8 degrees. I need a list of samples that were in this cooler and I need to know if these containers were used for the extraction and analysis of these samples. Please let me know if you have any questions. Thanks!

Jackie

Jacqueline Cleveland

Vice-President

DQES, LLC

636-352-9391

cleve137@charter.net

Dat. del. – ship by FED EX plan to pick up start SDG2 more to come **S 12732**

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6
TAT: 20 calendar day TAT
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL
Contact: JANICE SCHILLING
Address: 621 MAINSTREAM DR, SUITE
NASHVILLE, TN 37228220
Phone: (615) 345 1115 X256
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X4089
Fax: (919) 379-4050
Sampling complete? Y or N (see Note 1)
Project-specific (PS) or Batch (B) QC? ____

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other field blk

BOX #2: A. HCl + Ice; B. HNO_3 + Ice; C. NaOH + Ice; D. H_2SO_4 + Ice; E. Unpreserved; F. Ice Only; G. Other ____; H. $NaHSO_4$ + Ice; I. ZnAc+NaOH + Ice; J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other ____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL. 8330 + PETN + 3,5 DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-FB01-032609	3/26	1510	9	2	F		S	1*		✓		*low volume 0903354-0
YS06-GW06-03009		1030	2					2		✓		-02
YS06-GW06A-03009		1415	2					2		✓		-03
YS06-EB02-032609		1515	~~9~~ 4					~~2~~ 1*		✓		*low volume -04

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Kelly Dove	Date: 3/27/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1400	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 3/28/09 11:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision D 2-10-99

Sat. delivery   Ship to / FED EX / call for pick up   continue SDG + (can close after these samples)

S 12744

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

Project Name: CTO-166 NWSY SITE 6	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: JANICE SCHILLING	Phone: (919) 379-4100 x 4089
Report style: level IV	Address: 621 MAINSTREAM DRIVE SUITE 270 NASHVILLE, TN 37228	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: (615) 245-1115 x2516	Sampling complete? Y or (N) (see Note 1) SDG just complete
	Project Locale (state)	Project-specific (PS) or Batch (B) QC?

BOX #1: 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other

BOX #2: A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3: F- Filtered U- Unfiltered

BOX #4: H- High M- Medium L- Low

BOX #5: C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other

Sample ID	Date / Year 2009	Time	Matrix (Box #1)	Preservative (Box #2)	Filtered / Unfiltered (Box #3)	Expected Conc. (Box #4)	Method (Box #5)	# of Bottles	Use for Lab QC (MS or DUP)	EXPL 8330 + PETN + 3,5-DNA				CCN	Remarks / Comments (see Notes 2 & 3)
YS06-GW07-0309	3/26	1005	2	F	U		S	2		✓				0903141-17	0903355-01
YS06-GW05B-0309	↓	1400	2	↓	↓		↓	↓		✓				-18	-02
YS06-GW05BP-0309	↓	1405	2	↓	↓		↓	↓		✓				-19	-03
YS06-EB01-032609	↓	1500	4	↓	↓		↓	↓		✓				-20	-04

[signature] 3/27/09

Client Special Instructions: Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) [signature]	Date: 3/27/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1402	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig) [signature]	Date: 3/28/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 11:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

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"SDG 2" S 12729

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6
TAT: 20 calendar days
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL LABS
Contact: JANICE SHILLING
Address: 621 MAINSTREAM DRIVE SUITE 270
NASHVILLE, TN 37228
Phone: (615) 345-1115 X256
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050
Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Explosives 8330 HPLC + 3,5 - DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-GW08-0309	3/31/2009	1210	2	F	U			2		✓	0903168-05	0904043-01
YS06-GW04-0309		1630	2					2		✓	-06	-02
YS06-EB01-033109		1730	4					2		✓	-07	-03
YS06-GW14-0309		1420	2					2		✓	-08	-04
YS06-GW15-0309		1630	2					2		✓	-09	-05
YS06-GW13-0409	4/1	1200	2					2		✓	-10	-06
YS06-GW13A-0409		1145	2					2		✓	-11	-07
YS06-GW12A-0409		1515	2					2		✓	-12	-08
YS06-FB01-040109		1540	9					2		✓	-13	-09
YS06-EB01-040109		1600	4					2		✓	-14	-10
YS06-EB02-040109		1610	4					2		✓	-15	-11

Clients Special Instructions: Temperature 5.0 °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) J-Rdp	Date: 4.2.09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1700	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 4/3/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 10:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

S 12743

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: NWSY CTO-166 SITE 6	Samples shipped to: EMPIRICAL LABS	CompuChem point-of-contact: (4) CATHY DOLER
TAT: 20 calendar days	Contact: JANICE SHILLING	Phone: (919) 379-4100 x 4089
Report style: level IV	Address: 621 MAINSTREAM DRIVE, SUITE 270 NASHVILLE, TN 37228	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: (615) 345-1115 X 256	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC?

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPLOSIVES 8330T PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
												0904058-
YS06-GW12-0409	4/2	1325	2	F	U		S	4 (5)	X	✓	0903168-16	USE FOR MS/MSD -01
YS06-GW12P-0409	4/2	1400	2	↓	↓		↓	2		✓	-17	-02
YS06-EB01-040209	4/2	1510	4	↓	↓		↓	2		✓	-18	-03

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Kelly Dunlap Date: 4/6/09	#2 Relinquished by:(sig) Date:	Relinquished by:(sig) Date:
Company Name: Compuchem Time: 1317	Company Name: Time:	Company Name: Time:
#1 Received by:(sig) Date:	#2 Received by:(sig) R Miller Date: 4/7/09	#2 Received by:(sig) Date:
Company Name: Time:	Company Name: Time 0900	Company Name: Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

10:00

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(Complete) S 11583

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: NWSY CTO-1166 Site 6	Samples shipped to: EMPIRICAL LABS	CompuChem point-of-contact: (4) CATHY DOVER
	Contact: JANICE SHILLING	
TAT: 20 Calendar Days	Address: 621 MAINSTREAM DRIVE, SUITE 270	Phone: (919) 379-4100 X 4089
Report style: level IV	NASHEVILLE, TN 37228	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: (615) 345-1115 X 256	Sampling complete? (Y) or N (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC? _____

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPLOSIVES 8330 + PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3) 0904058
YS06-GW09B-0409	4/3	11:30	2	F	U		S	2		✓	0903168-19	-04
YS06-EB01-040309	4/3	12:30	↓	↓	↓		↓	↓		✓	↓ -20	-05

Temperature _____ °C

Clients Special Instructions:

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date:	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 4/7/09	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time: 10:00	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903354 Number of Coolers: 1 of 2

Client: Compuchem Project: CTO-166

Date/Time Received: **03/28/09 11:00** Date cooler(s) opened: **03/28/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9705

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 5.1°C

Dates samples were logged-in: 03/28/09 WS 3/30/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903353 Number of Coolers: 1 of 2

Client: Chemtech Project: CTO-166

Date/Time Received: **03/28/09 11:00** Date cooler(s) opened: **03/28/09**

Opened By (print): **WILLIAM SCHWAB** (signature):

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other:

If applicable, enter airbill number here: 9690

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 2.4°C

Dates samples were logged-in: **03/28/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID:

CAR#:

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0904043 Number of Coolers: 3 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: **04/03/09 10:00** Date cooler(s) opened: **04/03/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9589

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 4/2/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 5.0°C

Dates samples were logged-in: 04/03/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: 04/03/09 10:00 Date cooler(s) opened: 04/03/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 2395

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 4/2/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 6.0°C

Dates samples were logged-in: 04/03/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 3

Client: Conpuchem Project: CTO-166

Date/Time Received: **04/03/09 10:00** Date cooler(s) opened: **04/03/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8803

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 4/2/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 8.0°C

corrected CN received-

Dates samples were logged-in: 04/03/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
17. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0904058 Number of Coolers: 1 of 1

Client: Compuchem Project: CTO-166

Date/Time Received: **04/07/09 10:00** Date cooler(s) opened: **04/07/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9830

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 4/6/09 Seal Initials: ICS

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 1.1°C

Dates samples were logged-in: **04/07/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 1

Client: Compuchem Project: CTO-166

Date/Time Received: **04/07/09 10:00** Date cooler(s) opened: **04/07/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 2645

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 4/6/09 Seal Initials: ES

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.2°C

Dates samples were logged-in: **04/07/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\037V3701.D
Report Date: 16-Apr-2009 13:19

JLS 4.16.09

Empirical Laboratories, LLC

J.H. 4.22.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 07:22
Lab File ID: 037V3701.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.72700	0.010	-7.6	15.0	
	2 RDX	148	147	0.010	-0.7	15.0	
$	30 1,2-Dinitrobenzene	202	197	0.010	-2.2	15.0	
	3 1,3,5-Trinitrobenzene	350	350	0.010	-0.1	15.0	
	4 1,3-Dinitrobenzene	485	466	0.010	-3.7	15.0	
	5 Tetryl	239	191	0.010	-20.1	15.0	<-Low
	6 Nitrobenzene	351	388	0.010	10.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.70500	0.010	-12.9	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	11.83800	0.010	-12.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.5	15.0	
	12 2,6-Dinitrotoluene	213	195	0.010	-8.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.07300	0.010	-12.2	15.0	
	14 2-Nitrotoluene	207	205	0.010	-1.2	15.0	
	15 4-Nitrotoluene	182	176	0.010	-3.6	15.0	
	16 3-Nitrotoluene	226	222	0.010	-1.7	15.0	

Ave.: 6.9% x

No field samples assoc

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\050V5001.D
Report Date: 16-Apr-2009 14:59

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

JLB 4-16-09

Instrument ID: hplc2.i Injection Date: 15-APR-2009 13:24
Lab File ID: 050V5001.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	X φ558	0.010	36.5	15.0	<-HIGH

No field samples assoc.

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\002V0201.D
Report Date: 25-Apr-2009 08:34

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 15:37
Lab File ID: 002V0201.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\8330.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	541	0.010	32.3	15.0	<-

J+ - No+

FB01-032609
GW06-0309
GW06A-0309
EB02-032609

4/30/09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\013V1301.D
Report Date: 25-Apr-2009 08:56

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 20:45
Lab File ID: 013V1301.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\8330LOW.m

4/17/2009

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.59700	0.010	-8.2	15.0	
	2 RDX	148	144	0.010	-2.6	15.0	
$	32 1,2-Dinitrobenzene	202	189	0.010	-6.2	15.0	
	3 1,3,5-Trinitrobenzene	350	335	0.010	-4.4	15.0	
	4 1,3-Dinitrobenzene	485	450	0.010	-7.1	15.0	
	5 Tetryl	239	199	0.010	-16.8	15.0	<-
	6 Nitrobenzene	351	362	0.010	3.3	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.58400	0.010	-13.5	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	11.84400	0.010	-12.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	311	0.010	-8.8	15.0	
	12 2,6-Dinitrotoluene	213	186	0.010	-12.5	15.0	
	13 2,4-Dinitrotoluene	25.15066	21.94000	0.010	-12.8	15.0	
	14 2-Nitrotoluene	207	196	0.010	-5.2	15.0	
	15 4-Nitrotoluene	182	165	0.010	-9.5	15.0	
	16 3-Nitrotoluene	226	212	0.010	-6.4	15.0	

✓ JMJ 8.67.

4/30/09

see prev page for assoc

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\014V1401.D
Report Date: 25-Apr-2009 08:56

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 21:13
Lab File ID: 014V1401.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	559	0.010	36.8	15.0	<-

Not-NQ see prev page for assoc'd quals

H.V. 4/30/09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\011V1102.D
Report Date: 20-Apr-2009 10:18

JLG 4-20-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 16-APR-2009 21:44
Lab File ID: 011V1102.D Init. Cal. Date(s): 09-JAN-2008 16-APR-2009
Analysis Type: Init. Cal. Times: 17:56 20:21
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.81200	0.010	-7.2	15.0	
	2 RDX	148	145	0.010	-1.7	15.0	
$	32 1,2-Dinitrobenzene	202	192	0.010	-4.8	15.0	
	3 1,3,5-Trinitrobenzene	350	341	0.010	-2.7	15.0	
	4 1,3-Dinitrobenzene	485	461	0.010	-5.0	15.0	
	5 Tetryl	239	192	0.010	-19.6	15.0	<-LOW JLJ
	6 Nitrobenzene	351	373	0.010	6.3	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.95900	0.010	-11.7	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.11800	0.010	-10.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	318	0.010	-6.6	15.0	
	12 2,6-Dinitrotoluene	213	191	0.010	-10.2	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.34200	0.010	-11.2	15.0	
	14 2-Nitrotoluene	207	200	0.010	-3.6	15.0	
	15 4-Nitrotoluene	182	172	0.010	-5.5	15.0	
	16 3-Nitrotoluene	226	218	0.010	-3.6	15.0	

7.390

GW07-0309
GW05B
GW05BP
EB01-032609

4/20/2009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\024V2401.D
Report Date: 20-Apr-2009 10:19

JLB 4-20-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 17-APR-2009 03:46
Lab File ID: 024V2401.D Init. Cal. Date(s): 09-JAN-2008 16-APR-2009
Analysis Type: Init. Cal. Times: 17:56 20:21
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
1	HMX	20.26359	ϕ 19.12200	0.010	-5.6	15.0	
2	RDX	148	145	0.010	-1.8	15.0	
$ 32	1,2-Dinitrobenzene	202	205	0.010	1.9	15.0	
3	1,3,5-Trinitrobenzene	350	372	0.010	6.1	15.0	
4	1,3-Dinitrobenzene	485	473	0.010	-2.3	15.0	
5	Tetryl	239	169	0.010	-29.5	15.0	<-low
6	Nitrobenzene	351	362	0.010	3.2	15.0	
9	2,4,6-Trinitrotoluene	21.47950	19.17400	0.010	-10.7	15.0	
10	4-Amino-2,6-dinitrotoluene	13.53216	12.36200	0.010	-8.6	15.0	
11	2-Amino-4,6-dinitrotoluene	341	321	0.010	-5.7	15.0	
12	2,6-Dinitrotoluene	213	193	0.010	-9.3	15.0	
13	2,4-Dinitrotoluene	25.15066	22.66300	0.010	-9.9	15.0	
14	2-Nitrotoluene	207	201	0.010	-2.8	15.0	
15	4-Nitrotoluene	182	172	0.010	-5.5	15.0	
16	3-Nitrotoluene	226	220	0.010	-2.8	15.0	

2.5%

See prev page for assoc. 8 grabs

BR 042009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\062V6201.D
Report Date: 26-Apr-2009 16:27

JLG 4.26.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i
Lab File ID: 062V6201.D
Analysis Type:
Lab Sample ID: mix#4 1/5ppm
Method: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\8332C.m

Injection Date: 24-APR-2009 19:35
Init. Cal. Date(s): 29-NOV-2004 12-MAR-2009
Init. Cal. Times: 16:41 05:41
Quant Type: ESTD

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
$ 29 1,2-Dinitrobenzene	384	Φ 208	0.010	-45.8	15.0	<- Low Surrogate - NI
8 Nitroglycerin	9.72121	Δ 12.02140	0.010	23.7	15.0	<- HIGH (not used)
17 PETN	380	213	0.010	18.0	15.0	<- <20%

High J+

~~No field samples associated.~~

JLC 4/10/09

GW13-0409 LWL
GW13A-0409 ✓ 4/22/09
GW12A-0409

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\116V1601.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 00:52
Lab File ID: 116V1601.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.96000	0.010	4.6	15.0	
	2 RDX	275	290	0.010	5.4	15.0	
	4 3,5-Dinitroaniline	1000	1024	0.010	-2.4	15.0	
	5 Nitrobenzene	258	251	0.010	-2.6	15.0	
	6 4-Amino-2,6-dinitrotolune	359	285	0.010	-20.7	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.11000	0.010	-0.5	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.20500	0.010	-13.6	15.0	
	10 2-Nitrotoluene	367	349	0.010	-4.9	15.0	
	12 3-NT/4-NT	242	234	0.010	-3.4	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	974	0.010	2.6	15.0	
	14 2,6-Dinitrotoluene	1000	969	0.010	3.1	15.0	
	15 1,3,5-Trinitrobenzene	1000	917	0.010	8.3	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.59800	0.010	-5.6	15.0	
	17 Tetryl	1000	940	0.010	6.0	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.20600	0.010	-15.2	15.0	<- NQ

04/24/09

YS06-FB01-032809
GW06-0309
GW06A-0309
FB02-032609

all quanted from primary column

4/27/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\129V2901.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i
Lab File ID: 129V2901.D
Analysis Type:
Lab Sample ID: Expl+ 1.0ppm
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

Injection Date: 24-APR-2009 08:55
Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Init. Cal. Times: 17:34 00:29
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.24700	0.010	2.3	15.0	
	2 RDX	275	272	0.010	-0.8	15.0	
	4 3,5-Dinitroaniline	1000	1019	0.010	-1.9	15.0	
	5 Nitrobenzene	258	249	0.010	-3.5	15.0	
	6 4-Amino-2,6-dinitrotolune	359	282	0.010	-21.4	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.01100	0.010	-1.2	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.27900	0.010	-12.7	15.0	
	10 2-Nitrotoluene	367	362	0.010	-1.4	15.0	
	12 3-NT/4-NT	242	239	0.010	-1.2	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	989	0.010	1.1	15.0	
	14 2,6-Dinitrotoluene	1000	1010	0.010	-1.0	15.0	
	15 1,3,5-Trinitrobenzene	1000	969	0.010	3.1	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.95600	0.010	-0.5	15.0	
	17 Tetryl	1000	998	0.010	0.2	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.23500	0.010	-14.7	15.0	

4/14/09

1.5 J.

See prev. page for assoc +

GW070309
GW05B
GW05BP
EB01-032609

WL 4/22/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\142V4201.D
Report Date: 25-Apr-2009 13:37

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 18:19
Lab File ID: 142V4201.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

cl 4/25/09

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	33.14400	0.010	5.2	15.0	
	2 RDX	275	271	0.010	-1.2	15.0	
	4 3,5-Dinitroaniline	1000	1052	0.010	-5.2	15.0	
	5 Nitrobenzene	258	252	0.010	-2.3	15.0	
	6 4-Amino-2,6-dinitrotolune	359	303	0.010	-15.6	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.68500	0.010	3.3	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.60100	0.010	-8.8	15.0	
	10 2-Nitrotoluene	367	360	0.010	-1.8	15.0	
	12 3-NT/4-NT	242	248	0.010	2.3	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	1005	0.010	-0.5	15.0	
	14 2,6-Dinitrotoluene	1000	1088	0.010	-8.8	15.0	
	15 1,3,5-Trinitrobenzene	1000	1015	0.010	-1.5	15.0	
	16 2,4-Dinitrotoluene	6.99064	7.75700	0.010	11.0	15.0	
	17 Tetryl	1000	1080	0.010	-8.0	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.56800	0.010	-9.3	15.0	

Y506-GW07-0309
GW05B
GW05BP
EB01-032609

LC 4/27/09

Data File: \\elabnsh04\dd\chem\hplc1.i\042609.b\126V2601.D
Report Date: 28-Apr-2009 16:17

J.H. 4.28.09
JL 4.29.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 27-APR-2009 03:41
Lab File ID: 126V2601.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\elabnsh04\dd\chem\hplc1.i\042609.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	✓ 33.21200	0.010	5.4	15.0	
	2 RDX	275	✓ 297	0.010	8.2	15.0	
	4 3,5-Dinitroaniline	1000	1050	0.010	-5.0	15.0	
	5 Nitrobenzene	258	264	0.010	2.5	15.0	
	6 4-Amino-2,6-dinitrotolune	359	323	0.010	-10.1	15.0	
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.58700	0.010	2.6	15.0	
	9 1,3-Dinitrobenzene	8.33521	8.61300	0.010	3.3	15.0	
	10 2-Nitrotoluene	367	398	0.010	8.5	15.0	
	12 3-NT/4-NT	242	256	0.010	5.7	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	1089	0.010	-8.9	15.0	
	14 2,6-Dinitrotoluene	1000	1163	0.010	-16.3	15.0	<- HIGH NQ
	15 1,3,5-Trinitrobenzene	1000	861	0.010	13.9	15.0	
	16 2,4-Dinitrotoluene	6.99064	5.95300	0.010	-14.8	15.0	
	17 Tetryl	1000	707	0.010	-29.3	15.0	<- LOW NQ
	18 2,4,6-Trinitrotoluene	6.13691	5.35900	0.010	-12.7	15.0	

quanted from primary

YS06-EB02-040109
GW12-0409
GW12P-0409
EB01-040209*
GW09B-0409
EB01-040309

AVE. < 15.0%D

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	EW1BLK0331	106	92					0
02	EW1BLK0331LC	102						0
03	EW1BLK0331LC	104						0
04	EW1BLK0331LC							0
05	EW1BLK0331LC							0
06	YS06-FB01-03	92	64					0
07	YS06-GW06-03	15*	11*	LHL				1
08	YS06-GW06A-0	114	110					0
09	YS06-EB02-03	87	62					0
10	YS06-GW07-03	125	98					0
11	YS06-GW05B-0	111	324*	NQ				1
12	YS06-GW05BP-	121	346*	NQ				1
13	YS06-EB01-03	120	93					0
14	EW1BLK0406	113	112					0
15	EW1BLK0406LC	120						0
16	EW1BLK0406LC							0
17	EW1BLK0406LC							0
18	YS06-GW08-03	100						0
19	YS06-GW04-03	316*	47650*	K+				2
20	YS06-GW15-03	96	0*	matrix	interference			1
21	YS06-GW13-04	46	0*	LHL				1
22	YS06-GW13A-0	81	0*	matrix	interference			1
23	YS06-GW12A-0	118	85					0
24	YS06-GW04-03	0D						0
25	YS06-EB01-03	103	69					0
26	YS06-GW14-03	109	0*	matrix	interference			1
27								
28								
29								
30								

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

QAPP Limits 60-140

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Column(1): ULTRA C-18 ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC	#	S1 2 %REC	#	S2 1 %REC	#	S2 2 %REC	#	S3 1 %REC	#	S3 , 2 %REC	#	TOT OUT
01	EW1BLK0331	106												0
02	EW1BLK0331LC	108												0
03	EW1BLK0331LC	96												0
04	YS06-FB01-03	66												0
05	YS06-GW06-03	14*		LHL										1
06	YS06-GW06A-0	99												0
07	YS06-EB02-03	73												0
08	YS06-GW07-03	88												0
09	YS06-GW05B-0	89												0
10	YS06-GW05BP-	94												0
11	YS06-EB01-03	100												0
12	EW1BLK0406	101												0
13	EW1BLK0406LC	98												0
14	EW1BLK0406LC	100												0
15	YS06-GW08-03	97												0
16	YS06-GW04-03	104												1
17	YS06-EB01-03	102												0
18	YS06-GW14-03	98												0
19	YS06-GW15-03	94												0
20	YS06-GW13-04	60												0
21	YS06-GW13A-0	81												1
22	YS06-GW12A-0	124												0
23														
24														
25														
26														
27														
28														
29														
30														

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: YS06-GW12-0409 Lab Sample ID: 0904058-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.	
HMX	10.00	0.4662	8.289	78*	80-115	MSOOK
RDX	10.00	0.9092	9.605	87	50-160	
Nitrobenzene	10.00	0.0000	6.857	68	50-140	
1,3-Dinitrobenzene	10.00	0.0000	7.783	78	45-160	
1,3,5-Trinitrobenzene	10.00	0.1069	7.731	76	65-140	
2,4-Dinitrotoluene	10.00	0.0000	7.668	77	60-135	
2,6-Dinitrotoluene	10.00	0.0000	7.579	76	60-135	
2,4,6-Trinitrotoluene	10.00	0.0000	6.779	68	50-145	
2-Amino-4,6-dinitrotolu	10.00	0.0000	6.536	65	50-155	
Tetryl	10.00	0.0000	4.704	47	20-175	MSOOI
4-Amino-2,6-dinitrotolu	10.00	0.0000	7.055	70	55-155	
2-Nitrotoluene	10.00	0.0000	5.984	60	45-135	
4-Nitrotoluene	10.00	0.0000	6.089	61	50-130	
3-Nitrotoluene	10.00	0.0000	6.094	61	50-130	

50-140 } QAPP limits
50% }
No Quals Required

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: YS06-GW12-0409 Lab Sample ID: 0904058-01

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	8.942	85	8	30	80-115
RDX	10.00	10.01	91	4	30	50-160
Nitrobenzene	10.00	6.834	68	0	30	50-140
1,3-Dinitrobenzene	10.00	8.118	81	4	30	45-160
1,3,5-Trinitrobenzene	10.00	8.352	82	8	30	65-140
2,4-Dinitrotoluene	10.00	7.983	80	4	30	60-135
2,6-Dinitrotoluene	10.00	7.874	79	4	30	60-135
2,4,6-Trinitrotoluene	10.00	7.608	76	12	30	50-145
2-Amino-4,6-dinitrotolu	10.00	7.206	72	10	30	50-155
Tetryl	10.00	6.608	66	34*	30	20-175
4-Amino-2,6-dinitrotolu	10.00	7.728	77	9	30	55-155
2-Nitrotoluene	10.00	5.694	57	5	30	45-135
4-Nitrotoluene	10.00	5.883	59	3	30	50-130
3-Nitrotoluene	10.00	5.815	58	5	30	50-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 14 outside limits
Spike Recovery: 1 out of 28 outside limits

COMMENTS: _____

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: YS06-GW12-0409 Lab Sample ID: 0904058-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
3,5-Dinitroaniline	10.00	0.0000	4.740	47*	60-120

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
3,5-Dinitroaniline	10.00	5.219	52* OK	10	40	60-120

50-140% QAPP limits
50%
No Quals Required

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 2 out of 2 outside limits

COMMENTS: _____

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.	
HMX	10.00	0.0000	7.946	79*	80-115	NQ LCSD t
RDX	10.00	0.0000	8.884	89	50-160	
Nitrobenzene	10.00	0.0000	7.924	79	50-140	
1,3-Dinitrobenzene	10.00	0.0000	8.711	87	45-160	
1,3,5-Trinitrobenzene	10.00	0.0000	5.478	55*	65-140	L/uL
2,4-Dinitrotoluene	10.00	0.0000	7.829	78	60-135	
2,6-Dinitrotoluene	10.00	0.0000	8.199	82	60-135	
2,4,6-Trinitrotoluene	10.00	0.0000	7.041	70	50-145	
2-Amino-4,6-dinitrotolu	10.00	0.0000	8.228	82	50-155	
Tetryl	10.00	0.0000	0.0000	0*	20-175	LCSD OK
4-Amino-2,6-dinitrotolu	10.00	0.0000	8.745	87	55-155	
2-Nitrotoluene	10.00	0.0000	8.322	83	45-135	
4-Nitrotoluene	10.00	0.0000	8.263	83	50-130	
3-Nitrotoluene	10.00	0.0000	8.464	85	50-130	

60-120 - QAPP Limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	8.918	89	10	30	80-115
RDX	10.00	10.11	101	12	30	50-160
Nitrobenzene	10.00	10.60	106	29	30	50-140
1,3-Dinitrobenzene	10.00	9.708	97	11	30	45-160
1,3,5-Trinitrobenzene	10.00	9.580	96	41*	30	65-140
2,4-Dinitrotoluene	10.00	8.907	89	13	30	60-135
2,6-Dinitrotoluene	10.00	9.249	92	12	30	60-135
2,4,6-Trinitrotoluene	10.00	8.435	84	18	30	50-145
2-Amino-4,6-dinitrotolu	10.00	9.319	93	12	30	50-155
Tetryl	10.00	6.165	62	N/A	30	20-175
4-Amino-2,6-dinitrotolu	10.00	8.700	87	0	30	55-155
2-Nitrotoluene	10.00	8.969	90	7	30	45-135
4-Nitrotoluene	10.00	9.058	90	9	30	50-130
3-Nitrotoluene	10.00	9.230	92	7	30	50-130

60-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 14 outside limits
Spike Recovery: 3 out of 28 outside limits

COMMENTS: _____

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\015V1501.D
Report Date: 20-Apr-2009 10:19

Primary JLG 4.20.09

Empirical Laboratories, LLC

Data file : \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\015V1501.D
Lab Smp Id: 0903355-03 Client Smp ID: YS06-GW05BP-0309
Inj Date : 16-APR-2009 23:35
Operator : GM Inst ID: hplc2.i
Smp Info : 0903355-03
Misc Info : com.e03355;1060;8;9C31005;ug/L;;exph2o.sub;31-MAR-2009
Comment :
Method : \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\8330LOW.m
Meth Date : 20-Apr-2009 10:18 jjames Quant Type: ESTD
Cal Date : 16-APR-2009 20:21 Cal File: 009V0901.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ch2wp.sub
Target Version: 4.04
Processing Host: TARGET07_VM

Concentration Formula: Amt * DF * Uf*Vt*100/(Amt*Vi*(Solids/100))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit Correction Factor
Vt	8.000	Extract Volume (ml)
Amt	1060.000	Sample Volume (ml)
Vi	100.000	Injection Volume (ul)
Solids	100.000	Percent Solids

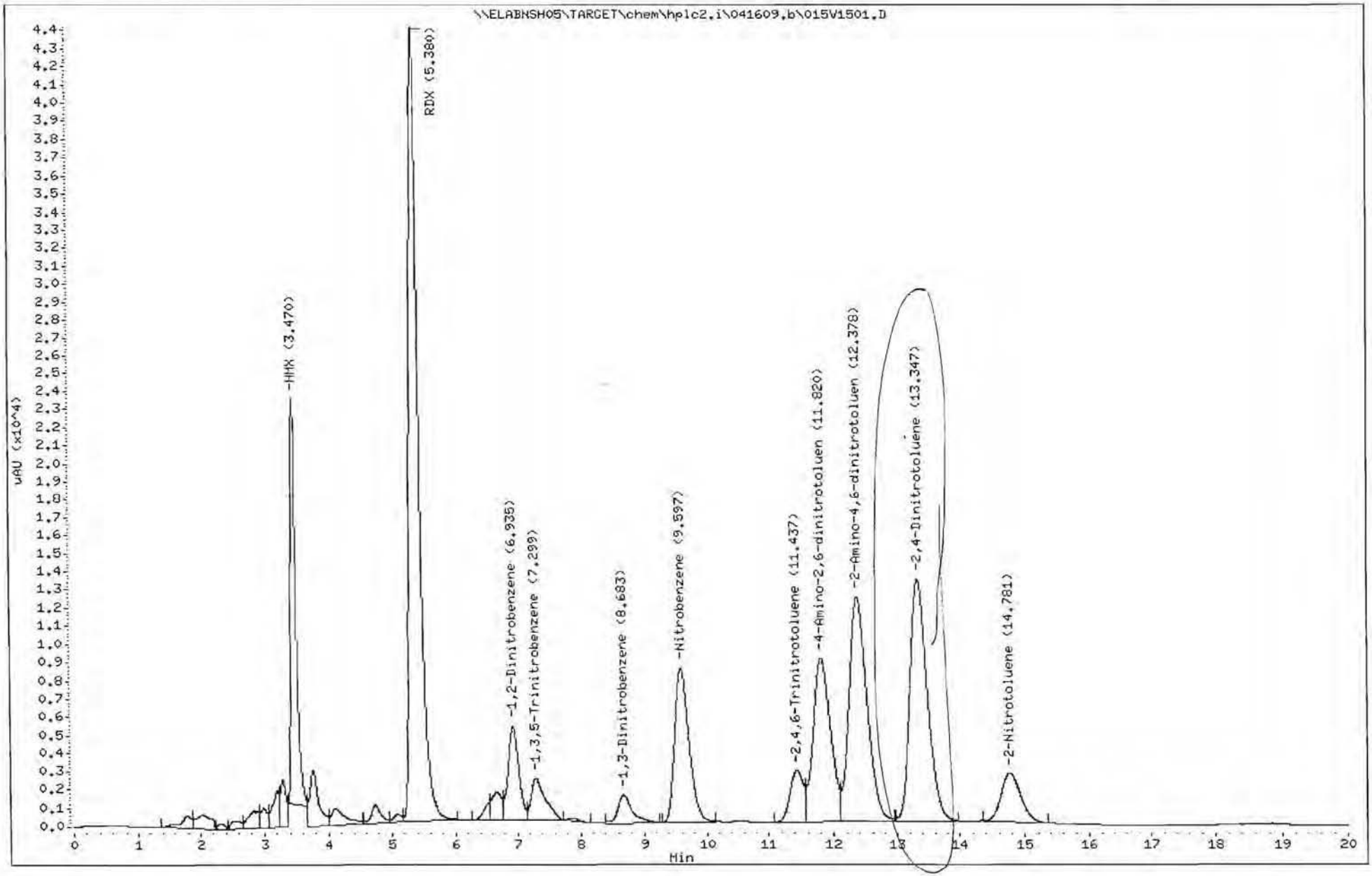
BM 04/28/09

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/ml)	CONCENTRATIONS FINAL (ug/L)
1	HMX	3.470	3.453	0.017	22370	1103.95	8.332(M)
2	RDX	5.379	5.316	0.063	450393	3042.95	22.96
$ 32	1,2-Dinitrobenzene	6.935	6.838	0.097	60807	301.743	2.277
3	1,3,5-Trinitrobenzene	7.299	7.204	0.095	35765	102.074	0.7704(a)
4	1,3-Dinitrobenzene	8.682	8.558	0.124	23877	49.2767	0.3719(a)
6	Nitrobenzene	9.597	9.580	0.017	134371	382.954	2.890
9	2,4,6-Trinitrotoluene	11.436	11.245	0.191	2808	130.729	0.9866
10	4-Amino-2,6-dinitrotoluene	11.820	11.555	0.265	9084	671.290	5.066
11	2-Amino-4,6-dinitrotoluene	12.378	12.128	0.250	243774	715.539	5.400
13	2,4-Dinitrotoluene	13.346	13.101	0.245	13424	533.744	4.028
14	2-Nitrotoluene	14.780	15.256	-0.476	56666	273.533	2.064

Flag as NJ, OT

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\015V1501.D
Date : 16-APR-2009 23:35
Client ID: YS06-GW05BP-0309
Sample Info: 0903355-03
Volume Injected (uL): 100.0
Column phase: Ultra C-18

Instrument: hplc2.i
Operator: GM
Column diameter: 4.60



Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\133V3301.D
Report Date: 28-Apr-2009 14:02

Confirmation JLS 4.28.09

Empirical Laboratories, LLC

Data file : \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\133V3301.D
Lab Smp Id: 0903355-03 Client Smp ID: YS06-GW05BP-0309
Inj Date : 24-APR-2009 11:23
Operator : GM Inst ID: hplc1.i
Smp Info : 0903355-03
Misc Info : com.e03355;1060;8;9C31005;ug/L;;explh2o.sub;31-Mar-2009
Comment :
Method : \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PIILOW.m
Meth Date : 28-Apr-2009 10:32 jjames Quant Type: ESTD
Cal Date : 16-APR-2009 15:58 Cal File: 103V0301.D
Als bottle: 133
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ch2wp.sub
Target Version: 4.04
Processing Host: TARGET07_VM

Concentration Formula: Amt * DF * Uf*Vt*100/(Amt*Vi*(Solids/100))

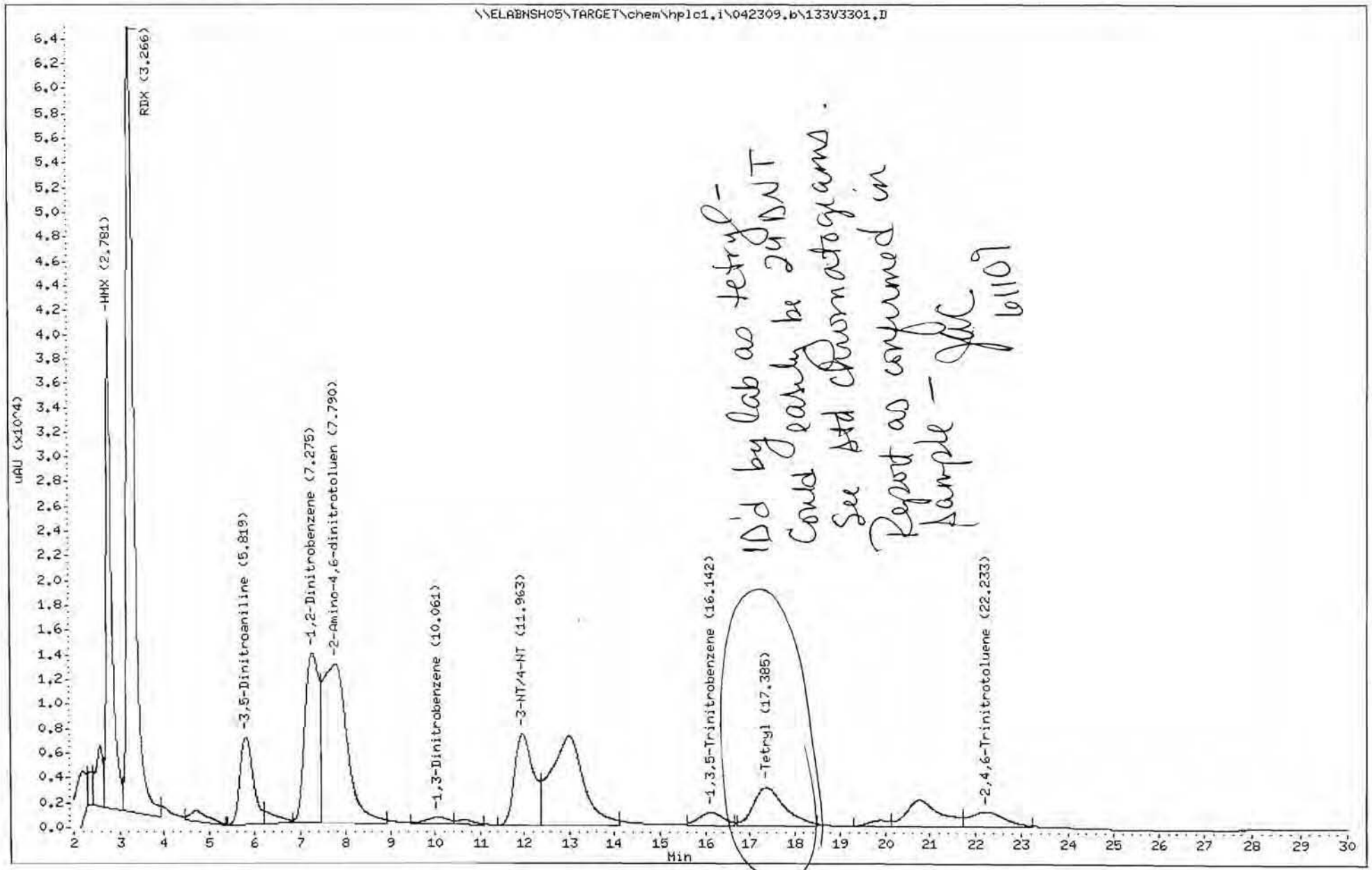
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit Correction Factor
Vt	8.000	Extract Volume (ml)
Amt	1060.000	Sample Volume (ml)
Vi	100.000	Injection Volume (ul)
Solids	100.000	%Solids

BM 4/28/09

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/ml)	CONCENTRATIONS FINAL (ug/L)
1	HMX	2.780	2.800	-0.020	39665	1258.59	9.499
2	RDX	3.266	3.295	-0.029	768432	2796.95	21.11
4	3,5-Dinitroaniline	5.819	5.921	-0.102	143202	330.724	2.496(M)
$ 7	1,2-Dinitrobenzene	7.275	7.343	-0.068	297959	865.632	6.533(R)
8	2-Amino-4,6-dinitrotoluene	7.789	7.721	0.068	12910	850.139	6.416
9	1,3-Dinitrobenzene	10.060	10.366	-0.306	578	69.3443	0.5234(aM)
12	3-NT/4-NT	11.963	12.414	-0.451	219282	905.213	6.832
15	1,3,5-Trinitrobenzene	16.142	16.506	-0.364	44292	104.334	0.7874(a)
17	Tetryl	17.384	18.331	-0.947	153408	363.476	2.743
18	2,4,6-Trinitrotoluene	22.233	22.912	-0.679	1200	195.538	1.476(M)

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\133V3301.D
Date : 24-APR-2009 11:23
Client ID: YS06-GW05BP-0309
Sample Info: 0903355-03
Volume Injected (uL): 100.0
Column phase: Pinnacle2 Biphenyl

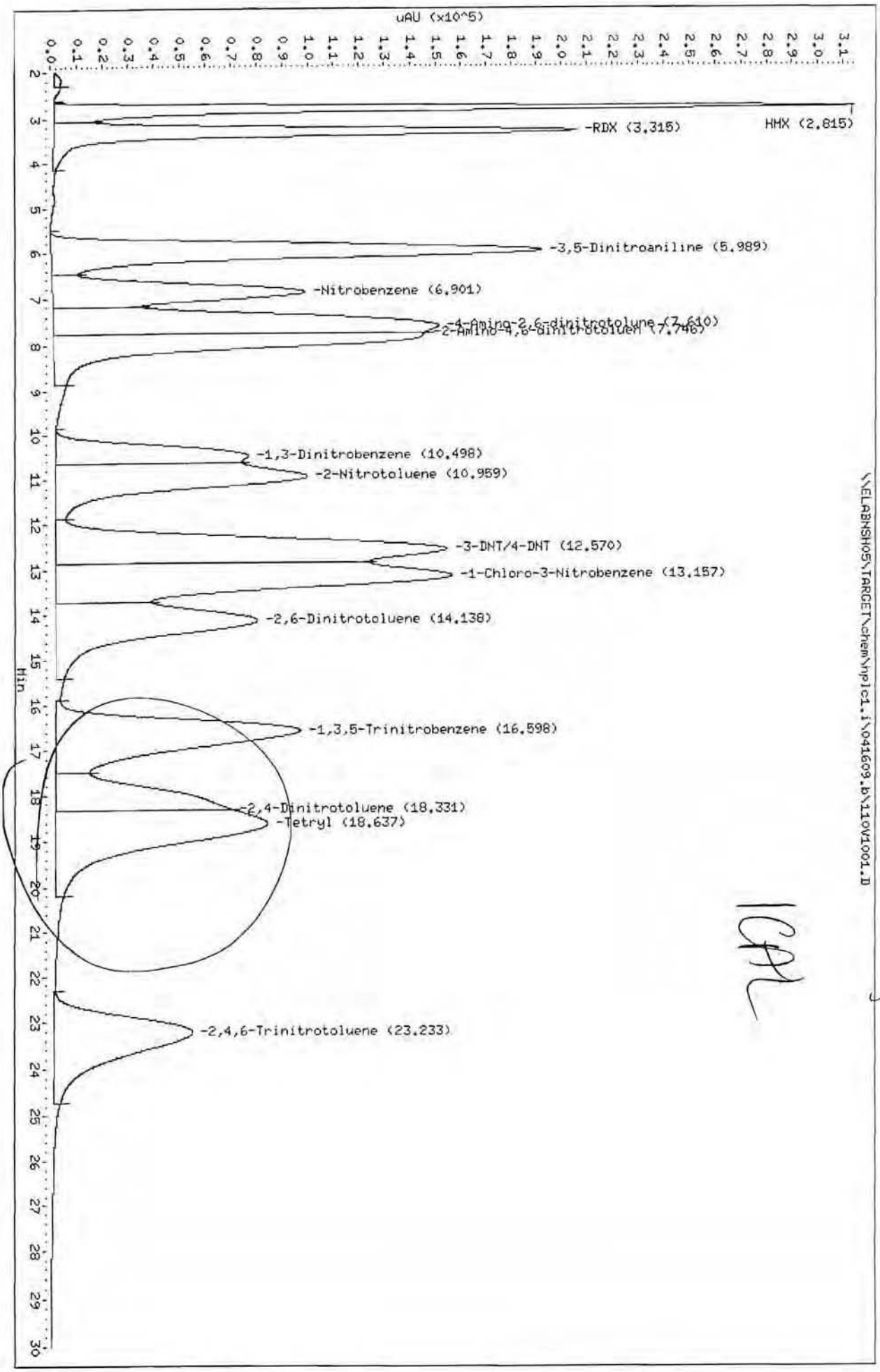
Instrument: hplc1.i
Operator: GM
Column diameter: 4.60



ID'd by lab as tetryl - could easily be 2,4 DNT See ATA chromatograms. Report as contained in sample - JLC 6/11/09

115

100



B.C 4.21.09

ICAL

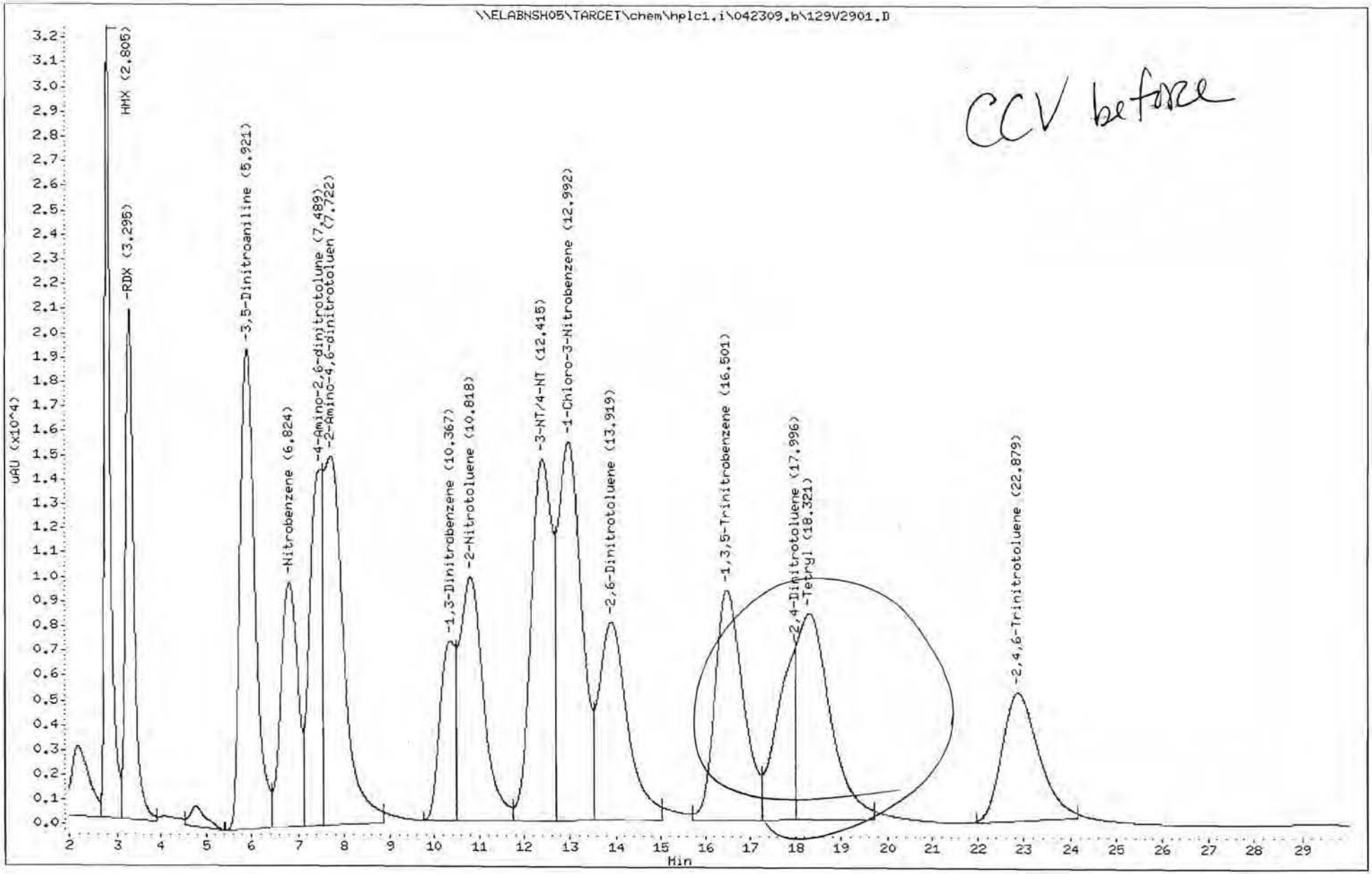
Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\129V2901.D
Date : 24-APR-2009 08:55
Client ID:
Sample Info: Expl+ 1.0ppm

Instrument: hplc1.i

Operator: GH
Column diameter: 4.60

Column phase: Pinnacle2 Biphenyl

616
102



Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\142V4201.D
Date : 24-APR-2009 18:19
Client ID:
Sample Info: Expl+ 1.0ppm

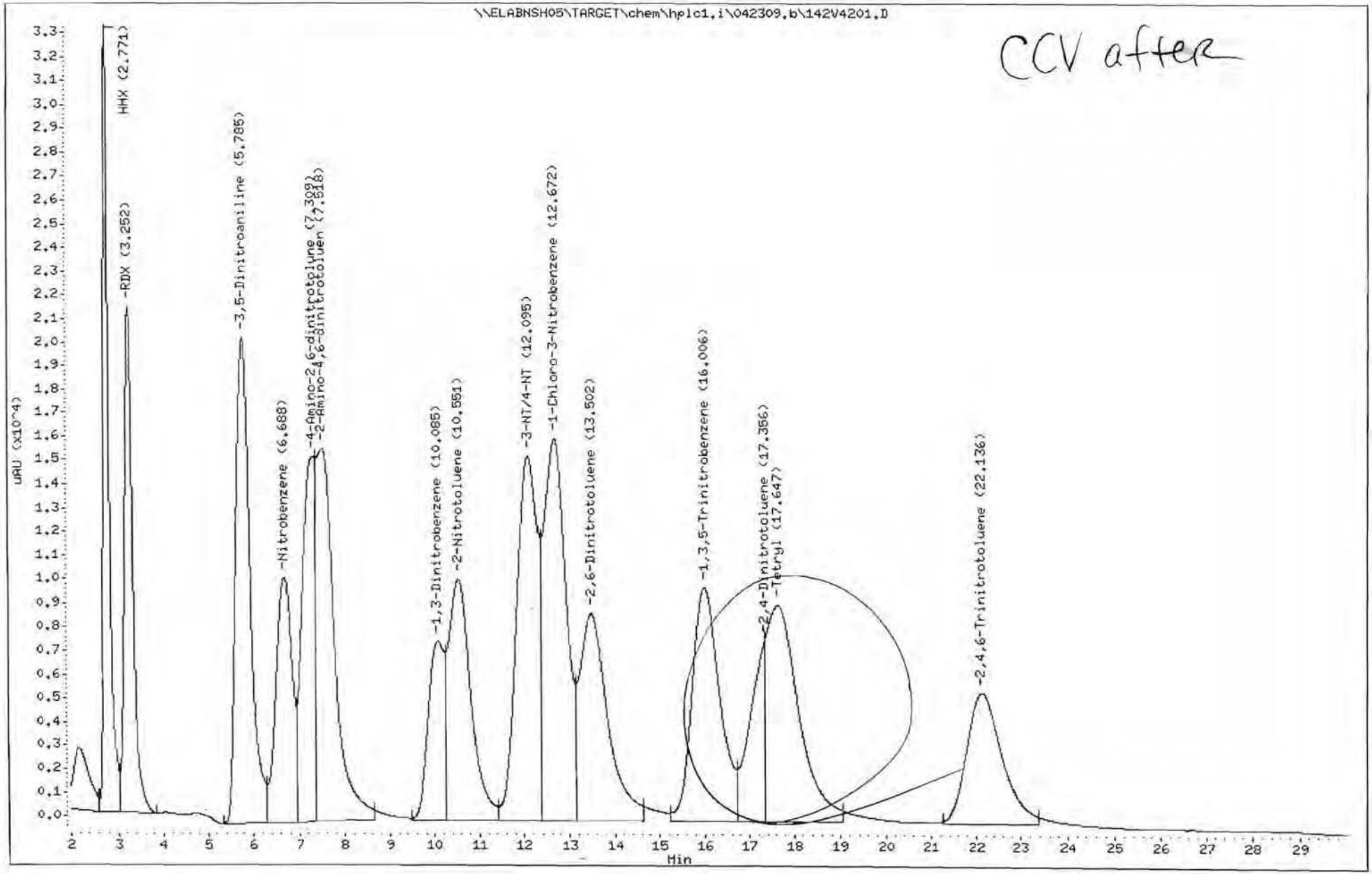
Column phase: Pinnacle2 Biphenyl

Instrument: hplc1.i

Operator: CH
Column diameter: 4.60

Obr 4/15/09

621 103



FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903354-01 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.55	6.86	7.70	1.086	
	2	16.45	15.86	17.16	0.3389	104.9 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW06A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903354-03 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
1,3,5-Trinitrobenzene	1	7.55	6.86	7.70	0.08811		
	2	16.61	15.86	17.16	0.3310	115.9	J
2,4,6-Trinitrotoluene	1	11.40	10.78	12.04	0.3004		
	2	23.07	21.81	24.01	0.9597	104.6	J
2-Amino-4,6-dinitrotoluen	1	12.34	11.58	13.10	0.4438		
	2	8.07	7.31	8.13	4.202	161.8	J
	1						
	2						
	1						
	2						
	1						
	2						
	1						
	2						
	1						
	2						

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903354-04 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.19	3.75	0.7335	
	2	2.83	2.49	3.11	0.2178	108.4 J
RDX	1	5.51	5.00	5.72	0.3817	
	2	3.21	3.09	3.51	0.2140	56.3 J
1,3,5-Trinitrobenzene	1	7.56	6.86	7.70	1.014	
	2	16.55	15.86	17.16	0.3138	105.5 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-01 Date(s) Analyzed: 04/16/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.45	3.17	3.73	0.1887	
	2	2.79	2.49	3.11	0.1023	59.4 J
RDX	1	5.38	4.96	5.68	0.3189	
	2	3.28	3.09	3.51	0.2105	41.0 J
1,3,5-Trinitrobenzene	1	7.44	6.78	7.62	1.469	
	2	16.29	15.86	17.16	0.3608	121.1 J
2,4-Dinitrotoluene	1	13.34	12.46	13.74	6.408	
	2	17.58	17.43	18.59	5.198	20.8
2,4,6-Trinitrotoluene	1	11.43	10.62	11.88	0.1147	
	2	22.33	21.81	24.01	0.6557	140.4 J
2-Amino-4,6-dinitrotoluen	1	12.37	11.37	12.89	0.2425	
	2	7.94	7.31	8.13	4.474	179.4 J
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-02 Date(s) Analyzed: 04/16/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.17	3.73	7.159	
	2	2.78	2.49	3.11	8.122	12.6
RDX	1	5.38	4.96	5.68	19.87	
	2	3.27	3.09	3.51	17.57	12.3
1,3-Dinitrobenzene	1	8.66	8.06	9.06	0.3350	
	2	10.12	10.03	10.71	0.2440	31.4
1,3,5-Trinitrobenzene	1	7.29	6.78	7.62	0.9811	
	2	16.19	15.86	17.16	0.8635	12.8
2,4-Dinitrotoluene	1	13.34	12.46	13.74	2.652	
	2	17.46	17.43	18.59	2.136	21.6
2,4,6-Trinitrotoluene	1	11.43	10.62	11.88	1.051	
	2	22.31	21.81	24.01	1.609	42.0 J
2-Amino-4,6-dinitrotoluen	1	12.37	11.37	12.89	5.358	
	2	7.82	7.31	8.13	6.836	24.2
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW0
5BP-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-03 Date(s) Analyzed: 04/16/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.17	3.73	8.332	
	2	2.78	2.49	3.11	9.499	13.1
RDX	1	5.38	4.96	5.68	22.96	
	2	3.27	3.09	3.51	21.11	8.4
1,3-Dinitrobenzene	1	8.68	8.06	9.06	0.3719	
	2	10.06	10.03	10.71	0.5234	33.8
1,3,5-Trinitrobenzene	1	7.30	6.78	7.62	0.7704	
	2	16.14	15.86	17.16	0.7874	2.2
2,4,6-Trinitrotoluene	1	11.44	10.62	11.88	0.9866	
	2	22.23	21.81	24.01	1.476	39.7
2-Amino-4,6-dinitrotoluen	1	12.38	11.37	12.89	5.400	
	2	7.79	7.31	8.13	6.416	17.2
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-04 Date(s) Analyzed: 04/17/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.17	3.73	0.2219	
	2	2.80	2.49	3.11	0.1807	20.5
1,3,5-Trinitrobenzene	1	7.57	6.78	7.62	0.6446	
	2	16.03	15.86	17.16	0.2304	94.7 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW04-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-02 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.28	6.78	7.62	1.600	
	2	15.92	15.38	16.68	3.752	80.4 J
2,4-Dinitrotoluene	1	13.17	12.46	13.74	36.11	
	2	17.07	16.79	17.95	27.43	27.3
2-Amino-4,6-dinitrotoluen	1	12.04	11.37	12.89	8266	
	2	7.27	7.10	7.92	2949	94.8 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-033109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-03 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4,6-Trinitrotoluene	1	11.18	10.48	11.74	0.1040	
	2	22.13	21.03	23.23	0.8055	154.3 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-07 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.33	4.96	5.68	0.2786	
	2	3.20	3.05	3.47	0.2230	22.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-07 Date(s) Analyzed: 04/24/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
PETN	1	20.38	19.50	20.90	1.981	11%
	2	9.73	9.60	11.28	~~16.08~~ 2.2	156.1 J
	1					JAC 4/10/09
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW12A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-08 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4,6-Trinitrotoluene	1	11.27	10.62	11.88	0.2086	
	2	21.89	21.03	23.23	0.1273	48.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-09 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.23	4.96	5.68	0.1315	
	2	3.25	3.05	3.47	0.3962	100.3 J
1,3,5-Trinitrobenzene	1	7.51	6.78	7.62	0.6773	
	2	15.41	15.38	16.68	0.1501	127.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-11 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	4.97	4.96	5.68	0.5256	
	2	3.24	3.05	3.47	0.9438	56.9 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW12-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-01 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.15	3.71	0.4662	
	2	2.79	2.47	3.09	0.4993	6.8
RDX	1	5.31	4.91	5.63	0.9092	
	2	3.27	3.05	3.47	0.6570	32.2
1,3,5-Trinitrobenzene	1	7.43	6.72	7.56	0.1069	
	2	15.96	15.38	16.68	0.2255	71.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW12P-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-02 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.46	3.15	3.71	0.5172	
	2	2.79	2.47	3.09	0.4051	24.3
RDX	1	5.30	4.91	5.63	0.8965	
	2	3.27	3.05	3.47	0.6747	28.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-040209

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-03 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.43	4.91	5.63	0.1487	
	2	3.23	3.05	3.47	0.4446	99.7 J
Tetryl	1	9.16	8.68	9.70	0.09394	
	2	17.93	16.29	18.99	0.2060	74.7 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW09B-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-04 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.42	6.72	7.56	0.1124	
	2	15.88	15.38	16.68	0.3077	93.0 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-040309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-05 Date(s) Analyzed: 04/19/09 04/27/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.44	4.91	5.63	0.1113	
	2	3.23	3.05	3.47	0.3155	95.7
1,3,5-Trinitrobenzene	1	7.42	6.72	7.56	0.2210	
	2	15.75	15.38	16.68	0.2182	1.3
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 0903044 and 0903045, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903044 and 0903045. The data validation was performed in accordance with the SW-846 8260B for volatiles and SW-846 Method 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS01-EB01-030909	0903044-04	water	X		X
YS01-EB01-031009	0903044-12	water	X	X	X
YS01-EB01-031109	0903044-17	water	X	X	X
YS01-EB01-031209	0903044-23	water	X	X	X
YS01-EB02-030909	0903044-05	water	X		X
YS01-EB02-031009	0903044-13	water	X	X	X
YS01-EB02-031109	0903044-18	water	X	X	X
YS01-FB01-030909	0903044-03	water	X	X	
YS01-GW05-0309	0903044-09	water	X	X	X
YS01-GW05A-0309	0903044-11	water	X	X	X
YS01-GW12A-0309	0903044-20	water	X	X	X
YS01-GW12AP-0309	0903044-24	water	X	X	X
YS01-GW13-0309	0903044-01	water	X	X	X
YS01-GW13A-0309	0903044-02	water	X	X	X
YS01-GW17-0309	0903044-22	water	X	X	X
YS01-GW18-0309	0903044-15	water	X	X	X
YS01-GW19-0309	0903044-16	water	X	X	X
YS01-GW21-0309	0903044-21	water	X	X	X
YS01-GW23-0309	0903044-07	water	X	X	X
YS01-GW24-0309	0903044-08	water	X	X	X
YS01-GW25-0309	0903044-10	water	X	X	X
YS01-TB01-030909	0903044-06	water	X		
YS01-TB01-031009	0903044-14	water	X		
YS01-TB01-031109	0903044-19	water	X		
YS01-TB01-031209	0903044-25	water	X		
YS01-GW23-0309 MS	0903044-07MS	water	X	X	X
YS01-GW23-0309 MSD	0903044-07MSD	water	X	X	X

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The following quality control samples were provided with this SDG: sample YS01-TB01-030909, YS01-TB01-031009, YS01-TB01-031109 and YS01-TB01-031209-trip blanks; samples YS01-EB01-030909, YS01-EB01-031009, YS01-EB01-031109, YS01-EB01-031209, YS01-EB02-030909, YS01-EB02-031009 and YS01-EB02-031109-equipment blanks; and sample YS01-GW12AP-0309 was the field duplicate of sample YS01-GW12A-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Sample Condition	
• Technical Holding Times	*
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	
• Identification/Quantitation	*
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Two samples contained headspace in all sample vials that resulted in qualifications the data.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

The sample and associated field duplicate did not exhibit comparable results for three compounds that resulted in qualifications to the data.

Total and Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The matrix spike associated with the dissolved metals analysis exhibited non-compliant recoveries for selenium. This analyte was qualified as biased high in the associated field samples.

The serial dilution analysis exhibited non-compliant %Ds in the dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the associated field samples.

One of the submitted field duplicate pairs exhibited non-compliant RPDs for four analytes in the total analysis. These analytes were flagged as estimated J in the field duplicate pairs only.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Sample Condition

VOA

All sample vials for YS01-TB01-031009 contained headspace; therefore results were qualified as biased low (L/UL), qualifier code: OT.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/09-12/09 and samples were received at the laboratory 03/10-13/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/25/09	2-butanone	0.0378	YS01-EB02-031109, YS01-GW21-0309, YS01-GW17-0309, YS01-EB01-031209, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-TB01-031209	L/R	ICL
CC 03/17/09	acetone	0.0328	YS01-GW13-0309, YS01-GW13A-0309	L/R	CCL
	bromomethane	-54.46		J/UJ	CCL

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 03/18/09 CC 03/19/09 CC 03/20/09	acetone	0.0331/0.0321/0.0371	YS01-FB01-030909, YS01-EB01-030909, YS01-EB2-030909, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-EB01-031009, YS01-TB01-030909, YS01-GW18-0309, YS01-EB02-031009, YS01-TB01-031009, YS01-GW19-0309, YS01-EB01-031109, YS01-TB01-031109	L/R	CCL
CC 03/20/09	cyclohexane	-20.73	YS01-EB02-031009	J	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDH	methylene chloride	0.13J ug/L	0.50 ug/L	1.3 ug/L
VBLKHB	methylene chloride	0.11J	0.50	1.1
VBLKGY	methylene chloride	0.11J	0.50	1.1
VBLKGV	methylene chloride	0.11J	0.50	1.1
YS01-TB01-031009	methylene chloride	0.17J	2.5	1.7
YS01-TB01-031209	acetone	2.2J	2.5	22
YS01-TB01-030909	methylene chloride	0.14J	2.5	1.4
YS01-TB01-031109	methylene chloride	0.14J	2.5	1.4
YS01-EB01-031209	acetone	50	2.5	500
	methylene chloride	2.0	0.5	20
	toluene	0.72	0.5	3.6
YS01-EB01-030909	acetone	59	2.5	590
	methylene chloride	3.3	0.5	33
	toluene	1.2	0.5	6
YS01-EB02-030909	acetone	62	2.5	620
	methylene chloride	3.3	0.5	33
	toluene	1.1	0.5	5.5
YS01-EB01-031109	acetone	41	2.5	410
	methylene chloride	0.17J	0.5	1.7
YS01-EB02-031009	acetone	47	2.5	470
	methylene chloride	0.53	0.5	5.3
	toluene	0.2J	0.5	1.0

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS01-EB01-031009	acetone	54	2.5	540
	methylene chloride	1.2	0.5	12
	toluene	0.45J	0.5	2.25
YS01-EB02-031109	acetone	39	2.5	390
	methylene chloride	0.16J	0.5	1.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW19-0309, YS01-GW18-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309	methylene chloride	B	BL
YS01-GW05-0309, YS01-GW12A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	acetone	B	BL
YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	toluene	B	BL

Total and Dissolved Metals

Preparation, laboratory and field blank contamination was noted. Qualification for two analytes was required. Contamination and sample results qualifications are indicated in the following tables. Field blank samples were not submitted for metals analysis.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	iron	21.160B ug/L	105.8 ug/L	B	BL
	potassium	591.835B ug/L	2959.2 ug/L	B	BL
	silver	0.613B ug/L	3.065 g/L	B	BL
	sodium	316.855B ug/L	1584.275	B	BL
ICB/CCB – dissolved metals	vanadium	0.5 B ug/L	2.5 ug/L	B	BL
	copper	1.0B ug/L	5.0 ug/L	B	BL
	mercury	-0.111B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	aluminum	66B ug/L	330 ug/L	B	BL
	arsenic	2.9B ug/L	14.5 ug/L	B	BL
	beryllium	0.7B ug/L	3.5 ug/L	B	BL
YS01-EB02-031009 –dissolved	zinc	1.0B ug/L	5.0 ug/L	B	BL
YS01-EB01-031209-dissolved	zinc	2.8B ug/L	14 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW12A-0309, YS01-GW19-0309, YS01-GW23-0309	iron	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW18-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	potassium	B	BL
YS01-GW13-0309, YS01-GW13A-0309, YS01-GW25-0309	silver	B	BL
YS01-GW19-0309	sodium	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13A-0309, YS01-GW18-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	vanadium	B	BL
YS01-GW13-0309,. YS01-GW13A-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309, YS01-GW05-0309	copper	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW19-0309, YS01-GW21-0309	aluminum	B	BL
YS01-GW12AP-0309, YS01-GW19-0309, YS01-GW21-0309	arsenic	B	BL
YS01-GW21AP-0309, YS01-GW21-0309	beryllium	B	BL
YS01-GW05A-0309, YS01-GW23-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW21-0309	zinc	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	-1.617B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
ICB/CCB – total metals	mercury	-0.146B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	arsenic	2.8B ug/L	14 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	lead	L/UL	BL
all total metals field samples	mercury	L/UL	BL
YS01-GW05-0309, YS01-GW17-0309, YS01-GW23-0309	arsenic	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	nickel	B	BL

Matrix Spike

Total and Dissolved Metals

The matrix spike analysis of sample YS01-GW23-0309 for dissolved metals exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS01-GW23-0309	selenium	all dissolved metals field samples	124.7/144.8	K	MSH

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's for the analyte potassium in the dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS01-GW23-0309	potassium	all dissolved metals field samples	135.1	J/UJ	SD

Field Duplicate

VOA

Sample YS01-GW12A-0309 and field duplicate sample YS01-GW12AP-0309 did not exhibit comparable results for cis-1,2-dichloroethene at 60% RPD, trichloroethene at 50% RPD and 1,2-dichloroethene (total) at 60% RPD; therefore results for these compounds were qualified as estimated (J/UJ), qualifier code: FD.

Total & Dissolved Metals

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for four total metals analytes. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS01-GW12A-0309, YS01-GW12AP-0309	iron manganese potassium sodium	YS03-GW12A-0309, YS03-GW12AP-0309 (total)	35 59 72 35	J	FD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Reporting Limits

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. No validation action was required. Reporting limits (QAPP QLs) were met.

Total Metals (instrument P4)

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

Dissolved Metals (instrument P3)

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
lead	2.46	2.6
thallium	3.71	6.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS01-TB01-031009	all results	+/-	L/UL	OT
YS01-EB02-031109, YS01-GW21-0309, YS01-GW17-0309, YS01-EB01-031209, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-TB01-031209	2-butanone	+/-	L/R	ICL
YS01-GW13-0309, YS01-GW13A-0309	acetone	+/-	L/R	CCL
YS01-GW13-0309, YS01-GW13A-0309	bromomethane	+/-	J/UJ	CCL
YS01-FB01-030909, YS01-EB01-030909, YS01-EB2-030909, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-EB01-031009, YS01-TB01-030909, YS01-GW18-0309, YS01-EB02-031009, YS01-TB01-031009, YS01-GW19-0309, YS01-EB01-031109, YS01-TB01-031109	acetone	+/-	L/R	CCL
YS01-EB02-031009	cyclohexane	+	J	CCL
YS01-GW19-0309, YS01-GW18-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309	methylene chloride	+	B	BL
YS01-GW05-0309, YS01-GW12A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	acetone	+	B	BL
YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	toluene	+	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309	cis-1,2-dichloroethene, trichloroethene, 1,2-dichloroethene	+/-	J/UJ	FD

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	lead	+/- up to action level	L/UL	BL
all total metals field samples	mercury	+/- up to action level	L/UL	BL
YS01-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	arsenic	+ up to action level	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	nickel	+ up to action level	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309	iron manganese potassium sodium	+	J	FD
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW12A-0309, YS01-GW19-0309, YS01-GW23-0309	iron	+ up to action level	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW18-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	potassium	+ up to action level	B	BL
YS01-GW13-0309, YS01-GW13A-0309, YS01-GW25-0309	silver	+ up to action level	B	BL
YS01-GW19-0309	sodium	+ up to action level	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13A-0309, YS01-GW18-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	vanadium	+ up to action level	B	BL
YS01-GW13-0309,. YS01-GW13A-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309, YS01-GW05-0309	copper	+ up to action level	B	BL
all dissolved metals field samples	mercury	+/- up to action level	L/UL	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW19-0309, YS01-GW21-0309	aluminum	+ up to action level	B	BL
YS01-GW12AP-0309, YS01-GW19-0309, YS01-GW21-0309	arsenic	+ up to action level	B	BL
YS01-GW21AP-0309, YS01-GW21-0309	beryllium	+ up to action level	B	BL
YS01-GW05A-0309, YS01-GW23-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW21-0309	zinc	+ up to action level	B	BL
all dissolved metals field samples	selenium	+	K	MSH
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0473

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	59	4,CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.3	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	11	
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.2	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-EB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0473

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	54	L, CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.2	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.45	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-EB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-17R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	41	L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.17	~~J~~ B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

052609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-17R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-23R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	50	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	2.0	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R, ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.72	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-23R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0573

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	62	LCCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.3	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.1	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0573

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-13R273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	47	LCCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.53	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.20	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-13R273

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.10	J CCL
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

VW 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-18R291

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	39	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.16	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-18R291

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-FB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-03R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	54	LCCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.8	B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	2.1	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-FB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-03R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.14	J
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW05-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0973

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	1.4	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	~~JB~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW05-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0973

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

06020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW05A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	~~JB~~ B, PL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

D6/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW05A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-20D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	2.5	U
74-87-3	Chloromethane	2.5	U
75-01-4	Vinyl Chloride	2.5	U
74-83-9	Bromomethane	2.5	U
75-00-3	Chloroethane	2.5	U
75-69-4	Trichlorofluoromethane	2.5	U
75-35-4	1,1-Dichloroethene	2.5	U
75-15-0	Carbon disulfide	2.5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	2.5	U
67-64-1	Acetone	6.7	~~U~~ JB,PD
79-20-9	Methyl acetate	2.5	U
75-09-2	Methylene Chloride	2.5	U
156-60-5	trans-1,2-Dichloroethene	2.5	U
1634-04-4	Methyl-tert-butyl ether	2.5	U
75-34-3	1,1-Dichloroethane	2.5	U
156-59-2	cis-1,2-Dichloroethene	15	J PD
78-93-3	2-butanone	13	~~U~~ J RICL
67-66-3	Chloroform	2.5	U
71-55-6	1,1,1-Trichloroethane	2.5	U
56-23-5	Carbon Tetrachloride	2.5	U
71-43-2	Benzene	2.5	U
107-06-2	1,2-Dichloroethane	2.5	U
79-01-6	Trichloroethene	57	J PD
78-87-5	1,2-Dichloropropane	2.5	U
75-27-4	Bromodichloromethane	2.5	U
10061-01-5	cis-1,3-Dichloropropene	2.5	U
108-10-1	4-Methyl-2-pentanone	13	U
108-88-3	Toluene	2.5	U
10061-02-6	trans-1,3-Dichloropropene	2.5	U
79-00-5	1,1,2-Trichloroethane	2.5	U
127-18-4	Tetrachloroethene	2.5	U
591-78-6	2-hexanone	13	U
124-48-1	Dibromochloromethane	2.5	U

FORM I VOA

VM 060204

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW12A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-20D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 5.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	2.5	U
108-90-7	Chlorobenzene	2.5	U
100-41-4	Ethylbenzene	2.5	U
108-38-3	m,p-Xylene	5.0	U
95-47-6	o-Xylene	2.5	U
100-42-5	Styrene	2.5	U
75-25-2	Bromoform	2.5	U
98-82-8	Isopropyl Benzene	2.5	U
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U
541-73-1	1,3-Dichlorobenzene	2.5	U
106-46-7	1,4-Dichlorobenzene	2.5	U
95-50-1	1,2-Dichlorobenzene	2.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	2.5	U
120-82-1	1,2,4-Trichlorobenzene	2.5	U
540-59-0	1,2-Dichloroethene (total)	14	J FD
1330-20-7	Xylene (total)	2.5	U
110-82-7	Cyclohexane	2.5	U
108-87-2	Methylcyclohexane	2.5	U

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW1
2AP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-24

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-24D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.2	U
74-87-3	Chloromethane	4.2	U
75-01-4	Vinyl Chloride	4.2	U
74-83-9	Bromomethane	4.2	U
75-00-3	Chloroethane	4.2	U
75-69-4	Trichlorofluoromethane	4.2	U
75-35-4	1,1-Dichloroethene	4.2	U
75-15-0	Carbon disulfide	4.2	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.2	U
67-64-1	Acetone	21	U
79-20-9	Methyl acetate	4.2	U
75-09-2	Methylene Chloride	4.2	U
156-60-5	trans-1,2-Dichloroethene	4.2	U
1634-04-4	Methyl-tert-butyl ether	4.2	U
75-34-3	1,1-Dichloroethane	4.2	U
156-59-2	cis-1,2-Dichloroethene	28	JAD
78-93-3	2-butanone	21	U R ICL
67-66-3	Chloroform	4.2	U
71-55-6	1,1,1-Trichloroethane	4.2	U
56-23-5	Carbon Tetrachloride	4.2	U
71-43-2	Benzene	4.2	U
107-06-2	1,2-Dichloroethane	4.2	U
79-01-6	Trichloroethene	95	JAD
78-87-5	1,2-Dichloropropane	4.2	U
75-27-4	Bromodichloromethane	4.2	U
10061-01-5	cis-1,3-Dichloropropene	4.2	U
108-10-1	4-Methyl-2-pentanone	21	U
108-88-3	Toluene	4.2	U
10061-02-6	trans-1,3-Dichloropropene	4.2	U
79-00-5	1,1,2-Trichloroethane	4.2	U
127-18-4	Tetrachloroethene	4.2	U
591-78-6	2-hexanone	21	U
124-48-1	Dibromochloromethane	4.2	U

FORM I VOA

060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW1
2AP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-24

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-24D291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 8.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	4.2	U
108-90-7	Chlorobenzene	4.2	U
100-41-4	Ethylbenzene	4.2	U
108-38-3	m,p-Xylene	8.3	U
95-47-6	o-Xylene	4.2	U
100-42-5	Styrene	4.2	U
75-25-2	Bromoform	4.2	U
98-82-8	Isopropyl Benzene	4.2	U
79-34-5	1,1,2,2-Tetrachloroethane	4.2	U
541-73-1	1,3-Dichlorobenzene	4.2	U
106-46-7	1,4-Dichlorobenzene	4.2	U
95-50-1	1,2-Dichlorobenzene	4.2	U
96-12-8	1,2-Dibromo-3-Chloropropane	4.2	U
120-82-1	1,2,4-Trichlorobenzene	4.2	U
540-59-0	1,2-Dichloroethene (total)	26	JFD
1330-20-7	Xylene (total)	4.2	U
110-82-7	Cyclohexane	4.2	U
108-87-2	Methylcyclohexane	4.2	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0173

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	~~U~~ UJ CCL
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.13	~~JB~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 040209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0173

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0273

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	~~U~~ UJ CCL
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.13	~~J~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW13A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0273

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/17/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW17-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-22R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.9	~~B~~ B,BR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R IC
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

LM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW17-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-22R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

D60209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW18-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1573

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ RCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.15	~~JB~~ B, PQL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW18-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1573

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW19-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-16R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.15	JB B, PBL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW19-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-16R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW21-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-21R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.15	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.54	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW21-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-21R91

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW23-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0773

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.9	J B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	JB B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.4	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.12	J B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW23-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0773

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW24-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0873

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.14	J
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.0	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.15	JB,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.44	J
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.74	
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	6.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.24	JB,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW24-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-0873

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.16	J
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.42	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW25-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1073

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.8	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	~~JB~~ B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.60	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.73	
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.21	J B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

D60209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-GW25-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-1073

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/18/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.13	J
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-06R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.14	J B
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 06/22/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-TB0
1-030909

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-06R73

Level: (low/med) LOW Date Received: 03/10/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-14R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U UL,OT
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R,CCL
79-20-9	Methyl acetate	0.50	~~U~~ UL,OT
75-09-2	Methylene Chloride	0.17	~~JB~~ L,OT
156-60-5	trans-1,2-Dichloroethene	0.50	U UL,OT
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

LM 040209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-14R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

UL, OT

06/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-19R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.14	JB
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VG 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-TB0
1-031109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-19R73

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/21/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-25

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-25R291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.2	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-TB0
1-031209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 0903044-25

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903044-25R291

Level: (low/med) LOW Date Received: 03/13/09

% Moisture: not dec. _____ Date Analyzed: 03/25/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MS173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.8	
74-87-3	Chloromethane	5.6	
75-01-4	Vinyl Chloride	6.2	
74-83-9	Bromomethane	5.9	
75-00-3	Chloroethane	6.3	
75-69-4	Trichlorofluoromethane	15	
75-35-4	1,1-Dichloroethene	5.9	
75-15-0	Carbon disulfide	6.1	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.9	
67-64-1	Acetone	23	
79-20-9	Methyl acetate	4.5	
75-09-2	Methylene Chloride	5.8	B
156-60-5	trans-1,2-Dichloroethene	6.1	
1634-04-4	Methyl-tert-butyl ether	4.6	
75-34-3	1,1-Dichloroethane	5.9	
156-59-2	cis-1,2-Dichloroethene	6.2	
78-93-3	2-butanone	20	
67-66-3	Chloroform	6.0	
71-55-6	1,1,1-Trichloroethane	5.4	
56-23-5	Carbon Tetrachloride	5.5	
71-43-2	Benzene	5.8	
107-06-2	1,2-Dichloroethane	5.5	
79-01-6	Trichloroethene	7.8	
78-87-5	1,2-Dichloropropane	5.3	
75-27-4	Bromodichloromethane	5.4	
10061-01-5	cis-1,3-Dichloropropene	5.1	
108-10-1	4-Methyl-2-pentanone	20	
108-88-3	Toluene	5.4	
10061-02-6	trans-1,3-Dichloropropene	5.1	
79-00-5	1,1,2-Trichloroethane	5.6	
127-18-4	Tetrachloroethene	6.1	
591-78-6	2-hexanone	18	
124-48-1	Dibromochloromethane	5.2	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MS173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.2	
108-90-7	Chlorobenzene	5.6	
100-41-4	Ethylbenzene	5.4	
108-38-3	m,p-Xylene	12	
95-47-6	o-Xylene	5.8	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	5.2	
98-82-8	Isopropyl Benzene	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	4.6	
541-73-1	1,3-Dichlorobenzene	5.5	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	4.3	
120-82-1	1,2,4-Trichlorobenzene	4.9	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	19	
110-82-7	Cyclohexane	5.0	
108-87-2	Methylcyclohexane	5.1	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MSD173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.5	
74-87-3	Chloromethane	5.3	
75-01-4	Vinyl Chloride	6.0	
74-83-9	Bromomethane	5.7	
75-00-3	Chloroethane	5.6	
75-69-4	Trichlorofluoromethane	12	
75-35-4	1,1-Dichloroethene	5.6	
75-15-0	Carbon disulfide	5.9	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.5	
67-64-1	Acetone	23	
79-20-9	Methyl acetate	4.4	
75-09-2	Methylene Chloride	5.6	B
156-60-5	trans-1,2-Dichloroethene	6.0	
1634-04-4	Methyl-tert-butyl ether	4.7	
75-34-3	1,1-Dichloroethane	5.6	
156-59-2	cis-1,2-Dichloroethene	5.9	
78-93-3	2-butanone	19	
67-66-3	Chloroform	5.8	
71-55-6	1,1,1-Trichloroethane	5.1	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	5.6	
107-06-2	1,2-Dichloroethane	5.2	
79-01-6	Trichloroethene	7.6	
78-87-5	1,2-Dichloropropane	5.4	
75-27-4	Bromodichloromethane	5.3	
10061-01-5	cis-1,3-Dichloropropene	5.1	
108-10-1	4-Methyl-2-pentanone	20	
108-88-3	Toluene	5.2	
10061-02-6	trans-1,3-Dichloropropene	5.1	
79-00-5	1,1,2-Trichloroethane	5.6	
127-18-4	Tetrachloroethene	5.9	
591-78-6	2-hexanone	19	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-GW2
3-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix: (soil/water) WATER Lab Sample ID: 9031905-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9031905-MSD173

Level: (low/med) LOW Date Received: 03/11/09

% Moisture: not dec. _____ Date Analyzed: 03/19/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.3	
108-90-7	Chlorobenzene	5.4	
100-41-4	Ethylbenzene	5.0	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.6	
100-42-5	Styrene	5.4	
75-25-2	Bromoform	5.1	
98-82-8	Isopropyl Benzene	5.6	
79-34-5	1,1,2,2-Tetrachloroethane	4.7	
541-73-1	1,3-Dichlorobenzene	5.4	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	3.9	
120-82-1	1,2,4-Trichlorobenzene	5.2	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	4.9	
108-87-2	Methylcyclohexane	5.1	

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-09

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3010			P
7440-36-0	Antimony	6.8	B	J	P
7440-38-2	Arsenic	4.9	B	B BL	P
7440-39-3	Barium	30.6	B	J	P
7440-41-7	Beryllium	0.73	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	53000			P
7440-47-3	Chromium	2.3	B	J	P
7440-48-4	Cobalt	11.0			P
7440-50-8	Copper	1.2	B	J	P
7439-89-6	Iron	5850			P
7439-92-1	Lead	2.2	B	L BL	P
7439-95-4	Magnesium	17000			P
7439-96-5	Manganese	59.9			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	8.3	B	B BL	P
7440-09-7	Potassium	1830	B	J	P
7782-49-2	Selenium	2.8	B	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	18100			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	7.6	B	J	P
7440-66-6	Zinc	34.6			P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-11

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	187	B	J	P
7440-36-0	Antimony	9.3	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	11.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	36000			P
7440-47-3	Chromium	35.2			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	4.6	B	J	P
7439-89-6	Iron	555		M	P
7439-92-1	Lead	3.5		L BL	P
7439-95-4	Magnesium	604	B	J	P
7439-96-5	Manganese	50.7			P
7439-97-6	Mercury	0.10	U	ULBL	CV
7440-02-0	Nickel	15.8	B	B BL	P
7440-09-7	Potassium	727	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4400	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.96	B	J	P
7440-66-6	Zinc	15.1	B	J	P

BL X1corr JAC 6209

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-20

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	720			P
7440-36-0	Antimony	10.1			P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	37.0	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	53500			P
7440-47-3	Chromium	2.5	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.9	B	J	P
7439-89-6	Iron	669		NJ FD	P
7439-92-1	Lead	2.7	B	L BL	P
7439-95-4	Magnesium	1120	B	J	P
7439-96-5	Manganese	59.8		J FD	P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.9	B	B BL	P
7440-09-7	Potassium	19200		J FD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10500		J FD	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.8	B	J	P
7440-66-6	Zinc	13.7	B	J	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12AP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-24

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	778			P
7440-36-0	Antimony	7.7	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	33.7	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.66	B	J	P
7440-70-2	Calcium	67700			P
7440-47-3	Chromium	3.7	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.9	B	J	P
7439-89-6	Iron	954		W J FD	P
7439-92-1	Lead	3.8		L BL	P
7439-95-4	Magnesium	1920	B	J	P
7439-96-5	Manganese	110		J FD	P
7439-97-6	Mercury	0.10	W	WL BL	CV
7440-02-0	Nickel	2.3	B	B BL	P
7440-09-7	Potassium	9080		J FD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7350		J FD	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.2	B	J	P
7440-66-6	Zinc	18.7	B	J	P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-01

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1120			P
7440-36-0	Antimony	6.0	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	167	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	6320			P
7440-47-3	Chromium	1.6	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	1610		N	P
7439-92-1	Lead	2.6	~~B~~	~~B~~ BL	P
7439-95-4	Magnesium	2370	~~B~~	J	P
7439-96-5	Manganese	66.0			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	2.8	~~B~~	B BL	P
7440-09-7	Potassium	1910	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3760	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.5	~~B~~	J	P
7440-66-6	Zinc	49.8			P

JC 6/3/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-02

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	617			P
7440-36-0	Antimony	7.6	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	38.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	38000			P
7440-47-3	Chromium	29.3			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.3	B	J	P
7439-89-6	Iron	871		N	P
7439-92-1	Lead	3.4		L BL	P
7439-95-4	Magnesium	1250	B	J	P
7439-96-5	Manganese	80.9			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	12.8	B	B BL	P
7440-09-7	Potassium	1160	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4320	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	B	J	P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW17-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-22

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	500			P
7440-36-0	Antimony	6.7	B	J	P
7440-38-2	Arsenic	9.7	B	B BL	P
7440-39-3	Barium	2.8	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	3900	B	J	P
7440-47-3	Chromium	1.7	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	6690		N	P
7439-92-1	Lead	2.4	B	L BL	P
7439-95-4	Magnesium	1230	B	J	P
7439-96-5	Manganese	23.6			P
7439-97-6	Mercury	0.10	V	W BL	CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	124	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3190	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	16.7	B	J	P
7440-66-6	Zinc	5.2	U		P

6209

Color Before: BROWN Clarity Before: CLEAR Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-15

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	111	~~B~~	J	P
7440-36-0	Antimony	9.9	~~B~~	J	P
7440-38-2	Arsenic	23.4			P
7440-39-3	Barium	43.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	1.4	~~B~~	J	P
7440-70-2	Calcium	60300			P
7440-47-3	Chromium	1.8	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.97	~~B~~	J	P
7439-89-6	Iron	11800		~~H~~	P
7439-92-1	Lead	2.4	~~B~~	L BL	P
7439-95-4	Magnesium	6070			P
7439-96-5	Manganese	238			P
7439-97-6	Mercury	0.10	~~H~~	UL BL	CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	815	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4710	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	~~B~~	J	P
7440-66-6	Zinc	14.2	~~B~~	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-16

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	962			P
7440-36-0	Antimony	8.8	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	28.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	5.8			P
7440-70-2	Calcium	29100			P
7440-47-3	Chromium	2.9	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.3	B	J	P
7439-89-6	Iron	1970		N	P
7439-92-1	Lead	4.9		L BL	P
7439-95-4	Magnesium	2960	B	J	P
7439-96-5	Manganese	20.6			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.1	B	B BL	P
7440-09-7	Potassium	1940	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	2300	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.1	B	J	P
7440-66-6	Zinc	281			P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-21

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4960			P
7440-36-0	Antimony	8.3	B	J	P
7440-38-2	Arsenic	14.7			P
7440-39-3	Barium	58.1	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	2.9	B	J	P
7440-70-2	Calcium	159000			P
7440-47-3	Chromium	25.1			P
7440-48-4	Cobalt	5.5			P
7440-50-8	Copper	9.1			P
7439-89-6	Iron	13500		N	P
7439-92-1	Lead	6.0		L BL	P
7439-95-4	Magnesium	4400	B	J	P
7439-96-5	Manganese	705			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	17.3	B	B BL	P
7440-09-7	Potassium	3250	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7630			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	33.5			P
7440-66-6	Zinc	33.9			P

JAC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-07

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	929			P
7440-36-0	Antimony	7.1	B	J	P
7440-38-2	Arsenic	3.4	B	B BL	P
7440-39-3	Barium	21.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	90800			P
7440-47-3	Chromium	4.9	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.5	B	J	P
7439-89-6	Iron	2060		N	P
7439-92-1	Lead	2.4	B	L BL	P
7439-95-4	Magnesium	1800	B	J	P
7439-96-5	Manganese	80.9			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	2.6	B	B BL	P
7440-09-7	Potassium	1380	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6490			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	5.2	B	J	P
7440-66-6	Zinc	10.6	B	J	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-08

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3410			P
7440-36-0	Antimony	8.8	B	J	P
7440-38-2	Arsenic	19.1			P
7440-39-3	Barium	38.6	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	1.4	B	J	P
7440-70-2	Calcium	70500			P
7440-47-3	Chromium	25.8			P
7440-48-4	Cobalt	2.5	B	J	P
7440-50-8	Copper	3.7	B	J	P
7439-89-6	Iron	11200		N	P
7439-92-1	Lead	4.1		L BL	P
7439-95-4	Magnesium	2520	B	J	P
7439-96-5	Manganese	200			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	10.7	B	B BL	P
7440-09-7	Potassium	3300	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8010			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	24.6			P
7440-66-6	Zinc	21.2			P

JAC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-10

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	639			P
7440-36-0	Antimony	6.4	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	32.9	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.99	~~B~~	J	P
7440-70-2	Calcium	147000			P
7440-47-3	Chromium	8.4	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	1800		~~N~~	P
7439-92-1	Lead	2.7	~~B~~	L BL	P
7439-95-4	Magnesium	2950	~~B~~	J	P
7439-96-5	Manganese	65.7			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	4.0	~~B~~	B BL	P
7440-09-7	Potassium	2240	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	15200			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.6	~~B~~	J	P
7440-66-6	Zinc	5.8	~~B~~	J	P

JMC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-12

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U	N	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.8	U	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-13

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-17

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.3	B	J	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	B	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-18

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 4/6/209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-23

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U	M	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

0209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-FB01-030909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Lab Sample ID: 0903044-03

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	32.5	U	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

0209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-07

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1810			P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	5.7	B	J	P
7440-39-3	Barium	28.1	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	55700			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	13.7			P
7440-50-8	Copper	1.8	B	B BL	P
7439-89-6	Iron	3420			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18200			P
7439-96-5	Manganese	54.6			P
7439-97-6	Mercury	0.10	U	WL BL	CV
7440-02-0	Nickel	9.0	B	J	P
7440-09-7	Potassium	2700	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	19300			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	4.4	B	J	P
7440-66-6	Zinc	33.8			P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW05A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-09

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	9.9	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	36400			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	21.6			P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	597	B	J	P
7439-96-5	Manganese	28.2			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1290	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	4110	B	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.0	B	B BL	P

MC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-16

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	173	~~B~~	~~B~~ BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	23.9	~~B~~	~~J~~	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	34300			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.2	~~B~~	~~B BL~~	P J
7439-89-6	Iron	26.1	~~B~~	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	516	~~B~~	~~J~~	P
7439-96-5	Manganese	5.4	~~B~~	~~J~~	P
7439-97-6	Mercury	0.15	~~B~~	~~J~~	CV
7440-02-0	Nickel	7.1	~~B~~	~~J~~	P
7440-09-7	Potassium	11300		~~FJ~~ SD	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	7020			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.55	~~B~~	B BL	P
7440-66-6	Zinc	3.7	~~B~~	B BL	P

x1 corr JAC 6809

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12AP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-20

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	212		B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	3.3	~~B~~	B BL	P
7440-39-3	Barium	24.3	~~B~~	J	P
7440-41-7	Beryllium	0.39	~~B~~	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	33400			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.67	~~B~~	J	P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	464	~~B~~	J	P
7439-96-5	Manganese	3.2	~~B~~	J	P
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	13300		~~B~~ J SD	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	7530			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.67	~~B~~	B BL	P
7440-66-6	Zinc	2.6	~~B~~	B BL	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-01

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	185	B	J	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	162	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	6930			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	1.4	B	J	P
7440-50-8	Copper	1.2	B	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2570	B	J	P
7439-96-5	Manganese	63.6			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	2.1	B	J	P
7440-09-7	Potassium	2520	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.63	B	B BL	P
7440-23-5	Sodium	3660	B	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	44.8			P

6/29

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW13A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-02

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	20.1	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	33400			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.4	~~B~~	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	639	~~B~~	J	P
7439-96-5	Manganese	19.3			P
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1660	~~B~~	~~E~~ B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.96	~~B~~	B BL	P
7440-23-5	Sodium	4110	~~B~~	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.98	~~B~~	B BL	P
7440-66-6	Zinc	1.6	~~B~~	J	P

MC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW17-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-18

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	61.5	B	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	2.1	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	4180	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1290	B	J	P
7439-96-5	Manganese	5.7	B	J	P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	710	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	2680	B	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	1.6	B	B BL	P
7440-66-6	Zinc	2.6	B	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-12

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	28.6			P	
7440-39-3	Barium	39.3	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	56700			P	
7440-47-3	Chromium	0.89	~~B~~	J	P	
7440-48-4	Cobalt	0.87	~~B~~	J	P	
7440-50-8	Copper	1.2	~~B~~	~~B~~ BL	P	J
7439-89-6	Iron	8000			P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	6100			P	
7439-96-5	Manganese	233			P	
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	1420	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	19.3		K MSH	P	
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	3660	~~B~~	J	P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.70	~~B~~	B BL	P	
7440-66-6	Zinc	11.5	~~B~~	J	P	

X1 Corr JAC 6859

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-13

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	88.1	~~B~~	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	9.6	~~B~~	B BL	P
7440-39-3	Barium	25.2	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	5.5			P
7440-70-2	Calcium	28900			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	2.2	~~B~~	~~B BL~~	P J XICORR JAC6809
7439-89-6	Iron	103		B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	3110	~~B~~	J	P
7439-96-5	Manganese	16.6			P
7439-97-6	Mercury	0.10	~~B~~	AL BL	CV
7440-02-0	Nickel	1.6	~~B~~	J	P
7440-09-7	Potassium	2480	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	10.1		K MSH	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	1330	~~B~~	B BL	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	257			P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-17

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	51.1	B	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	6.8	B	B BL	P
7440-39-3	Barium	13.6	B	J	P
7440-41-7	Beryllium	0.47	B	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	91500			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2760	B	J	P
7439-96-5	Manganese	11.0			P
7439-97-6	Mercury	0.10	U	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1860	B	EB BL	P
7782-49-2	Selenium	6.7		K MSH	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	6470			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.5	B	B BL	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-05

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	19.7	B	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	96700			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.0	B	B BL	P
7439-89-6	Iron	33.6	B	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1730	B	J	P
7439-96-5	Manganese	64.8			P
7439-97-6	Mercury	0.10	B	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1600	B	B BL	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	6580			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.79	B	B BL	P
7440-66-6	Zinc	2.2	B	B BL	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-06

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	18.1	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	48800			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.4	~~B~~	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1460	~~B~~	J	P
7439-96-5	Manganese	116			P
7439-97-6	Mercury	0.10	~~B~~	ML BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2260	~~B~~	EB BL	P
7782-49-2	Selenium	7.6		K MSH	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	7740			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.63	~~B~~	B BL	P
7440-66-6	Zinc	0.74	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-08

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	5.2	~~B~~	J	P
7440-39-3	Barium	29.9	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	146000			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.5	~~B~~	B BL	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2900	~~B~~	J	P
7439-96-5	Manganese	59.1			P
7439-97-6	Mercury	0.10	~~B~~	UL BL	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2360	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	13.9		K MSH	P
7440-22-4	Silver	0.92	~~B~~	B BL	P
7440-23-5	Sodium	15100			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.79	~~B~~	B BL	P
7440-66-6	Zinc	1.4	~~B~~	J	P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-030909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-03

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	275			P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	4.0	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	1290	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.1	~~B~~	J	P
7439-89-6	Iron	97.5	~~B~~	J	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	122	~~B~~	J	P
7439-96-5	Manganese	9.6	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	611	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.3	~~B~~	J	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-10

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	94.4	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	571	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.74	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-14

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	95.7	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	1.3	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	569	~~B~~	~~J~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.9	~~B~~	J	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-19

Level (low/med): LOW Date Received: 3/13/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.35	B	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	74.5	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	574	B	J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.8	B	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-030909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-04

Level (low/med): LOW Date Received: 3/10/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	31.5	U		P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	1.3	~~B~~	J	P
7439-89-6	Iron	32.0	~~B~~	J	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	599	~~B~~	~~B~~ J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.65	~~B~~	J	P
7440-66-6	Zinc	0.74	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-11

Level (low/med): LOW Date Received: 3/11/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	67.2	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.98	B	J	P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	1.0	B	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	578	B	E J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.83	B	J	P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.0	B	J	P

6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Lab Sample ID: 0903045-15

Level (low/med): LOW Date Received: 3/12/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.39	B	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	114	B	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.70	B	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	577	B	E J	P
7782-49-2	Selenium	4.1	U		P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.5	B	J	P

MC 6/3/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

15621

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CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp. CTO 166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier	
Airbill No.	
Sampling Complete? Y or (N)	

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland St STE 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Mark L ...	Are high concentrations expected? Y or (N)? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Requested Analysis (include method and bottle type): VOA OLM04.2* 40mL | Filtered Metals 1000mL* | Metals Total 1000mL* | Chl, Sulfate, Alk 250mL | TOC 40mL | MEE RSK175 40mL | *

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOA	Filtered Metals	Metals Total	Chl, Sulfate, Alk	TOC	MEE					pH	DC	Total metals	Diss metals
~~0903044-01~~ 0903045-01	YS01-GW13-0309	3/9/09	1520	GW	10	X		X	X			3	1	1	1	2	2					<2	<2	<2	<2
~~0903044-02~~ 0903045-02	YS01-GW13A-0309	3/9/09	1540	GW	18	X		X	X			3	1	1	1	2	2					<2	<2	<2	<2
0903044-06	YS01-TB01-030909	3/9/09	1640	TB	3	X						3	–	–	–	–	–	(3) larger than pea size					–	–	–
~~0903044-04~~ 0903045-03	YS01-EB01030909	3/9/09	1615	FB	9	X		X	X			3	1	–	(1)*	(2)*	(2)*	air bubbles					–	–	<2
0903044-03	YS01-FB-030909	3/9/09	1700	FB	9							3	–	1	(1)*	(2)*	(2)*					<2	–	<2	–
~~0903044-05~~ 0903045-04	YS01-EB02-030909	3/9/09	1630	EB	9	X		X	X			3	1	–	(1)*	(2)*	(2)*	(1) MEE2 EB02 was labeled EB01							<2

* analyses cancelled per Chelsea / See memo CI 3/10/09

Lab Use Only		Comments
Sample Unpacked By: [signature]	Cyanide samples checked for sulfide & chlorine? Y or (NA)	Note: Do not collect Total Metals for Equipment Blank
Sample Order Entry By: [signature]	625 & Phenol samples checked for chlorine? Y or (NA)	No Filter Metals on Field Blank
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or (NA)	
If no, explain:		

Sample Custody

Relinquished by: [signature]	Date/Time: 3/9/09 1830	Received by: [signature]	Date/Time: 3/10/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 3.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

3 Coolers

15586

142

107

CompuChem
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CTO-166

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier
Airbill No.
Sampling Complete? Y or (N)

Client/Reporting Information

Company Name: CH2M Hill
Address: 5700 Cleveland ST STE 101
City: Virginia Bch State: VA Zip: 23462
Project Contact: Chelsea Bennet
Phone #: 757 671-8311
Sampler's Name: MLOST

Project Information

Project Name: NWS Yorktown Site 1
Sampling Location:
Turnaround time: Per Contract
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? (Y) or N
Are high concentrations expected? Y or (N)? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

VOC 40 ml oline 3.4 * | TOC 40 ml 9060/LK | Chl, Alk, Sulfate 250 | Mee 40 ml RSK 175 | Total Metals PL Ilmas 5 | Dissolved Metals PL Ilmas

* Methods are now SW-846 (initialed 3/11/09)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC	TOC	Chl	Mee	Total Metals	Dissolved Metals		pH / Sample Info (Lab Use) TOC	TH Metals	Diss Metals
~~0903044-07~~ 0903045-05	YS01-GW23-0309	3/10/09	0940	GW	30	x		x	x			9	6	3	6	3	3	Run QC	<2	<2	<2
~~0903044-08~~ 0903045-06	YS01-GW34-0309	3/10/09	1015	GW	10	x		x	x			3	2	1	2	1	1		<2	<2	<2
~~0903044-12~~ 0903045-10	YS01-EB01-031009	3/10/09	1040	EB	5	x		x				3	–	–	–	1	1		<2	<2	<2
~~0903044-09~~ 0903045-07	YS01-GW05-0309	3/10/09	1330	GW	10	x		x	x			3	2	1	2	1	1		<2	<2	<2
~~0903044-10~~ 0903045-08	YS01-GW25-0309	3/10/09	1410	GW	10	x		x	x			3	2	1	2	1	1		<2	<2	<2
~~0903044-13~~ 0903045-11	YS01-EB02-031009	3/10/09	1530	EB	5							3	–	–	–	1	1			<2	<2
0903044-~~14~~	YS01-TB-031009 → "YS01-TB01-031009"	3/10/09	1555	TB	3	x						3	–	–	–	–	–				
~~0903044-11~~ 0903045-09	* not on COC (YS01-GW05A-0309) on 3/10/09 @ 1510											3	2	1	2	1	1		<2	<2	<2

Lab Use Only

Sample Unpacked By: Diane Byrd
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:
1) YS01-GW23-0309 Bottles Labeled YS01-1GW23-0309
2) Run QC YS01-GW23-0309
* Received Sample YS01-GW05A-0309 3/10/09 1510
Sample Custody YS01-TB-031009 all vials have smaller than pea size bubble DB 3/11/09

Relinquished by: [signature]	Date/Time: 3/10/09 1800	Received by: Diane Byrd		Date/Time: 3/11/09 0900	
Relinquished by:	Date/Time:	Received by:		Date/Time:	
Subcontact? Y or N If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.4, 1.0 °C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

1 Cooler

15588

145 108

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO-166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland St STE 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671 8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: ML OST	Are high concentrations expected? Y or N? If yes, which ID(s)? No

Requested Analysis (include method and bottle type): VOC SW 846 40ml; MEE RSK 175 40ml; Alk, Chloride, Sulfate 250 mL; TOC 9060 LK; Total Metals ILM05.3 1000 mL *; Dissolved Metals ILM05.3 1000mL *

*parameters per SW846 6010/7470 (changed, 3/11/09)

Matrices: GW - Ground water, WW - Waste water, SW - Surface water, SO - Soil/Sediment, TB - Trip Blank, RI - Rinsate, WP - Wipe, O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC SW 846	MEE RSK 175	Alk, Chloride, Sulfate	TOC 9060	Total Metals	Dissolved Metals	pH (Total Metals)	pH (Diss. Metals)
0903044-15 / 0903045-12	YS01-GW18-0309	3/11/09	1120	GW	10	X		X	X			3	2	1	2	1	1	<2	<2
0903044-16 / 0903045-13	YS01-GW19-0309	3/11/09	1140	GW	10	X		X	X			3	2	1	2	1	1	<2	<2
0903044-17 / 0903044-?	YS01-EB01-031109	3/11/09	1500	EB	5	X		X	—			3	—	—	—	1	1	<2	<2
0903044-18 / 0903044-?	YS01-EB02-031109	3/11/09	1510	EB	5	X		X				3	-	-	-	1	1	<2	<2
0903044-19	YS01-TB01-031109	3/11/09	1515	TB	3	X						3	—	—	—	—	/		

Lab Use Only		Comments
Sample Unpacked By: [signature]	Cyanide samples checked for sulfide & chlorine? Y or (NA)	
Sample Order Entry By: [signature]	625 & Phenol samples checked for chlorine? Y or (NA)	
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or (NA)	
If no, explain:		

Sample Custody

Relinquished by: [signature]	Date/Time: 3/11/09 1800	Received by: [signature]	Date/Time: 3/12/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 1.9 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

CHAIN OF CUSTODY

15589

Page 1 of 1

146

109

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Cooler

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5706 Cleveland St Ste 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: ML. Ott	Are high concentrations expected? (Y) or N? If yes, which ID(s)? * GW012A and GW012AP

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC	TOC 40ml VIAL	MEE RSK 175	Total Metals ILM05.3	Dissolved Metals ILM05.3	Alk, Chloride, Sulfate	DISS MTL	Lab Sample Info (Lab Use): Total Metals	Diss. Metals	TDC
0903044-20	YS01-GW012A-0309	3/12/09	1035	GW	10	X		X	X			3	2	2	1	1	1	0903045-16	2	2	2
0903044-24	YS01-GW012AP-0309	3/12/09	1050	GW	5	X		X				3	-	-	TD*	1	*	0903045-20	2	2	
0903044-21	YS01-GW021-0309	3/12/09	1415	GW	10	X		X	X			3	2	2	1	1	1	0903045-17	2	2	2
0903044-22	YS01-GW017-0309	3/12/09	1540	GW	10	X		X	X			3	2	2	1	1	1	0903045-18	2	2	2
-23	YS01-EB01-031209	3/12/09	1620	EB	5	X		X				3	-	-	D*	1	*	0903045-19	2	2	
-25	YS01-TB01-031209	3/12/09	1615	TB	3	X						3	-	-	-	-	-	-			

*rec'd total metals for YS01-GW012AP-0309 & YS01-EB01-031209 (the alk/Cl/SO4 columns accidentally marked) ML Ott 3/13/09

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition: (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

1) PH 12-13 on GW012A and GW012AP
2) Double Preservative GW012A and GW012AP
Note

Sample Custody

Relinquished by:	Date/Time: 3/12/09 1800	Received by:	Date/Time: 3/13/09 0945		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.4 °C		

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 10, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample IDs were written incorrectly on COC 15621, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-EB01030909	YS01-EB01-030909	3/9/2009	16:15
YS01-FB-030909	YS01-FB01-030909	3/9/2009	

Several analyses were incorrectly requested for various samples on COC 15621, and need to be cancelled. Please cancel the analyses listed with the samples below:

Sample ID	Date Coll'd	Time Coll'd	Chloride, Sulfate 300.0	MEE RSK-175	Alkalinity 310.1	TOC 9060/Lloyd Kahn
YS01-EB01-030909	3/9/2009	16:15	X	X	X	X
YS01-FB01-030909	3/9/2009		X	X	X	X
YS01-EB02-030909	3/9/2009	16:30	X	X	X	X

The sample time is missing for sample YS01-FB01-030909 on COC 15621. Please use the sample time indicated on the sample bottle.

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Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 030/9-12/09
Received Date: 03/10-13/09
Analysis Dates: 03/17-25/09

Cooler Temps: 0.4-3.8°C

All holding time requirements were met. All sample vials for YS01-TB031009 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS01-TB01-031009, YS01-TB01-031209, YS01-TB01-030909 and YS01-TB01-031109- trip blanks; YS01-EB02-031009, YS01-EB01-031209, YS01-EB01-030909, YS01-EB02-030909, YS01-EB01-031109, YS01-EB02-031109 and YS01-EB01-031009- equipment blanks; YS01-FB01-030909- field blank.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDH	methylene chloride	0.13J ug/L	0.50 ug/L	1.3 ug/L
VBLKHB	methylene chloride	0.11J	0.50	1.1
VBLKGY	methylene chloride	0.11J	0.50	1.1
VBLKGV	methylene chloride	0.11J	0.50	1.1
YS01-TB01-031009	methylene chloride	0.17J	2.5	1.7
YS01-TB01-031209	acetone	2.2J	2.5	22
YS01-TB01-030909	methylene chloride	0.14J	2.5	1.4
YS01-TB01-031109	methylene chloride	0.14J	2.5	1.4
YS01-EB01-031209	acetone	50	2.5	500
	methylene chloride	2.0	0.5	20
	toluene	0.72	0.5	3.6
YS01-EB01-030909	acetone	59	2.5	590
	methylene chloride	3.3	0.5	33
	2-butanone	11	0.5	110
	toluene	1.2	0.5	6
YS01-EB02-030909	acetone	62	2.5	620
	methylene chloride	3.3	0.5	33
	toluene	1.1	0.5	5.5
YS01-EB01-031109	acetone	41	2.5	410
	methylene chloride	0.17J	0.5	1.7
YS01-EB02-031009	acetone	47	2.5	470
	methylene chloride	0.53	0.5	5.3
	toluene	0.2J	0.5	1.0
	cyclohexane	0.1J	0.5	0.5
YS01-EB01-031009	acetone	54	2.5	540
	methylene chloride	1.2	0.5	12
	toluene	0.45J	0.5	2.25
YS01-EB02-031109	acetone	39	2.5	390
	methylene chloride	0.16J	0.5	1.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW19-0309, YS01-GW18-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309	methylene chloride	B	BL
YS01-GW05-0309, YS01-GW12A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	acetone	B	BL

Sample ID	Compound	Q Flag	Q-code
YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	toluene	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS01-GW23-0309—no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for sample YS01-GW12A-0309—qualifications required, see attached sheet.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Massaro **Date:** 6/2/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C25004-TUN191 BFB Injection Date: 03/25/09

Instrument ID: 5975HPMS91 BFB Injection Time: 1140

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.2
75	30.0 - 60.0% of mass 95	48.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	Greater than 50.0% of mass 95	71.3
175	5.0 - 9.0% of mass 174	5.1 (7.1)1
176	95.0 - 101.0% of mass 174	70.8 (99.3)1
177	5.0 - 9.0% of mass 176	4.8 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9C25004-CAL	9C25004-CAL291	03/25/09	1236
02	VSTD0.5	9C25004-CAL	9C25004-CAL191	03/25/09	1303
03	VSTD010	9C25004-CAL	9C25004-CAL491	03/25/09	1329
04	VSTD025	9C25004-CAL	9C25004-CAL591	03/25/09	1356
05	VSTD005	9C25004-CAL	9C25004-CAL3R9	03/25/09	1423
06	VBLKHK	9032514-BLK	9032514-BLK191	03/25/09	1517
07	VHKLCS	9032514-BS1	9032514-BS191	03/25/09	1558
08	VHKLCSD	9032514-BSD	9032514-BSD191	03/25/09	1625
09	YS01-EB02-031109	0903044-18	0903044-18R291	03/25/09	1652
10	YS01-GW21-0309	0903044-21	0903044-21R91	03/25/09	1719
11	YS01-GW17-0309	0903044-22	0903044-22R91	03/25/09	1745
12	YS01-EB01-031209	0903044-23	0903044-23R91	03/25/09	1812
13	YS01-GW12A-0309	0903044-20	0903044-20D291	03/25/09	1839
14	YS01-GW12AP-0309	0903044-24	0903044-24D291	03/25/09	1906
15	YS01-TB01-031209	0903044-25	0903044-25R291	03/25/09	1932
16					
17					
18					
19					
20					
21					
22					

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5975HPMS91 Calibration Date(s): 03/25/09 03/25/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1236 1423

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.51639363	6.463	15.000
Chloromethane	AVRG		0.28866206	6.278	15.000
Vinyl Chloride	AVRG		0.21510427	4.544	30.000
Bromomethane	AVRG		0.11990001	6.429	15.000
Chloroethane	AVRG		0.09942060	5.858	15.000
Trichlorofluoromethane	AVRG		0.31945817	5.740	15.000
1,1-Dichloroethene	AVRG		0.30880241	7.986	30.000
Carbon disulfide	AVRG		1.15931112	3.973	15.000
1,1,2-trichloro-1,2,2-triflu	LINR	-0.0933805	6.67395608	0.9997276	0.9950000
Acetone	LINR	-0.6546255	48.4616942	0.9998817	0.9950000
Methyl acetate	AVRG		0.17969017	5.744	15.000
Methylene Chloride	AVRG		0.25291476	6.909	15.000
trans-1,2-Dichloroethene	AVRG		0.34305477	3.923	15.000
Methyl-tert-butyl ether	AVRG		0.41780166	5.781	15.000
1,1-Dichloroethane	AVRG		0.59742005	2.304	15.000
cis-1,2-Dichloroethene	AVRG		0.31135818	2.133	15.000
2-butanone	AVRG		0.03784098	2.520	15.000
Chloroform	AVRG		0.54048274	3.736	30.000
1,1,1-Trichloroethane	AVRG		0.54456031	8.187	15.000
Carbon Tetrachloride	AVRG		0.46926736	8.828	15.000
Benzene	AVRG		1.33049463	4.758	15.000
1,2-Dichloroethane	AVRG		0.25787247	2.332	15.000
Trichloroethene	LINR	0.03136040	3.07949233	0.9985392	0.9950000
1,2-Dichloropropane	AVRG		0.29017511	3.920	30.000
Bromodichloromethane	AVRG		0.32642963	3.737	15.000
cis-1,3-Dichloropropene	AVRG		0.36817730	4.318	15.000
4-Methyl-2-pentanone	AVRG		0.14419064	3.697	15.000
Toluene	AVRG		1.28461479	9.983	30.000
trans-1,3-Dichloropropene	AVRG		0.47591574	3.932	15.000
1,1,2-Trichloroethane	AVRG		0.21322162	5.547	15.000
Tetrachloroethene	LINR	0.02115304	2.59666488	0.9978995	0.9950000
2-hexanone	AVRG		0.10273527	1.959	15.000
Dibromochloromethane	AVRG		0.24403015	4.680	15.000
1,2-Dibromoethane	AVRG		0.18977112	5.086	15.000
Chlorobenzene	AVRG		1.25921926	10.184	15.000
Ethylbenzene	AVRG		0.77881791	12.963	30.000
m,p-Xylene	AVRG		0.95544407	12.032	15.000
o-Xylene	AVRG		0.87243378	11.139	15.000
Styrene	AVRG		1.34392039	6.985	15.000
Bromoform	AVRG		0.10959230	8.058	15.000
Isopropyl Benzene	AVRG		2.41398611	14.188	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.51679800	6.821	15.000
1,3-Dichlorobenzene	LINR	0.00336942	0.52854731	0.9987682	0.9950000
1,4-Dichlorobenzene	LINR	0.00147604	0.53771092	0.9989098	0.9950000

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C17003-TUN173 BFB Injection Date: 03/17/09

Instrument ID: 5972HP73 BFB Injection Time: 1027

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.1
75	30.0 - 60.0% of mass 95	41.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	87.3
175	5.0 - 9.0% of mass 174	6.5 (7.5)1
176	95.0 - 101.0% of mass 174	86.7 (99.2)1
177	5.0 - 9.0% of mass 176	5.7 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C17003-CCV	9C17003-CCV173	03/17/09	1058
02	VBLKGV	9031706-BLK	9031706-BLK173	03/17/09	1148
03	VGVLCS	9031706-BS1	9031706-BS173	03/17/09	1237
04	VGVLCSD	9031706-BSD	9031706-BSD173	03/17/09	1307
05	YS01-GW13-0309	0903044-01	0903044-0173	03/17/09	2115
06	YS01-GW13A-0309	0903044-02	0903044-0273	03/17/09	2144
07					
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12					
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22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/17/09 Time: 1058

Lab File ID: 9C17003-CCV173 Init. Calib. Date(s): 03/16/09 03/16/09

Init. Calib. Times: 1056 1253

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.7319000	0.6820407	0.6820407	0.001	-6.81	90.00	AVRG
Chloromethane	0.4225100	0.2769583	0.2769583	0.1	-34.45	90.00	AVRG
Vinyl Chloride	0.2011900	0.1796423	0.1796423	0.001	-10.71	20.00	AVRG
Bromomethane	0.1105000	0.0503219	0.0503219	0.001	-54.46	90.00	AVRG
Chloroethane	0.0800500	0.0902954	0.0902954	0.001	12.80	90.00	AVRG
Trichlorofluoromethane	0.2682700	0.2660785	0.2660785	0.001	-0.82	90.00	AVRG
1,1-Dichloroethene	0.3854600	0.3805809	0.3805809	0.001	-1.26	20.00	AVRG
Carbon disulfide	1.4775200	1.4717839	1.4717839	0.001	-0.39	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	130.66049	125.00000	0.2376907	0.001	4.53	90.00	LINR
Acetone	560.34575	625.00000	0.0328389	0.001	-10.34	90.00	LINR
Methyl acetate	0.2772100	0.2464665	0.2464665	0.001	-11.09	90.00	AVRG
Methylene Chloride	0.3771000	0.3657030	0.3657030	0.001	-3.02	90.00	AVRG
trans-1,2-Dichloroethene	0.4291000	0.4351790	0.4351790	0.001	1.42	90.00	AVRG
Methyl-tert-butyl ether	0.5190000	0.5073967	0.5073967	0.001	-2.24	90.00	AVRG
,1-Dichloroethane	0.7121300	0.6911135	0.6911135	0.1	-2.95	90.00	AVRG
cis-1,2-Dichloroethene	0.4020100	0.4137655	0.4137655	0.001	2.92	90.00	AVRG
2-butanone	0.0626600	0.0538273	0.0538273	0.001	-14.10	90.00	AVRG
Chloroform	0.6590400	0.6559286	0.6559286	0.001	-0.47	20.00	AVRG
1,1,1-Trichloroethane	0.5893100	0.5629078	0.5629078	0.001	-4.48	90.00	AVRG
Carbon Tetrachloride	0.5183300	0.5139568	0.5139568	0.001	-0.84	90.00	AVRG
Benzene	1.4415300	1.4369423	1.4369423	0.001	-0.32	90.00	AVRG
1,2-Dichloroethane	0.2977200	0.2914793	0.2914793	0.001	-2.10	90.00	AVRG
Trichloroethene	139.83859	125.00000	0.4582850	0.001	11.87		LINR
1,2-Dichloropropane	0.3223400	0.3228950	0.3228950	0.001	0.17	20.00	AVRG
Bromodichloromethane	0.4336000	0.4229555	0.4229555	0.001	-2.45	90.00	AVRG
cis-1,3-Dichloropropene	0.4621700	0.4628064	0.4628064	0.001	0.14	90.00	AVRG
4-Methyl-2-pentanone	0.2172300	0.1767315	0.1767315	0.001	-18.64	90.00	AVRG
Toluene	1.3669000	1.1969227	1.1969227	0.001	-12.44	20.00	AVRG
trans-1,3-Dichloropropene	0.5348100	0.5012160	0.5012160	0.001	-6.28	90.00	AVRG
1,1,2-Trichloroethane	0.2679800	0.2549762	0.2549762	0.001	-4.85	90.00	AVRG
Tetrachloroethene	125.63079	125.00000	0.4677793	0.001	0.50	90.00	LINR
2-hexanone	0.1515900	0.1212575	0.1212575	0.001	-20.01	90.00	AVRG
Dibromochloromethane	0.3825100	0.3612713	0.3612713	0.001	-5.55	90.00	AVRG
1,2-Dibromoethane	0.2775600	0.2725856	0.2725856	0.001	-1.79	90.00	AVRG
Chlorobenzene	1.3739800	1.2592246	1.2592246	0.3	-8.35	90.00	AVRG
Ethylbenzene	0.7995300	0.6806167	0.6806167	0.001	-14.87	20.00	AVRG
m,p-Xylene	237.31970	250.00000	0.8342510	0.001	-5.07	90.00	LINR
o-Xylene	119.67827	125.00000	0.8031077	0.001	-4.26	90.00	LINR
Styrene	117.29986	125.00000	1.2505415	0.001	-6.16	90.00	LINR
Bromoform	0.2006200	0.1902802	0.1902802	0.1	-5.15	90.00	AVRG
Isopropyl Benzene	117.79794	125.00000	2.1094264	0.001	-5.76	90.00	LINR
1,1,2,2-Tetrachloroethane	0.7156100	0.6413283	0.6413283	0.3	-10.38	90.00	AVRG

J-MDL
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FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C18003-TUN173 BFB Injection Date: 03/18/09

Instrument ID: 5972HP73 BFB Injection Time: 1219

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.9
75	30.0 - 60.0% of mass 95	41.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	86.5
175	5.0 - 9.0% of mass 174	6.3 (7.3)1
176	95.0 - 101.0% of mass 174	84.6 (97.8)1
177	5.0 - 9.0% of mass 176	5.8 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C18003-CCV	9C18003-CCV173	03/18/09	1249
02	VBLKGY	9031808-BLK	9031808-BLK173	03/18/09	1343
03	VGYLCS	9031808-BS1	9031808-BS173	03/18/09	1424
04	VGYLCSD	9031808-BSD	9031808-BSD173	03/18/09	1453
05	YS01-FB01-030909	0903044-03	0903044-03R73	03/18/09	1642
06	YS01-EB01-030909	0903044-04	0903044-0473	03/18/09	1711
07	YS01-EB02-030909	0903044-05	0903044-0573	03/18/09	1740
08	YS01-GW23-0309	0903044-07	0903044-0773	03/18/09	1846
09	YS01-GW24-0309	0903044-08	0903044-0873	03/18/09	1915
10	YS01-GW05-0309	0903044-09	0903044-0973	03/18/09	1945
11	YS01-GW25-0309	0903044-10	0903044-1073	03/18/09	2014
12	YS01-GW05A-0309	0903044-11	0903044-1173	03/18/09	2043
13	YS01-EB01-031009	0903044-12	0903044-1273	03/18/09	2112
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/18/09 Time: 1249

Lab File ID: 9C18003-CCV173 Init. Calib. Date(s): 03/16/09 03/16/09

Init. Calib. Times: 1056 1253

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.7319000	0.7460696	0.7460696	0.001	1.94	90.00	AVRG	
Chloromethane	0.4225100	0.3686804	0.3686804	0.1	-12.74	90.00	AVRG	
Vinyl Chloride	0.2011900	0.2123556	0.2123556	0.001	5.55	20.00	AVRG	
Bromomethane	0.1105000	0.0952874	0.0952874	0.001	-13.77	90.00	AVRG	
Chloroethane	0.0800500	0.0843668	0.0843668	0.001	5.39	90.00	AVRG	
Trichlorofluoromethane	0.2682700	0.2831399	0.2831399	0.001	5.54	90.00	AVRG	
1,1-Dichloroethene	0.3854600	0.3979480	0.3979480	0.001	3.24	20.00	AVRG	
Carbon disulfide	1.4775200	1.5197566	1.5197566	0.001	2.86	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	129.18737	125.00000	0.2351260	0.001	3.35	90.00	LINR	
Acetone	566.58893	625.00000	0.0331771	0.001	-9.34	90.00	LINR	L/R
Methyl acetate	0.2772100	0.2498506	0.2498506	0.001	-9.87	90.00	AVRG	
Methylene Chloride	0.3771000	0.3803656	0.3803656	0.001	0.86	90.00	AVRG	
trans-1,2-Dichloroethene	0.4291000	0.4553799	0.4553799	0.001	6.12	90.00	AVRG	
ethyl-tert-butyl ether	0.5190000	0.4925409	0.4925409	0.001	-5.10	90.00	AVRG	
1,1-Dichloroethane	0.7121300	0.7019855	0.7019855	0.1	-1.42	90.00	AVRG	
cis-1,2-Dichloroethene	0.4020100	0.4119369	0.4119369	0.001	2.47	90.00	AVRG	
2-butanone	0.0626600	0.0522070	0.0522070	0.001	-16.68	90.00	AVRG	OK JLM 06209
Chloroform	0.6590400	0.6562316	0.6562316	0.001	-0.43	20.00	AVRG	
1,1,1-Trichloroethane	0.5893100	0.5616000	0.5616000	0.001	-4.70	90.00	AVRG	
Carbon Tetrachloride	0.5183300	0.4894290	0.4894290	0.001	-5.58	90.00	AVRG	
Benzene	1.4415300	1.4621045	1.4621045	0.001	1.43	90.00	AVRG	
1,2-Dichloroethane	0.2977200	0.2908083	0.2908083	0.001	-2.32	90.00	AVRG	
Trichloroethene	130.96074	125.00000	0.4294000	0.001	4.77	90.00	LINR	
1,2-Dichloropropane	0.3223400	0.3159454	0.3159454	0.001	-1.98	20.00	AVRG	
Bromodichloromethane	0.4336000	0.4166919	0.4166919	0.001	-3.90	90.00	AVRG	
cis-1,3-Dichloropropene	0.4621700	0.4534150	0.4534150	0.001	-1.89	90.00	AVRG	
4-Methyl-2-pentanone	0.2172300	0.1742283	0.1742283	0.001	-19.80	90.00	AVRG	
Toluene	1.3669000	1.2283982	1.2283982	0.001	-10.13	20.00	AVRG	
trans-1,3-Dichloropropene	0.5348100	0.4750323	0.4750323	0.001	-11.18	90.00	AVRG	
1,1,2-Trichloroethane	0.2679800	0.2458359	0.2458359	0.001	-8.26	90.00	AVRG	
Tetrachloroethene	124.45260	125.00000	0.4636494	0.001	-0.44	90.00	LINR	
2-hexanone	0.1515900	0.1173629	0.1173629	0.001	-22.58	90.00	AVRG	JLM 06209
Dibromochloromethane	0.3825100	0.3509665	0.3509665	0.001	-8.25	90.00	AVRG	
1,2-Dibromoethane	0.2775600	0.2551653	0.2551653	0.001	-8.07	90.00	AVRG	
Chlorobenzene	1.3739800	1.2619773	1.2619773	0.3	-8.15	90.00	AVRG	
Ethylbenzene	0.7995300	0.6833664	0.6833664	0.001	-14.53	20.00	AVRG	
m,p-Xylene	242.89151	250.00000	0.8523000	0.001	-2.84	90.00	LINR	
o-Xylene	120.08860	125.00000	0.8056618	0.001	-3.93	90.00	LINR	
Styrene	115.16031	125.00000	1.2290736	0.001	-7.87	90.00	LINR	
Bromoform	0.2006200	0.1837092	0.1837092	0.1	-8.43	90.00	AVRG	
Isopropyl Benzene	111.33258	125.00000	2.0019546	0.001	-10.93	90.00	LINR	
1,2,2-Tetrachloroethane	0.7156100	0.6602770	0.6602770	0.3	-7.73	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C19002-TUN173 BFB Injection Date: 03/19/09

Instrument ID: 5972HP73 BFB Injection Time: 0929

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.1
75	30.0 - 60.0% of mass 95	41.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	87.6
175	5.0 - 9.0% of mass 174	6.4 (7.3)1
176	95.0 - 101.0% of mass 174	86.4 (98.7)1
177	5.0 - 9.0% of mass 176	5.3 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C19002-CCV	9C19002-CCV173	03/19/09	1009
02	VBLKHB	9031905-BLK	9031905-BLK173	03/19/09	1055
03	VHBLCS	9031905-BS1	9031905-BS173	03/19/09	1137
04	YS01-TB01-030909	0903044-06	0903044-06R73	03/19/09	1248
05	YS01-GW23-0309MS	9031905-MS1	9031905-MS173	03/19/09	1317
06	YS01-GW23-0309MSD	9031905-MSD	9031905-MSD173	03/19/09	1346
07	YS01-GW18-0309	0903044-15	0903044-1573	03/19/09	1536
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/19/09 Time: 1009

Lab File ID: 9C19002-CCV173 Init. Calib. Date(s): 03/16/09 03/16/09

Init. Calib. Times: 1056 1253

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.7319000	0.7504972	0.7504972	0.001	2.54	90.00	AVRG	
Chloromethane	0.4225100	0.3835121	0.3835121	0.1	-9.23	90.00	AVRG	
Vinyl Chloride	0.2011900	0.2103804	0.2103804	0.001	4.57	20.00	AVRG	
Bromomethane	0.1105000	0.1018361	0.1018361	0.001	-7.84	90.00	AVRG	
Chloroethane	0.0800500	0.0878708	0.0878708	0.001	9.77	90.00	AVRG	
Trichlorofluoromethane	0.2682700	0.3099919	0.3099919	0.001	15.55	90.00	AVRG	
1,1-Dichloroethene	0.3854600	0.4094750	0.4094750	0.001	6.23	20.00	AVRG	
Carbon disulfide	1.4775200	1.5666660	1.5666660	0.001	6.03	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	135.18954	125.00000	0.2455758	0.001	8.15	90.00	LINR	
Acetone	548.53982	625.00000	0.0321995	0.001	-12.23	90.00	LINR	4/R
Methyl acetate	0.2772100	0.2447727	0.2447727	0.001	-11.70	90.00	AVRG	
Methylene Chloride	0.3771000	0.3877469	0.3877469	0.001	2.82	90.00	AVRG	
rans-1,2-Dichloroethene	0.4291000	0.4741830	0.4741830	0.001	10.51	90.00	AVRG	
thyl-tert-butyl ether	0.5190000	0.4890422	0.4890422	0.001	-5.77	90.00	AVRG	
1,1-Dichloroethane	0.7121300	0.7192020	0.7192020	0.1	0.99	90.00	AVRG	
cis-1,2-Dichloroethene	0.4020100	0.4206349	0.4206349	0.001	4.63	90.00	AVRG	
2-butanone	0.0626600	0.0534506	0.0534506	0.001	-14.70	90.00	AVRG	
Chloroform	0.6590400	0.6840092	0.6840092	0.001	3.79	20.00	AVRG	
1,1,1-Trichloroethane	0.5893100	0.5783907	0.5783907	0.001	-1.85	90.00	AVRG	
Carbon Tetrachloride	0.5183300	0.5247704	0.5247704	0.001	1.24	90.00	AVRG	
Benzene	1.4415300	1.4713535	1.4713535	0.001	2.07	90.00	AVRG	
1,2-Dichloroethane	0.2977200	0.2941262	0.2941262	0.001	-1.21	90.00	AVRG	
Trichloroethene	137.04665	125.00000	0.4492158	0.001	9.64	90.00	LINR	
1,2-Dichloropropane	0.3223400	0.3173105	0.3173105	0.001	-1.56	20.00	AVRG	
Bromodichloromethane	0.4336000	0.4186299	0.4186299	0.001	-3.45	90.00	AVRG	
cis-1,3-Dichloropropene	0.4621700	0.4477757	0.4477757	0.001	-3.11	90.00	AVRG	
4-Methyl-2-pentanone	0.2172300	0.1710872	0.1710872	0.001	-21.24	90.00	AVRG	J MOD
Toluene	1.3669000	1.2768079	1.2768079	0.001	-6.59	20.00	AVRG	
trans-1,3-Dichloropropene	0.5348100	0.4913925	0.4913925	0.001	-8.12	90.00	AVRG	
1,1,2-Trichloroethane	0.2679800	0.2668453	0.2668453	0.001	-0.42	90.00	AVRG	
Tetrachloroethene	138.75877	125.00000	0.5137967	0.001	11.01	90.00	LINR	J MOD
2-hexanone	0.1515900	0.1161767	0.1161767	0.001	-23.36	90.00	AVRG	
Dibromochloromethane	0.3825100	0.3864673	0.3864673	0.001	1.03	90.00	AVRG	
1,2-Dibromoethane	0.2775600	0.2755567	0.2755567	0.001	-0.72	90.00	AVRG	
Chlorobenzene	1.3739800	1.3374975	1.3374975	0.3	-2.66	90.00	AVRG	
Ethylbenzene	0.7995300	0.7129471	0.7129471	0.001	-10.83	20.00	AVRG	
m,p-Xylene	249.73985	250.00000	0.8744239	0.001	-0.10	90.00	LINR	
o-Xylene	124.68872	125.00000	0.8342949	0.001	-0.25	90.00	LINR	
Styrene	121.66891	125.00000	1.2943797	0.001	-2.66	90.00	LINR	
Bromoform	0.2006200	0.2021353	0.2021353	0.1	0.76	90.00	AVRG	
Isopropyl Benzene	121.33837	125.00000	2.1682781	0.001	-2.93	90.00	LINR	
1,2,2-Tetrachloroethane	0.7156100	0.6475017	0.6475017	0.3	-9.52	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9C20008-TUN173 BFB Injection Date: 03/20/09

Instrument ID: 5972HP73 BFB Injection Time: 2153

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.5
75	30.0 - 60.0% of mass 95	41.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.2
175	5.0 - 9.0% of mass 174	5.8 (7.0)1
176	95.0 - 101.0% of mass 174	78.7 (95.8)1
177	5.0 - 9.0% of mass 176	5.1 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C20008-CCV	9C20008-CCV173	03/20/09	2212
02	VBLKDH	9032035-BLK	9032035-BLK173	03/20/09	2243
03	VDHLCS	9032035-BS1	9032035-BS173	03/20/09	2312
04	VDHLCSD	9032035-BSD	9032035-BSD173	03/20/09	2341
05	YS01-EB02-031009	0903044-13	0903044-13R273	03/21/09	0011
06	YS01-TB01-031009	0903044-14	0903044-14R73	03/21/09	0040
07	YS01-GW19-0309	0903044-16	0903044-16R73	03/21/09	0109
08	YS01-EB01-031109	0903044-17	0903044-17R73	03/21/09	0138
09	YS01-TB01-031109	0903044-19	0903044-19R73	03/21/09	0237
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

ab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/20/09 Time: 2212

Lab File ID: 9C20008-CCV173 Init. Calib. Date(s): 03/20/09 03/20/09

Init. Calib. Times: 1215 1610

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.8162600	0.7841033	0.7841033	0.001	-3.94	90.00	AVRG
Chloromethane	0.4439300	0.4551617	0.4551617	0.1	2.53	90.00	AVRG
Vinyl Chloride	0.2661400	0.2510384	0.2510384	0.001	-5.67	20.00	AVRG
Bromomethane	0.1487100	0.1424899	0.1424899	0.001	-4.18	90.00	AVRG
Chloroethane	122.56517	125.00000	0.1014989	0.001	-1.95	90.00	LINR
Trichlorofluoromethane	0.3816400	0.3544199	0.3544199	0.001	-7.13	90.00	AVRG
1,1-Dichloroethene	0.4396200	0.3773335	0.3773335	0.001	-14.17	20.00	AVRG
Carbon disulfide	1.7279500	1.6977688	1.6977688	0.001	-1.75	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2763400	0.2516228	0.2516228	0.001	-8.94	90.00	AVRG
Acetone	637.99873	625.00000	0.0371752	0.001	2.08	90.00	LINR
Methyl acetate	0.2819700	0.2791910	0.2791910	0.001	-0.98	90.00	AVRG
Methylene Chloride	0.4508000	0.4228525	0.4228525	0.001	-6.20	90.00	AVRG
ans-1,2-Dichloroethene	0.5029500	0.4870507	0.4870507	0.001	-3.16	90.00	AVRG
hyl-tert-butyl ether	0.4907600	0.4463504	0.4463504	0.001	-9.05	90.00	AVRG
1,1-Dichloroethane	0.8110400	0.7935451	0.7935451	0.1	-2.16	90.00	AVRG
cis-1,2-Dichloroethene	0.4554400	0.4299712	0.4299712	0.001	-5.59	90.00	AVRG
2-butanone	0.0550400	0.0508076	0.0508076	0.001	-7.69	90.00	AVRG
Chloroform	0.7572800	0.7472286	0.7472286	0.001	-1.33	20.00	AVRG
1,1,1-Trichloroethane	0.6288600	0.6167050	0.6167050	0.001	-1.93	90.00	AVRG
Carbon Tetrachloride	0.5638200	0.5447692	0.5447692	0.001	-3.38	90.00	AVRG
Benzene	1.6358700	1.5759500	1.5759500	0.001	-3.66	90.00	AVRG
1,2-Dichloroethane	0.3291600	0.3427674	0.3427674	0.001	4.13	90.00	AVRG
Trichloroethene	0.4756900	0.4225157	0.4225157	0.001	-11.18	90.00	AVRG
1,2-Dichloropropane	0.3663600	0.3822846	0.3822846	0.001	4.35	20.00	AVRG
Bromodichloromethane	0.4541900	0.4829775	0.4829775	0.001	6.34	90.00	AVRG
cis-1,3-Dichloropropene	0.4709600	0.4434142	0.4434142	0.001	-5.85	90.00	AVRG
4-Methyl-2-pentanone	0.1818700	0.1738173	0.1738173	0.001	-4.43	90.00	AVRG
Toluene	1.3490100	1.2419227	1.2419227	0.001	-7.94	20.00	AVRG
trans-1,3-Dichloropropene	0.5366200	0.5327586	0.5327586	0.001	-0.72	90.00	AVRG
1,1,2-Trichloroethane	0.2962900	0.2710558	0.2710558	0.001	-8.52	90.00	AVRG
Tetrachloroethene	0.5575200	0.4616250	0.4616250	0.001	-17.20	90.00	AVRG
2-hexanone	0.1163300	0.1116186	0.1116186	0.001	-4.05	90.00	AVRG
Dibromochloromethane	0.3936600	0.3566333	0.3566333	0.001	-9.40	90.00	AVRG
1,2-Dibromoethane	0.2873000	0.2654666	0.2654666	0.001	-7.60	90.00	AVRG
Chlorobenzene	1.4585300	1.3049100	1.3049100	0.3	-10.53	90.00	AVRG
Ethylbenzene	0.7799200	0.6836509	0.6836509	0.001	-12.34	20.00	AVRG
m,p-Xylene	0.9446000	0.8321592	0.8321592	0.001	-11.90	90.00	AVRG
o-Xylene	0.8895900	0.8044332	0.8044332	0.001	-9.57	90.00	AVRG
Styrene	1.3593900	1.2277085	1.2277085	0.001	-9.69	90.00	AVRG
Bromoform	0.1954500	0.1875450	0.1875450	0.1	-4.04	90.00	AVRG
Isopropyl Benzene	2.3713400	2.0517388	2.0517388	0.001	-13.48	90.00	AVRG
,2,2-Tetrachloroethane	0.7104500	0.6869292	0.6869292	0.3	-3.31	90.00	AVRG

4R

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Instrument ID: 5972HP73 Calibration Date: 03/20/09 Time: 2212

Lab File ID: 9C20008-CCV173 Init. Calib. Date(s): 03/20/09 03/20/09

Init. Calib. Times: 1215 1610

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
1,3-Dichlorobenzene	2.5578800	2.0055570	2.0055570	0.001	-21.59	90.00	AVRG	J no D
1,4-Dichlorobenzene	2.5951400	2.0361005	2.0361005	0.001	-21.54	90.00	AVRG	J no D
1,2-Dichlorobenzene	2.0074900	1.6329281	1.6329281	0.001	-18.66	90.00	AVRG	
1,2-Dibromo-3-Chloropropane	121.81929	125.00000	0.0788096	0.001	-2.54	90.00	LINR	
1,2,4-Trichlorobenzene	1.2426400	0.9601786	0.9601786	0.001	-22.73	90.00	AVRG	J no D
1,2-Dichloroethene (total)	0.4792000	0.4585110	0.4585110	0.001	-4.32	90.00	AVRG	
Xylene (total)	0.8895900	0.8044332	0.8044332	0.001	-9.57	90.00	AVRG	
Cyclohexane	0.5877900	0.4659507	0.4659507	0.001	-20.73	90.00	AVRG	J
Methylcyclohexane	0.6245200	0.5190721	0.5190721	0.001	-16.88	90.00	AVRG	
Dibromofluoromethane	0.4536600	0.4849867	0.4849867	0.001	6.90	90.00	AVRG	
1,2-Dichloroethane-d4	0.2838700	0.3125682	0.3125682	0.001	10.11	90.00	AVRG	
Toluene-d8	2.1000000	2.0435108	2.0435108	0.001	-2.69	90.00	AVRG	
Bromofluorobenzene	1.4851700	1.4097082	1.4097082	0.001	-5.08	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDH

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9032035-BLK173_T Lab Sample ID: 9032035-BLK1

Date Analyzed: 03/20/09 Time Analyzed: 2243

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDHLCS	9032035-BS1	9032035-BS17	2312
02	VDHLCSD	9032035-BSD1	9032035-BSD1	2341
03	YS01-EB02-031009	0903044-13	0903044-13R2	0011
04	YS01-TB01-031009	0903044-14	0903044-14R7	0040
B-05	YS01-GW19-0309	0903044-16	0903044-16R7	0109
06	YS01-EB01-031109	0903044-17	0903044-17R7	0138
07	YS01-TB01-031109	0903044-19	0903044-19R7	0237
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COMMENTS: Methylene Chl 0.135 ug/L (0.50)

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9031905-BLK173 Lab Sample ID: 9031905-BLK1

Date Analyzed: 03/19/09 Time Analyzed: 1055

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHBLCS	9031905-BS1	9031905-BS17	1137
02	YS01-TB01-030909	0903044-06	0903044-06R7	1248
03	YS01-GW23-0309MS	9031905-MS1	9031905-MS17	1317
04	YS01-GW23-0309MSD	9031905-MSD1	9031905-MSD1	1346
B-05	YS01-GW18-0309	0903044-15	0903044-1573	1536
06				
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COMMENTS: Methylene Chl 0.11J (0.50)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKGY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9031808-BLK173_T Lab Sample ID: 9031808-BLK1

Date Analyzed: 03/18/09 Time Analyzed: 1343

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VGYLCS	9031808-BS1	9031808-BS17	1424
02	VGYLCSD	9031808-BSD1	9031808-BSD1	1453
03	YS01-FB01-030909	0903044-03	0903044-03R7	1642
04	YS01-EB01-030909	0903044-04	0903044-0473	1711
05	YS01-EB02-030909	0903044-05	0903044-0573	1740
B-06	YS01-GW23-0309	0903044-07	0903044-0773	1846
B-07	YS01-GW24-0309	0903044-08	0903044-0873	1915
B-08	YS01-GW05-0309	0903044-09	0903044-0973	1945
B-09	YS01-GW25-0309	0903044-10	0903044-1073	2014
B-10	YS01-GW05A-0309	0903044-11	0903044-1173	2043
11	YS01-EB01-031009	0903044-12	0903044-1273	2112
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COMMENTS: Methylene Chl 0.11J (0.50)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKGV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Lab File ID: 9031706-BLK173_T Lab Sample ID: 9031706-BLK1

Date Analyzed: 03/17/09 Time Analyzed: 1148

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VGVLCS	9031706-BS1	9031706-BS17	1237
02	VGVLCSD	9031706-BSD1	9031706-BSD1	1307
B 03	YS01-GW13-0309	0903044-01	0903044-0173	2115
B 04	YS01-GW13A-0309	0903044-02	0903044-0273	2144
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COMMENTS: Methylene Chl 0.11 J ug/L (0.50)

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS01-GW12A-0309
Duplicate Sample ID: YS01-GW12AP-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
cis-1,2-dichloroethene	15	28	60
trichloroethene	57	95	50
1,2-dichloroethene (total)	14	26	60
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COMMENTS: Per QAPP qualifications <25% qualifications were required.

* result below the CRQL

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0903044
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-GW13-0309, YS01-GW13A-0309, YS01-FB01-030909, YS01-EB01-030909, YS01-EB02-030909, YS01-TB01-030909, YS01-GW23-0309, YS01-GW24-0309, YS01-GW05-0309, YS01-GW25-0309, YS01-GW05A-0309, YS01-EB01-0309, YS01-EB02-031009, YS01-TB01-031009, YS01-GW18-0309, YS01-GW19-0309, YS01-EB01-031109, YS01-EB02-031109, YS01-TB01-031109, YS01-GW12A-0309, YS01-GW21-0309, YS01-GW17-0309, YS01-EB01-031209, YS01-GW12AP-0309, AND YS01-TB01-031209

The 25 aqueous samples listed above were received intact, refrigerated between 0.4°C and 3.8°C, with proper documentation, in sealed shipping containers, on March 10, 11 and 13, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903044 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, samples YS01-GW12A-0309 and YS01-GW12AP-0309 were initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9C16001-CAL173, 9C16001-CAL273, 9C16001-CAL3R73, 9C16001-CAL473, 9C16001-CAL573, 9C2003-CAL173, 9C2003-CAL273, 9C2003-CAL3R73, 9C2003-CAL573, 9C25004-CAL191 and 9C25004-CAL291, process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS01-GW23-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy

Patricia A Murphy
Senior Scientist
March 30, 2009

15621 139 131

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO 166

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.
Sampling Complete? Y or (N)

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland ST STE 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Mark L [illegible]	Are high concentrations expected? Y or (N)? If yes, which ID(s)?

Requested Analysis (include method and bottle type): V-G OLM [illegible] 40mL; * Filtered Metals 1000 mL; Metals Total 1000 mL *; Chl, Sulfate, Alk 250mL; TOC 40mL; MEE RSK 175 40mL; *

Matrices: GW - Ground water, WW - Waste water, SW - Surface water, SO - Soil/Sediment, TB - Trip Blank, RI - Rinsate, WP - Wipe, O - Other

Sample Info (Lab Use): 3/10/09 (pH?); Total metals (crossed out); Dissolved metals; DOC; Total metals; Diss metals

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOA	Filtered Metals	Metals Total	Chl, Sulfate, Alk	TOC	MEE					Total metals (crossed out)	Diss. metals	DOC	Total metals	Diss metals
~~0903044-01~~ 0903045-02	YS01-GW13-0309	3/9/09	1520	GW	10	X		X	X			3	1	1	1	2	2					<2		<2	<2	<2
~~0903044-02~~ 0903045-01	YS01-GW13A-0309	3/9/09	1540	GW	10	X		X	X			3	1	1	1	2	2					<2		<2	<2	<2
0903044-06	YS01-TB01-030909	3/9/09	1640	TB	3	X						3	–	–	–	–	–	(3) larger than Pea size				–		–	–	–
~~0903044-04~~ 0903045-03	YS01-EB01-030909	3/9/09	1615	EB	9	X		X	X			3	1	–	(1)*	(2)*	(2)*	air bubbles						–	–	<2
0903044-03	YS01-FB-030909	3/9/09	1700	FB	9							3	–	1	(1)*	(2)*	(2)*					<2		–	<2	–
~~0903044-05~~ 0903045-04	YS01-EB02-030909	3/9/09	1630	EB	9	X		X	X			3	1	–	(1)*	(2)*	(2)*	(1) MEEC EB02 was labelled EB01								<2

* analyses cancelled per Chelsea / See memo C[illegible] 3/10/09

Lab Use Only		Comments
Sample Unpacked By: [signature]	Cyanide samples checked for sulfide & chlorine? Y or (NA)	Note: Do not collect
Sample Order Entry By: [signature]	625 & Phenol samples checked for chlorine? Y or (NA)	Total Metals for
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or (NA)	Equipment Blank
If no, explain:		No Filter Metals on Field Blank

Sample Custody			
Relinquished by: [signature]	Date/Time: 3/9/09 1800	Received by: [signature]	Date/Time: 3/10/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 3.8 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 10, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample IDs were written incorrectly on COC 15621, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-EB01030909	YS01-EB01-030909	3/9/2009	16:15
YS01-FB-030909	YS01-FB01-030909	3/9/2009	

Several analyses were incorrectly requested for various samples on COC 15621, and need to be cancelled. Please cancel the analyses listed with the samples below:

Sample ID	Date Coll'd	Time Coll'd	Chloride, Sulfate 300.0	MEE RSK-175	Alkalinity 310.1	TOC 9060/Lloyd Kahn
YS01-EB01-030909	3/9/2009	16:15	X	X	X	X
YS01-FB01-030909	3/9/2009		X	X	X	X
YS01-EB02-030909	3/9/2009	16:30	X	X	X	X

The sample time is missing for sample YS01-FB01-030909 on COC 15621. Please use the sample time indicated on the sample bottle.

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Cathy Dover

From: Chelsea.Bennet@CH2M.com
Sent: Tuesday, March 10, 2009 9:07 AM
To: Cathy Dover
Subject: Incoming Samples 3/10/09
Attachments: CTF_20090310.doc

Hi Cathy,

You will be receiving coolers of samples today for Yorktown CTO-166. FedEx tracking numbers are as follows:

8546 1194 6024

There are some corrections to the COCs as noted in the attached corrections to file memo. Please make all corrections as requested in the memo. A copy of this memo should be included in the hard copy Case Narrative. Login summary reports are due within **24-hours** of sample receipt. Also, regarding sample YS01-FB01-030909, please let me know what the sample time is noted on the bottles you receive.

Please note that these samples are on a **28-Day TAT**. Please notify me immediately if you foresee any schedule delays or tardiness in result delivery.

Chelsea Bennet Leigh
Environmental Data Manager
CH2M HILL
5700 Cleveland St. Ste 101
Virginia Beach, VA 23462
Direct - 757.671.6208
Fax - 773.695.1378
www.ch2mhill.com

Solutions Without Boundaries

3 Coolers

15586

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp. CTO-166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or (N)

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: NWS Yorktown Site 1
Address: 5700 Cleveland ST STE 101	Sampling Location
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: MLOST	Are high concentrations expected? Y or (N) If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	40ml Vac pH<2 pH>3.4 *	40ml Tox 9060/LK	250 Cl, Alk, Sulfate	40ml Mee RSK 175	PL Total Metals Tuma SA	PL Dissolved Metals Tuma SA	* Methods we run SW-846	pH / Sample Info (Lab Use): TOC	TH Metals	Diss Metals
0903044-01	YS01-GW23-0309	3/10/09	0940	GW	30	X		X	X			9	6	3	6	3	3	RUN QC	<2	<2	<2
0903044-02	YS01-GW24-0309	3/10/09	1015	GW	10	X		X	X			3	2	1	2	1	1		<2	<2	<2
0903044-12	YS01-EB01-031009	3/10/09	1040	EB	5	X		X				3	-	-	-	1	1		<2	<2	<2
0903044-04	YS01-GW05-0309	3/10/09	1330	GW	10	X		X	X			3	2	1	2	1	1		<2	<2	<2
0903044-10	YS01-GW25-0309	3/10/09	1410	GW	10	X		X	X			3	2	1	2	1	1		<2	<2	<2
0903044-13	YS01-EB02-031009	3/10/09	1530	EB	5							3	-	-	-	1	1			<2	<2
0903044-14	YS01-TB 031009	3/10/09	1555	TB	3	X						3	-	-	-	-	-				
	"	YS01-TB01-031009	"																		
0903044-11	not on COC.	(YS01-GW05A-0309)		on 3/10/09 @ 1510								* 3	2	1	2	1	1		<2	<2	<2

Lab Use Only — Comments

Sample Unpacked By: Diana Byrd
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

1) YS01-GW23-0309 Bottles Labeled YS01-16W23-0309
2) RUN QC YS01-GW23-0309

* Received sample YS01-GW05A-0309 3/10/09 1510
Sample Custody YS01-TB-031009 all vials have smaller than pea size bubble DAR 3/11/09

Relinquished by:	Date/Time: 3/10/09 1800	Received by: Diana Byrd	Date/Time: 3/11/09 0900
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.4°, 1.0 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

134
142

Cathy Dover

From: Chelsea.Bennet@CH2M.com
Sent: Wednesday, March 11, 2009 7:26 AM
To: Cathy Dover
Subject: Incoming Samples
Attachments: CTF_20090311.doc

Hello,

You will be receiving coolers of samples today for Yorktown CTO-166. I believe that there may be 3 coolers, but I only have tracking numbers for two coolers. FedEx tracking numbers are as follows:

7906 5484 3362
7912 1570 1898

There are some corrections to the sample IDs as noted in the attached corrections to file memo. Please correct the Sample IDs as requested in the memo. A copy of this memo should be included in the hard copy Case Narrative. Login summary reports are due within **24-hours** of sample receipt.

Please note that these samples are on a **28-Day TAT**. Please notify me immediately if you foresee any schedule delays or tardiness in result delivery.

Thanks!

Chelsea Bennet Leigh
Environmental Data Manager
CH2M HILL
5700 Cleveland St, Ste 101
Virginia Beach, VA 23462
Direct - 757.671.6208
Fax - 773.695.1378
www.ch2mhill.com

Solutions Without Boundaries

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 11, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample ID was written incorrectly on COC 15586, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-TB-031009	YS01-TB01-031009	3/10/2009	15:55

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1 Cooler

CHAIN OF CUSTODY

15588

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CompuChem
a division of Liberty Analytical Corp. CTO-166

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: NWS Yorktown
Address: 5700 Cleveland St STE 101	Sampling Location: Site 1
City: Virginia Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671 8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: ML OST	Are high concentrations expected? Y or N? If yes, which ID(s)? No

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC SW 8260 40ml	MEE RSK 175 40ml	AIK, Chloride, Sulfate 250 ml	TOC 9060 4oz	Total Metals ILM05.3 100ml **	Dissolved Metals ILM05.3 100ml **	* parameters have specific holding times	pH (Lab Use)	Sample Info (Lab Use): Total Metals	Sample Info (Lab Use): Diss. Metals
09B3044-13	YS01-GW18-030909	3/11/09	1120	GW	10	X		X	X			3	2	1	2	1	1			<2	<2
09B3044-14	YS01-GW19-030909	3/11/09	1140	GW	10	X		X	X			3	2	1	2	1	1			<2	<2
09B3044-17	YS01-EB01-031109	3/11/09	1500	EB GW	5	X		X				3	-	-	-	1	1			<2	<2
09B3044-18	YS01-EB02-031109	3/11/09	1510	EB	5	X		X				3	-	-	-	1	1			<2	<2
09B3044-19	YS01-TB01-031109	3/11/09	1515	TB	3	X						3	-	-	-	-	1				

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain.

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 3/11/09 1600	Received by:	Date/Time: 3/12/09 0950
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 1.9 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

CHAIN OF CUSTODY

15589

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CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

1 Cooler

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: Navy Yorktown
Address: 5700 Cleveland St Ste 101	Sampling Location: Site 1
City: Virginia Bch State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennett	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: ML. Ott	Are high concentrations expected? (Y) or N? If yes, which ID(s)? * GW012A and GW012AP

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOC	TOC 9060 L/K	MEE RSK 175	Total Metals ILM05.3	Dissolved Metals ILM05.3	Alk, Chloride, Sulfate	DISS MTL	Hi Sample Info (Lab Use): Total Metals	Diss. Metals	TDS
0903044-20	YS01-GW012A-0309	3/12/09	1035	GW	10	X		X	X			3	2	2	1	1	1	0903045-16	22	22	22
0903044-21	YS01-GW012AP-0309	3/12/09	1650	GW	5	X		X				3	-	-	TD*	1	(1)*	0903045-20	22	22	
0903044-21	YS01-GW021-0309	3/12/09	1415	GW	10	X		X	X			3	2	2	1	1	1	0903045-17	22	22	22
0903044-22	YS01-GW017-0309	3/12/09	1542	GW	10	X		X	X			3	2	2	1	1	1	0903045-18	22	22	22
-23	YS01-EB01-031209	3/12/09	1620	EB	5	X		X				3	-	-	(1)*	1	(1)*	0903045-19	22	22	
-25	YS01-TB01-031209	3/12/09	1615	TB	3	X						3	-	-	-	-	-				

*rec'd total metals for YS01-GW012AP 0309 & YS01-EB01-031209 (the alk/Cl/SO4 columns accidentally marked) ML Ott 3/13/09

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

1) PH 12-13 ON GW012A and GW012AP
2) Double Preservative GW012A and GW012AP Note

Sample Custody

Relinquished by:	Date/Time: 3/12/09 1800	Received by:	Date/Time: 3/13/09 0945
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/9-3/12
Received Date: 3/10-3/13
Prep. Dates: no prep – dissolved; 3/17 ICP total; 3/16 dissolved, 3/17 total Hg
Analysis Dates: 3/18-3/19 dissolved, 3/21 total ICP; 3/18 dissolved, 3/19 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	iron	21.160B ug/L	105.8 ug/L	B	BL
	potassium	591.835B ug/L	2959.2 ug/L	B	BL
	silver	0.613B ug/L	3.065 g/L	B	BL
	sodium	316.855B ug/L	1584.275	B	BL
ICB/CCB – dissolved metals	vanadium	0.5 B ug/L	2.5 ug/L	B	BL
	copper	1.0B ug/L	5.0 ug/L	B	BL
	mercury	-0.111B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	aluminum	66B ug/L	330 ug/L	B	BL
	arsenic	2.9B ug/L	14.5 ug/L	B	BL
	beryllium	0.7B ug/L	3.5 ug/L	B	BL
YS01-EB02-031009 –dissolved	zinc	1.0B ug/L	5.0 ug/L	B	BL
YS01-EB01-031209-dissolved	zinc	2.8B ug/L	14 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW12A-0309, YS01-GW19-0309, YS01-GW23-0309	iron	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW17-0309, YS01-GW18-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	potassium	B	BL
YS01-GW13-0309, YS01-GW13A-0309, YS01-GW25-0309	silver	B	BL
YS01-GW19-0309	sodium	B	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13A-0309, YS01-GW18-0309, YS01-GW17-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	vanadium	B	BL
YS01-GW13-0309,. YS01-GW13A-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309, YS01-GW05-0309	copper	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW19-0309, YS01-GW21-0309	aluminum	B	BL
YS01-GW12AP-0309, YS01-GW19-0309, YS01-GW21-0309	arsenic	B	BL
YS01-GW21AP-0309, YS01-GW21-0309	beryllium	B	BL
YS01-GW05A-0309, YS01-GW23-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW17-0309, YS01-GW21-0309	zinc	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	-1.617B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
ICB/CCB – total metals	mercury	-0.146B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
	arsenic	2.8B ug/L	14 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	lead	L/UL	BL
all total metals field samples	mercury	L/UL	BL
YS01-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	arsenic	B	BL
YS01-GW05-0309, YS01-GW05A-0309, YS01-GW12A-0309, YS01-GW12AP-0309, YS01-GW13-0309, YS01-GW13A-0309, YS01-GW19-0309, YS01-GW21-0309, YS01-GW23-0309, YS01-GW24-0309, YS01-GW25-0309	nickel	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS01-GW23-0309 analyzed for total metals exhibited a non-compliant recovery for Fe in the MSD (using SAP QC limits of 80-120) but the MS was OK so no qualifications were required. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS01-GW23-0309 analyzed for the ICP dissolved metals exhibited compliant recoveries for all analytes with the exception of selenium (124.7/144.8). All positive results for selenium in the dissolved metals samples were qualified as biased high K. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses of samples YS01-GW23-0309 for total metals exhibited acceptable %Ds for all analytes. No qualifications were required.

The serial dilution analyses of samples YS01-GW23-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (135.1%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: YS03-GW12A-0309 Duplicate Sample ID: YS03-GW12AP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	34300	33400	3%
manganese	11300	13300	16%
sodium	7020	7530	7%

Comments: No qualifications were required.

Total Metals

Sample ID: YS01-GW12A-0309 Duplicate Sample ID: YS01-GW12AP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	720	778	8%
calcium	53500	67700	23%
iron	669	954	35%
manganese	59.8	110	59%
potassium	19200	9080	72%
sodium	10500	7350	35%

Comments: Flag Fe, Mn, K and Na as estimated J.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS01-GW13A-0309
COMPOUND: POTASSIUM
CONCENTRATION: 1660 ug/L
%Solids – na
50 ml

Raw Data result: 1664.224 ug/L

1664.224 ug/L * 0.05L/0.05L = 1664.224 ug/L

Total Metals

EPA SAMPLE ID: YS01-GW05-0309
COMPOUND: magnesium
CONCENTRATION: 17000 ug/L
%Solids – na
50 ml

Raw Data result: 17046.44 ug/L
17046.44 ug/L * 0.05L/0.05L = 17046.44 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JCleveland **Date:** 6/8/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903044

The indicated Sample Delivery Group (SDG) consisting of nineteen (19) water samples was received into the laboratory information management system (LIMS) on March 10, 11, and 13, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 3.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903044-07 ID YS01-GW23-0309S and YS01-GW23-0309SD were inside control limits for the requested analytes except iron.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903044-07 ID YS01-GW23-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903044-07 ID YS01-GW23-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
March 23, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.8	B	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.420	U	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-209.3	B	-184.0	B	-195.1	B	-188.5	B	-194.136	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	-1.617	B	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	-0.146	B	0.100	U	-0.174	B	-0.135	B	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	10.2	B	9.900	U	P
Selenium	2.8	B	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

NQ

YS01-GW23 YS01-GW33
GW13A
GW24
GW35

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 4	C	2 5	C	3 6	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			2.4	U	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	B	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-193.2	B	-200.3	B	-200.2	B	See PBLK		P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			-0.149	B	0.100	U	-0.130	B	See PBLK		CV
Nickel			0.7	U	0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.4	B	NQ		P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	3.3	U	3.3	U			P
Vanadium			0.6	U	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

YS01-GW13
GW13A
GW24
GW05

YS01-GW25
GW05S4
GW18
GW19
GW12A
GW21

GW17
GW12AP

✓ flag as noted in report

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	3175.0660		928.5754		2000.00	112.3		P
Antimony	75 - 125	514.1901		7.1103	B	500.00	101.4		P
Arsenic	75 - 125	44.0686		3.3896	B	40.00	101.7		P
Barium	75 - 125	2093.6490		21.2380	B	2000.00	103.6		P
Beryllium	75 - 125	50.6522		0.4200	U	50.00	101.3		P
Cadmium	75 - 125	50.4392		0.6400	U	50.00	100.9		P
Chromium	75 - 125	208.9497		4.9318	B	200.00	102.0		P
Cobalt	75 - 125	497.3037		1.6000	U	500.00	99.5		P
Copper	75 - 125	265.7635		1.5398	B	250.00	105.7		P
Iron	75 - 125	3064.5560		2059.6680		1000.00	100.5		P
Lead	75 - 125	21.0251		2.4135	B	20.00	93.1		P
Manganese	75 - 125	583.9935		80.9418		500.00	100.6		P
Mercury	75 - 125	1.1700		0.1000	U	1.00	117.0		CV
Nickel	75 - 125	502.3146		2.6030	B	500.00	99.9		P
Selenium	75 - 125	10.7476		2.2000	U	10.00	107.5		P
Silver	75 - 125	48.6565		0.6200	U	50.00	97.3		P
Thallium	75 - 125	43.2162		3.3000	U	50.00	86.4		P
Vanadium	75 - 125	509.3877		5.1885	B	500.00	100.8		P
Zinc	75 - 125	515.5772		10.5877	B	500.00	101.0		P

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	3340.5060		928.5754		2000.00	120.6		P
Antimony	75 - 125	517.1937		7.1103	B	500.00	102.0		P
Arsenic	75 - 125	43.5902		3.3896	B	40.00	100.5		P
Barium	75 - 125	2109.6370		21.2380	B	2000.00	104.4		P
Beryllium	75 - 125	51.1092		0.4200	U	50.00	102.2		P
Cadmium	75 - 125	51.5284		0.6400	U	50.00	103.1		P
Chromium	75 - 125	212.2576		4.9318	B	200.00	103.7		P
Cobalt	75 - 125	501.6727		1.6000	U	500.00	100.3		P
Copper	75 - 125	264.8564		1.5398	B	250.00	105.3		P
Iron	75 - 125	4303.5920		2059.6680		1000.00	224.4	N	P
Lead	75 - 125	22.4579		2.4135	B	20.00	100.2		P
Manganese	75 - 125	590.0679		80.9418		500.00	101.8		P
Mercury	75 - 125	1.1500		0.1000	U	1.00	115.0		CV
Nickel	75 - 125	508.4020		2.6030	B	500.00	101.2		P
Selenium	75 - 125	9.9515		2.2000	U	10.00	99.5		P
Silver	75 - 125	48.5473		0.6200	U	50.00	97.1		P
Thallium	75 - 125	47.3932		3.3000	U	50.00	94.8		P
Vanadium	75 - 125	515.4055		5.1885	B	500.00	102.0		P
Zinc	75 - 125	521.8187		10.5877	B	500.00	102.2		P

NQ MS OK

Comments:

SW846 - METALS

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903044

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Iron		2212.09		2059.67		200.0	76.2		P

Comments:

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903045

The indicated Sample Delivery Group (SDG) consisting of twenty (20) dissolved water samples was received into the laboratory information management system (LIMS) on March 10 and 11, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 3.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903045-05 ID YS01-GW23-0309S and YS01-GW23-0309SD were inside control limits for the requested analytes except selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903045-05 ID YS01-GW23-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903045-05 ID YS01-GW23-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

P. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
March 20, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	44.1	U	44.1	U	44.1	U	44.1	U	44.100	U	P
Antimony	2.7	U	2.7	U	2.7	U	2.7	U	2.700	U	P
Arsenic	2.8	U	2.8	U	2.8	U	2.8	U	2.800	U	P
Barium	0.2	U	0.2	U	0.2	U	0.2	B	0.200	U	P
Beryllium	-0.4	B	-0.5	B	-0.5	B	-0.4	B	-0.507	B	P
Cadmium	0.3	U	0.3	U	0.3	U	0.5	B	0.340	U	P
Calcium	31.5	U	42.1	B	31.5	U	55.0	B	31.500	U	P
Chromium	0.9	U	0.9	U	0.9	U	0.9	U	0.880	U	P
Cobalt	0.6	U	0.6	U	0.6	U	0.6	U	0.650	U	P
Copper	0.9	U	0.9	U	0.9	U	1.0	B	0.900	U	P
Iron	19.9	U	19.9	U	19.9	U	39.4	B	21.160	B	P
Lead	2.6	U	2.6	U	2.6	U	2.6	U	2.600	U	P
Magnesium	18.6	U	41.3	B	18.6	U	76.4	B	32.926	B	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.430	U	P
Mercury	-0.111	B	-0.151	B	0.100	U	0.100	U	0.100	U	CV
Nickel	1.3	U	-1.5	B	1.3	U	1.3	U	1.300	U	P
Potassium	574.0	B	582.6	B	588.2	B	592.3	B	591.835	B	P
Selenium	4.1	U	4.1	U	4.1	U	4.1	U	4.100	U	P
Silver	0.7	B	0.6	U	0.6	U	0.6	U	0.613	B	P
Sodium	214.8	U	214.8	U	226.5	B	220.0	B	316.855	B	P
Thallium	6.2	U	6.2	U	6.8	B	6.2	U	6.200	U	P
Vanadium	0.5	B	0.5	U	0.5	U	0.6	B	0.470	U	P
Zinc	0.7	U	0.7	U	0.7	U	0.7	U	0.740	U	P

Hg - all assoc.

none assoc

YS01-GW23
GW13
GW13A

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 4 1	C	5 2	C	6 3	C	Preparation Blank	C	M
Aluminum			44.1	U	-58.0	B					P
Antimony			2.7	U	2.7	U					P
Arsenic			2.8	U	2.8	U					P
Barium			0.2	U	0.2	U					P
Beryllium			-0.7	B	-0.8	B					P
Cadmium			0.3	U	0.3	U					P
Calcium			31.5	U	31.5	U					P
Chromium			0.9	U	0.9	U					P
Cobalt			0.6	U	0.6	U					P
Copper			1.0	B	1.1	B					P
Iron			19.9	U	19.9	U					P
Lead			2.6	U	2.6	U					P
Magnesium			18.6	U	18.6	U					P
Manganese			0.4	U	0.4	U					P
Mercury			-0.113	B	see ICB						CV
Nickel			1.3	U	1.3	U					P
Potassium			586.5	B	586.8	B					P
Selenium			4.1	U	4.1	U					P
Silver			0.6	U	0.6	U					P
Sodium			214.8	U	295.2	B					P
Thallium			6.2	U	6.2	U					P
Vanadium			0.5	U	0.7	B					P
Zinc			0.7	U	0.7	U					P

see PBBK

see PBBK

see PBBK

BNQ

BNQ

BNQ

YS01-GW23
13
13A

YS01-GW24
GW05
GW25
GW05A

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	44.1	U	61.0	B	66.0	B					P
Antimony	2.7	U	2.7	U	2.7	U					P
Arsenic	2.8	U	2.8	U	2.9	B					P
Barium	0.2	U	0.2	U	0.2	U					P
Beryllium	0.3	U	0.3	B	0.7	B					P
Cadmium	0.3	U	0.3	U	0.3	U					P
Calcium	31.5	U	58.8	B	32.8	B					P
Chromium	0.9	U	0.9	U	0.9	U					P
Cobalt	0.6	U	0.6	U	0.6	U					P
Copper	0.9	U	0.9	U	0.9	U					P
Iron	19.9	U	22.4	B	19.9	U					P
Lead	2.6	U	2.6	U	2.6	U					P
Magnesium	18.6	U	61.7	B	23.9	B					P
Manganese	0.4	U	0.4	U	0.4	U					P
Nickel	1.3	U	1.3	U	1.3	U					P
Potassium	581.2	B	570.9	B	588.3	B					P
Selenium	4.1	U	4.1	U	4.1	U					P
Silver	0.6	U	0.6	U	0.6	U					P
Sodium	214.8	U	214.8	U	214.8	U					P
Thallium	6.2	U	6.2	U	6.2	U					P
Vanadium	0.5	U	0.5	U	0.5	U					P
Zinc	0.7	U	0.7	U	0.7	U					P

YS01 - GW18
GW19
GW12A
GW21
GW17
GW12AP

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2018.9850		44.1000	U	2000.00	100.9		P
Antimony	75 - 125	520.7358		2.7000	U	500.00	104.1		P
Arsenic	75 - 125	43.8249		2.8000	U	40.00	109.6		P
Barium	75 - 125	2106.4210		19.6783	B	2000.00	104.3		P
Beryllium	75 - 125	49.2446		0.3200	U	50.00	98.5		P
Cadmium	75 - 125	50.7717		0.3400	U	50.00	101.5		P
Chromium	75 - 125	205.2988		0.8800	U	200.00	102.6		P
Cobalt	75 - 125	509.6381		0.6500	U	500.00	101.9		P
Copper	75 - 125	257.2584		1.0300	B	250.00	102.5		P
Iron	75 - 125	1080.9520		33.6088	B	1000.00	104.7		P
Lead	75 - 125	19.0106		2.6000	U	20.00	95.1		P
Manganese	75 - 125	577.3612		64.7983		500.00	102.5		P
Mercury	75 - 125	1.0100		0.1000	U	1.00	101.0		CV
Nickel	75 - 125	507.8190		1.3000	U	500.00	101.6		P
Selenium	75 - 125	12.4672		4.1000	U	10.00	124.7		P K+
Silver	75 - 125	45.8378		0.6100	U	50.00	91.7		P
Thallium	75 - 125	48.5403		6.2000	U	50.00	97.1		P
Vanadium	75 - 125	515.4351		0.7858	B	500.00	102.9		P
Zinc	75 - 125	516.2446		2.1862	B	500.00	102.8		P

using 80-120 QAPP

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW23-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	1986.6550		44.1000	U	2000.00	99.3		P
Antimony	75 - 125	515.7714		2.7000	U	500.00	103.2		P
Arsenic	75 - 125	44.2518		2.8000	U	40.00	110.6		P
Barium	75 - 125	2077.1590		19.6783	B	2000.00	102.9		P
Beryllium	75 - 125	48.9388		0.3200	U	50.00	97.9		P
Cadmium	75 - 125	50.7787		0.3400	U	50.00	101.6		P
Chromium	75 - 125	203.9088		0.8800	U	200.00	102.0		P
Cobalt	75 - 125	505.9548		0.6500	U	500.00	101.2		P
Copper	75 - 125	258.8393		1.0300	B	250.00	103.1		P
Iron	75 - 125	1076.5710		33.6088	B	1000.00	104.3		P
Lead	75 - 125	18.4566		2.6000	U	20.00	92.3		P
Manganese	75 - 125	572.7685		64.7983		500.00	101.6		P
Mercury	75 - 125	0.9450		0.1000	U	1.00	94.5		CV
Nickel	75 - 125	504.9712		1.3000	U	500.00	101.0		P
Selenium	75 - 125	14.4828		4.1000	U	10.00	144.8	N	P
Silver	75 - 125	46.0413		0.6100	U	50.00	92.1		P
Thallium	75 - 125	49.3416		6.2000	U	50.00	98.7		P
Vanadium	75 - 125	507.3850		0.7858	B	500.00	101.3		P
Zinc	75 - 125	512.1440		2.1862	B	500.00	102.0		P

K+

Comments:

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-GW23-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903045

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	44.10	U	220.50	U			P
Antimony	2.70	U	13.50	U			P
Arsenic	2.80	U	14.00	U			P
Barium	19.68	B	18.87	B	4.1		P
Beryllium	0.32	U	1.60	U			P
Cadmium	0.34	U	1.70	U			P
Calcium	96693.23		94733.00		2.0		P
Chromium	0.88	U	4.40	U			P
Cobalt	0.65	U	3.25	U			P
Copper	1.03	B	4.67	B	353.4		P
Iron	33.61	B	99.50	U	100.0		P
Lead	2.60	U	13.00	U			P
Magnesium	1734.76	B	1669.46	B	3.8		P
Manganese	64.80		62.72		3.2		P
Nickel	1.30	U	6.50	U			P
Potassium	1598.39	B	3758.35	B	135.1	E	P
Selenium	4.10	U	20.50	U			P
Silver	0.61	U	3.69	B	100.0		P
Sodium	6581.66		7576.93	B	15.1		P
Thallium	6.20	U	31.00	U			P
Vanadium	0.79	B	3.09	B	291.1		P
Zinc	2.19	B	3.70	U	100.0		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 0903092/0903093, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903092 and 0903093. The data validation was performed in accordance with the SW-846 8260B for volatiles and SW-846 Method 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS01-EB01-031309	0903092-03	water	X	X	X
YS01-EB01-031609	0903092-10	water	X	X	X
YS01-EB02-031609	0903092-09	water	X	X	X
YS01-FB01-031609	0903092-11	water	X	X	X
YS01-GW04-0309	0903092-07	water	X	X	X
YS01-GW04A-0309	0903092-05	water	X	X	X
YS01-GW12-0309	0903092-01	water	X	X	X
YS01-GW14-0309	0903092-02	water	X	X	X
YS01-GW22-0309	0903092-06	water	X	X	X
YS01-GW22P-0309	0903092-08	water	X	X	X
YS01-TB01-031309	0903092-04	water	X		
YS01-TB01-031609	0903092-12	water	X		
YS03-EB01-031709	0903092-17	water	X	X	X
YS03-EB02-031709	0903092-18	water	X	X	X
YS03-GW08B-0309	0903092-21	water	X	X	X
YS03-GW08BP-0309	0903092-23	water	X	X	X
YS03-GW15-0309	0903092-15	water	X	X	X
YS03-GW15A-0309	0903092-13	water	X	X	X
YS03-GW18-0309	0903092-16	water	X	X	X
YS03-GW21-0309	0903092-22	water	X	X	X
YS03-GW23-0309	0903092-20	water	X	X	X
YS03-GW26-0309	0903092-14	water	X	X	X
YS03-TB01-031709	0903092-19	water	X		
YS01-GW04A-0309 MS	0903092-05MS	water	X	X	X
YS01-GW04A-0309 MSD	0903092-05MSD	water	X	X	X

The following quality control samples were provided with this SDG: samples YS01-TB01-031309, YS03-TB01-031709 and YS01-TB01-031609-trip blanks; samples YS01-EB01-031309, YS01-EB01-031609, YS01-EB02-031609 YS03-EB01-031709 and YS03-EB02-031709-equipment blanks; sample YS01-FB01-031609-field blank; sample YS01-GW22P-0309-field duplicate of sample YS01-GW22-0309; and sample YS03-GW08BP-0309-field duplicate of sample YS03-GW08B-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Technical Holding Times	*
• Sample Condition	
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	
• Identification/Quantitation	
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

One sample contained headspace that resulted in qualifying the data as biased low.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

The matrix spike and matrix spike duplicate exhibited one high recovery that resulted in qualifying the corresponding positive result in the associated sample as estimated.

Three samples required a dilution to obtain results within the calibration range.

Total and Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The matrix spike associated with the total metals analysis exhibited non-compliant recoveries for selenium. This analyte was qualified as biased low in the associated field samples.

The serial dilution analysis exhibited non-compliant %Ds in both the total and dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ.

One of the submitted field duplicate pairs exhibited non-compliant RPDs for two analytes in both the total and dissolved analyses. These analytes were flagged as estimated J in the field duplicate pairs only.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/13-18/09 and samples were received at the laboratory 03/14-19/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Sample Condition

VOA

All sample vials for YS01-TB01-031309 contained headspace; therefore results were qualified as biased low (L/UL).

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 03/20/09	acetone	0.0372	YS01-GW12-0309	L/R	CCL
IC 03/25/09	2-butanone	0.0378	YS01-GW14-0309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW22P-0309	L/R	ICL
IC 02/28/09	acetone	0.0405	YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	L/R	ICL
CC 03/29/09	acetone 2-butanone	0.0339 0.0443	YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	L/R	CCL
	chloromethane	-23.81		J	CCH
CC 03/30/09	acetone	0.0402	YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	L/R	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.23J ug/L	0.5 ug/L	1.15 ug/L
VBLKHT	chloromethane	0.19J	0.5	0.95
	acetone	1.3J	2.5	13
	2-hexanone	0.72J	2.5	3.6
	1,2,4-trichlorobenzene	0.16J	0.5	0.8
VBLKDH	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031309	acetone	2.6	2.5	26
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031609	chloromethane	0.23J	0.5	1.15
	acetone	2.2J	2.5	22
YS03-TB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	2.7	2.5	27
	toluene	0.11J	0.5	0.55
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	toluene	0.34J	0.5	1.7
YS03-EB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	3	2.5	30
	methylene chloride	7.6	0.5	76
	chloroform	0.54	0.5	2.7
	toluene	0.72	0.5	3.6
YS03-EB02-031709	chloromethane	0.21J	0.5	1.05
	acetone	3.4	2.5	34
	methylene chloride	7.9	0.5	79
	chloroform	0.56	0.5	2.8
	toluene	0.72	0.5	3.6
YS01-EB01-031609	chloromethane	0.25J	0.5	1.25
	acetone	2.9	2.5	29
	methylene chloride	9.6	0.5	96
	chloroform	0.67	0.5	3.35
	toluene	0.94	0.5	4.7
YS01-EB02-031609	chloromethane	0.21J	0.5	1.05
	acetone	2.5	2.5	25
	methylene chloride	9	0.5	90
	chloroform	0.61	0.5	3.05
	toluene	0.87	0.5	4.35
YS01-EB01-031309	chloromethane	0.32J	0.5	1.6
	acetone	26	2.5	260
	methylene chloride	0.88	0.5	8.8
	2-butanone	3.6	2.5	36
	toluene	0.35J	0.5	1.75

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS03-EB02-031809	chloromethane	0.19J	0.5	0.95
	acetone	7.4	2.5	74
	methylene chloride	3.1	0.5	31
	2-butanone	1.9J	2.5	19
	chloroform	0.22J	0.5	1.1
	toluene	0.34J	0.5	1.7
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
YS01-FB01-031609	chloromethane	0.24J	0.5	1.2
	acetone	2.9	2.5	29
	methylene chloride	9.7	0.5	97
	chloroform	0.66	0.5	3.3
	toluene	0.92	0.5	4.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	B	BL
YS03-GW08B-0309	2-hexanone	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	B	BL
YS03-GW21-0309	2-butanone	B	BL

Total and Dissolved Metals

Preparation, calibration and field blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	nickel	1.003B ug/L	5.015 ug/L	B	BL
	zinc	5.517B ug/L	27.585 ug/L	B	BL
ICB/CCB – dissolved metals	aluminum	74.2 B ug/L	371 ug/L	B	BL
	antimony	3.1B ug/L	15.5 ug/L	B	BL
	arsenic	2.5B ug/L	12.5 ug/L	B	BL
	beryllium	1.9B ug/L	9.5 ug/L	B	BL
	cadmium	0.9B ug/L	4.5 ug/L	B	BL
	cobalt	2.5b ug/L	12.5 ug/L	B	BL
	iron	29.2B ug/L	146 ug/L	B	BL
	selenium	2.7B ug/L	13.5 ug/L	B	BL
	thallium	4.7B ug/L	23.5 ug/L	B	BL
	copper	-1.5 ug/L	≤ 10X MDL (8.0 ug/L)	L/UL	BL
YS03-FB01-031909 –dissolved	potassium	592B ug/L	2960 ug/L	B	BL
YS01-EB01-031309-dissolved	manganese	0.43B ug/L	2.15 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW21-0309	nickel	B	BL
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309	zinc	B	BL
YS01-GW14-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	B	BL
YS01-GW04A-0309	antimony	B	BL
YS01-GW04A-0309	arsenic	B	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	B	BL
YS01-GW04A-0309	iron	B	BL
YS01-GW22-0309	selenium	B	BL
YS01-GW14-0309	thallium	B	BL
all field samples	copper	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	B	BL
YS01-GW12-0309	manganese	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	3.658B ug/L	18.29 ug/L	B	BL
ICB/CCB – total metals	lead	-1.7B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	beryllium	-0.5B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
YS03-EB01-031709	iron	57.1B ug/L	285.5 ug/L	B	BL
	manganese	2.2B ug/L	11 ug/L	B	BL
YS03-EB01-031809	chromium	0.77B ug/L	3.85 ug/L	B	BL
	nickel	0.75B ug/L	3.75 ug/L	B	BL
YS03-EB02-031809	chromium	0.83B ug/L	4.15 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL
YS03-FB01-031909	beryllium	1.1B ug/L	5.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
all total metals field samples	lead	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	L/UL	BL
YS03-GW18-0309	iron	B	BL
YS03-GW18-0309	manganese	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	B	BL
YS03-GW21-0309	beryllium	B	BL

Matrix Spike

VOA

The matrix spike and matrix spike duplicate associated with sample YS01-GW04A-0309 exhibited high recoveries for trichloroethene at 140% and 195% (QC limit 70-125%); therefore the positive result for this compound in the associated sample was qualified as estimated (J), qualifier code: MSH.

Total and Dissolved Metals

The matrix spike analysis of sample YS01-GW04-0309 for total metals exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS01-GW04A-0309	selenium	all total metals field samples	73/79.2	L/UL	MSL

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's for the analyte potassium in both the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS01-GW04A-0309	potassium	all field samples	14.7 20.3	J/UJ	SD

Field Duplicates

Total & Dissolved Metals

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for two analytes. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS01-GW22-0309, YS01-GW22P-0309	aluminum* iron	YS03-GW22-0309, YS03-GW22P-0309 (dissolved)	97 119	J	FD
YS01-GW22-0309, YS01-GW22P-0309	aluminum iron	YS03-GW22-0309, YS03-GW22P-0309 (total)	94 29	J	FD

*Note – this analyte was previously flagged B in the field duplicate due to blank contamination.

Identification/Quantitation

VOA

A dilution was required for samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309 to obtain results within the calibration range. Therefore, E-flagged compound results were not used in the initial analysis of these samples in favor of the corresponding D-flagged compound result in the dilution, qualifier code: DL.

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Reporting Limits

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) were met. No validation action was required.

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS01-TB01-031309	all results	+/-	L/UL	OT
YS01-GW12-0309	acetone	+/-	L/R	CCL
YS01-GW14-0309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW22P-0309	2-butanone	+/-	L/R	ICL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	acetone	+/-	L/R	ICL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	acetone* 2-butanone	+/-	L/R	CCL
YS01-EB01-031309, YS01-GW04-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309	chloromethane	+	J	CCH
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	acetone*	+/-	L/R	CCL
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	+	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	+	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	+	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	+	B	BL
YS03-GW08B-0309	2-hexanone	+	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	+	B	BL
YS03-GW21-0309	2-butanone	+	B	BL

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS01-GW04A-0309	trichloroethene	+	J	MSH
YS01-GW12-0309, YS01-GW22-0309, YS01-GW22P-0309	all E-flagged results	+	R	DL
YS01-GW12-0309DL, YS01-GW22-0309DL, YS01-GW22P-0309DL	all results except D-flagged compounds	+/-	R	DL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	antimony	+ up to action level	B	BL
all total metals field samples	lead	+/- up to action level	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	+/- up to action level	L/UL	BL
YS03-GW18-0309	iron	+ up to action level	B	BL
YS03-GW18-0309	manganese	+ up to action level	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	+ up to action level	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	+ up to action level	B	BL
YS03-GW21-0309	beryllium	+ up to action level	B	BL
all total metals field samples	selenium	+/-	L/UL	MSL
all total metals field samples	potassium	+/-	J/UJ	SD
YS01-GW22-0309, YS01-GW22P-0309	aluminum iron	+	J	FD
all samples	all analytes	+B	J	

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW21-0309	nickel	+ up to action level	B	BL
YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW22P-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW15-0309, YS03-GW15A-0309	zinc	+ up to action level	B	BL
YS01-GW14-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	+ up to action level	B	BL
YS01-GW04A-0309	antimony	+ up to action level	B	BL
YS01-GW04A-0309	arsenic	+ up to action level	B	BL

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	+ up to action level	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	+ up to action level	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	+ up to action level	B	BL
YS01-GW04A-0309	iron	+ up to action level	B	BL
YS01-GW22-0309	selenium	+ up to action level	B	BL
YS01-GW14-0309	thallium	+ up to action level	B	BL
all field samples	copper	+/- up to action level	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	+ up to action level	B	BL
YS01-GW12-0309	manganese	+ up to action level	B	BL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
YS01-GW22-0309, YS01-GW22P-0309	aluminum* iron	+	J	FD
all samples	all analytes	+B	J	

*aluminum in field dup sample was flagged B due to blank contamination

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-03R371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.32	~~J~~	J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	26	L	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	0.88		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	3.6	L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.35	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

LM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-03R371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	0.17	J
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WP D60609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-10R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.25	~~U~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.9	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	9.6	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	0.67	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.94	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-10R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060909

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB02-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-09R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.21	~~J~~ J	CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	2.5	L	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	9		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R	CCL
67-66-3	Chloroform	0.10	0.5	0.61		
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.87		
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-EB02-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-09R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-FB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-11R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.24	~~J~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.9	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	9.7	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	0.66	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.92	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-FB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-11R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060604

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-07R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~JB~~ B DL
75-01-4	Vinyl Chloride	0.10	0.5	0.48	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.1	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	0.15	J
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	20	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

LM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-07R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	20	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0591
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	12	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.21	J
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	3.7	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0591
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.2	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D090609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-0173
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/21/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032035-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	0.14	J
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	~~U~~ R CCL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.14	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	4.3	
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	71	~~E~~ R DL
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VV 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-0173
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/21/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032035-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	4.1	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VV 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-01D91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 4.2

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.42	2.1	ND	U
74-87-3	Chloromethane	0.42	2.1	ND	U
75-01-4	Vinyl Chloride	0.42	2.1	ND	U
74-83-9	Bromomethane	2.0	2.1	ND	U
75-00-3	Chloroethane	0.54	2.1	ND	U
75-69-4	Trichlorofluoromethane	0.42	2.1	ND	U
75-35-4	1,1-Dichloroethene	0.42	2.1	ND	U
75-15-0	Carbon disulfide	0.42	2.1	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.63	2.1	ND	U
67-64-1	Acetone	4.8	10	4.9	DJ
79-20-9	Methyl acetate	0.42	2.1	ND	U
75-09-2	Methylene Chloride	0.42	2.1	ND	U
156-60-5	trans-1,2-Dichloroethene	0.42	2.1	ND	U
1634-04-4	Methyl-tert-butyl ether	0.42	2.1	ND	U
75-34-3	1,1-Dichloroethane	0.42	2.1	ND	U
156-59-2	cis-1,2-Dichloroethene	0.42	2.1	3.2	D
78-93-3	2-butanone	2.1	10	ND	U
67-66-3	Chloroform	0.42	2.1	ND	U
71-55-6	1,1,1-Trichloroethane	0.42	2.1	ND	U
56-23-5	Carbon Tetrachloride	0.42	2.1	ND	U
71-43-2	Benzene	0.42	2.1	ND	U
107-06-2	1,2-Dichloroethane	0.42	2.1	ND	U
79-01-6	Trichloroethene	0.42	2.1	56	D
78-87-5	1,2-Dichloropropane	0.42	2.1	ND	U
75-27-4	Bromodichloromethane	0.42	2.1	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.42	2.1	ND	U
108-10-1	4-Methyl-2-pentanone	2.1	10	ND	U
108-88-3	Toluene	0.42	2.1	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.42	2.1	ND	U
79-00-5	1,1,2-Trichloroethane	0.42	2.1	ND	U
127-18-4	Tetrachloroethene	0.46	2.1	ND	U
591-78-6	2-hexanone	2.1	10	ND	U
124-48-1	Dibromochloromethane	0.42	2.1	ND	U

RDL

RDL

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW12-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-01RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-01D91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 4.2

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.42	2.1	ND	U
108-90-7	Chlorobenzene	0.42	2.1	ND	U
100-41-4	Ethylbenzene	0.42	2.1	ND	U
108-38-3	m,p-Xylene	0.83	4.2	ND	U
95-47-6	o-Xylene	0.42	2.1	ND	U
100-42-5	Styrene	0.42	2.1	ND	U
75-25-2	Bromoform	0.63	2.1	ND	U
98-82-8	Isopropyl Benzene	0.42	2.1	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	2.1	ND	U
541-73-1	1,3-Dichlorobenzene	0.42	2.1	ND	U
106-46-7	1,4-Dichlorobenzene	0.42	2.1	ND	U
95-50-1	1,2-Dichlorobenzene	0.42	2.1	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.75	2.1	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.54	2.1	ND	U
540-59-0	1,2-Dichloroethene (total)	0.42	2.1	3.1	D
1330-20-7	Xylene (total)	0.42	2.1	ND	U
110-82-7	Cyclohexane	0.42	2.1	ND	U
108-87-2	Methylcyclohexane	0.42	2.1	ND	U

RDL

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW14-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-02R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	1.7	~~J~~ B BR
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	0.35	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW14-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-02R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0691
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	3.6	
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	8.3	
75-15-0	Carbon disulfide	0.10	0.5	0.37	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	U
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.13	~~J~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.6	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	0.26	J
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	880	~~E~~ DL
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	0.24	J
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	1900	~~E~~ DL
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.25	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	1.7	
127-18-4	Tetrachloroethene	0.11	0.5	0.21	J
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0691
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	850	~~E~~ RDL
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-06D371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1250.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	130	630	ND	U RDL
74-87-3	Chloromethane	130	630	280	DJB
75-01-4	Vinyl Chloride	130	630	ND	U
74-83-9	Bromomethane	590	630	ND	U
75-00-3	Chloroethane	160	630	ND	U
75-69-4	Trichlorofluoromethane	130	630	ND	U
75-35-4	1,1-Dichloroethene	130	630	ND	U
75-15-0	Carbon disulfide	130	630	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	190	630	ND	U
67-64-1	Acetone	ERR	3100	ND	U
79-20-9	Methyl acetate	130	630	ND	U
75-09-2	Methylene Chloride	130	630	ND	U
156-60-5	trans-1,2-Dichloroethene	130	630	ND	U
1634-04-4	Methyl-tert-butyl ether	130	630	ND	U
75-34-3	1,1-Dichloroethane	130	630	ND	U
156-59-2	cis-1,2-Dichloroethene	130	630	3000	D RDL
78-93-3	2-butanone	630	3100	ND	U
67-66-3	Chloroform	130	630	ND	U
71-55-6	1,1,1-Trichloroethane	130	630	ND	U
56-23-5	Carbon Tetrachloride	130	630	ND	U
71-43-2	Benzene	130	630	ND	U
107-06-2	1,2-Dichloroethane	130	630	ND	U
79-01-6	Trichloroethene	130	630	18000	D RDL
78-87-5	1,2-Dichloropropane	130	630	ND	U
75-27-4	Bromodichloromethane	130	630	ND	U
10061-01-5	cis-1,3-Dichloropropene	130	630	ND	U
108-10-1	4-Methyl-2-pentanone	630	3100	ND	U
108-88-3	Toluene	130	630	ND	U
10061-02-6	trans-1,3-Dichloropropene	130	630	ND	U
79-00-5	1,1,2-Trichloroethane	130	630	ND	U
127-18-4	Tetrachloroethene	140	630	ND	U
591-78-6	2-hexanone	630	3100	ND	U
124-48-1	Dibromochloromethane	130	630	ND	U

ND = Not Detected
Q = Qualifier

WN 060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-06RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-06D371
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1250.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	130	630	ND	U
108-90-7	Chlorobenzene	130	630	ND	U
100-41-4	Ethylbenzene	130	630	ND	U
108-38-3	m,p-Xylene	250	1300	ND	U
95-47-6	o-Xylene	130	630	ND	U
100-42-5	Styrene	130	630	ND	U
75-25-2	Bromoform	190	630	ND	U
98-82-8	Isopropyl Benzene	130	630	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	150	630	ND	U
541-73-1	1,3-Dichlorobenzene	130	630	ND	U
106-46-7	1,4-Dichlorobenzene	130	630	ND	U
95-50-1	1,2-Dichlorobenzene	130	630	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	230	630	ND	U
120-82-1	1,2,4-Trichlorobenzene	160	630	ND	U
540-59-0	1,2-Dichloroethene (total)	130	630	3000	
1330-20-7	Xylene (total)	130	630	ND	U
110-82-7	Cyclohexane	130	630	ND	U
108-87-2	Methylcyclohexane	130	630	ND	U

RDL

RDL

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	ND	U	
75-01-4	Vinyl Chloride	0.10	0.5	3.6		
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	8.6		
75-15-0	Carbon disulfide	0.10	0.5	0.39	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	1.5	~~J~~ B	BDL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	0.14	~~J~~ B	BDL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.3		
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	0.26	J	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	860	~~E~~ R	RDL
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R	ICL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	0.24	J	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	1800	~~E~~ R	RDL
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.25	~~J~~ B	BDL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	1.6		
127-18-4	Tetrachloroethene	0.11	0.5	0.21	J	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	830	E RDL
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6DLDC1

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-08D271
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1428.6

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	140	710	ND	U RDL
74-87-3	Chloromethane	140	710	290	DJB
75-01-4	Vinyl Chloride	140	710	ND	U
74-83-9	Bromomethane	670	710	ND	U
75-00-3	Chloroethane	190	710	ND	U
75-69-4	Trichlorofluoromethane	140	710	ND	U
75-35-4	1,1-Dichloroethene	140	710	ND	U
75-15-0	Carbon disulfide	140	710	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	210	710	ND	U
67-64-1	Acetone	ERR	3600	ND	U
79-20-9	Methyl acetate	140	710	ND	U
75-09-2	Methylene Chloride	140	710	ND	U
156-60-5	trans-1,2-Dichloroethene	140	710	ND	U
1634-04-4	Methyl-tert-butyl ether	140	710	ND	U
75-34-3	1,1-Dichloroethane	140	710	ND	U
156-59-2	cis-1,2-Dichloroethene	140	710	2900	D
78-93-3	2-butanone	710	3600	ND	U RDL
67-66-3	Chloroform	140	710	ND	U
71-55-6	1,1,1-Trichloroethane	140	710	ND	U
56-23-5	Carbon Tetrachloride	140	710	ND	U
71-43-2	Benzene	140	710	ND	U
107-06-2	1,2-Dichloroethane	140	710	ND	U
79-01-6	Trichloroethene	140	710	17000	D
78-87-5	1,2-Dichloropropane	140	710	ND	U RDL
75-27-4	Bromodichloromethane	140	710	ND	U
10061-01-5	cis-1,3-Dichloropropene	140	710	ND	U
108-10-1	4-Methyl-2-pentanone	710	3600	ND	U
108-88-3	Toluene	140	710	ND	U
10061-02-6	trans-1,3-Dichloropropene	140	710	ND	U
79-00-5	1,1,2-Trichloroethane	140	710	ND	U
127-18-4	Tetrachloroethene	160	710	ND	U
591-78-6	2-hexanone	710	3600	ND	U
124-48-1	Dibromochloromethane	140	710	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

042

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW22P-0309DL

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-08RE1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-08D271
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1428.6

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	140	710	ND	U
108-90-7	Chlorobenzene	140	710	ND	U
100-41-4	Ethylbenzene	140	710	ND	U
108-38-3	m,p-Xylene	290	1400	ND	U
95-47-6	o-Xylene	140	710	ND	U
100-42-5	Styrene	140	710	ND	U
75-25-2	Bromoform	210	710	ND	U
98-82-8	Isopropyl Benzene	140	710	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	170	710	ND	U
541-73-1	1,3-Dichlorobenzene	140	710	ND	U
106-46-7	1,4-Dichlorobenzene	140	710	ND	U
95-50-1	1,2-Dichlorobenzene	140	710	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	260	710	ND	U
120-82-1	1,2,4-Trichlorobenzene	190	710	ND	U
540-59-0	1,2-Dichloroethene (total)	140	710	2800	D
1330-20-7	Xylene (total)	140	710	ND	U
110-82-7	Cyclohexane	140	710	ND	U
108-87-2	Methylcyclohexane	140	710	ND	U

RPDL

RPDL

ND = Not Detected
Q = Qualifier

FORM I VOA

06/06/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-04R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032514-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.6	L
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6/06/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031309

Lab Project Number:
Method: 8260B
Date Collected: 03/13/09

Lab Sample ID: 0903092-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/14/09
Lab File ID: 0903092-04R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/25/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032514-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

DL OT

ND = Not Detected
Q = Qualifier

FORM I VOA

D060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-12R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~U~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.2	~~U~~ J ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-TB01-031609

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 0903092-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 0903092-12R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-17R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JD~~ J CCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	7.6	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	0.54	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.72	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WC 060609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-17R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

MW 060609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB02-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1871
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~J~~ JCCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.4	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	7.9	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~UR~~ CCL
67-66-3	Chloroform	0.10	0.5	0.56	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.72	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D060609

050

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-EB02-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1871
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08B-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-21
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-21R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033012-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	0.15	J
74-87-3	Chloromethane	0.10	0.5	0.25	~~JB~~ B BSL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.7	~~B~~ B BSL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.12	~~J~~ B BSL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.12	J
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	4.9	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	0.58	~~JB~~ B BSL
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VM 060609

052

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08B-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-21
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-21R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	0.16	~~JB~~ BPR
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.12	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

MM 060609

053

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08BP-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-23
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-23R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	0.15	J
74-87-3	Chloromethane	0.10	0.5	0.16	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.3	~~JB~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.14	J
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	5	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

06D604

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW08BP-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-23
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-23R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.13	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-15R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	2.3	
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	0.35	J
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.9	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	0.1	J
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	3.7	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	3.8	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VM 060609

056

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-15R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	3.7	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

057

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-13R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.7	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.18	J
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ RCCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

058

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW15A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-13R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9032902-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.18	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW18-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-16R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.16	~~JB~~ B PL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	~~U~~ R ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.91	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6060

060

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW18-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-16R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

061

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW21-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-22
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-22R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.91	~~B~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	1.6	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	8.2	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	0.4	J
75-09-2	Methylene Chloride	0.10	0.5	0.32	~~B~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	2.5	
78-93-3	2-butanone	0.50	2.5	2.7	B BL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	2.9	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.58	B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D60609

062

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW21-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-22
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-22R71
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.17	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	0.11	J
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	2.5	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

063

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW23-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-20R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	0.19	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	12	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	5.9	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ BL CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	9.9	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.1	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D6/6/09

064

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW23-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903092-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903092-20R71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.15	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	5.9	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

065

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW26-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-14D71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 20.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	2.0	10	ND	U
74-87-3	Chloromethane	2.0	10	3.5	~~JB~~ BM
75-01-4	Vinyl Chloride	2.0	10	ND	U
74-83-9	Bromomethane	9.4	10	ND	U
75-00-3	Chloroethane	2.6	10	ND	U
75-69-4	Trichlorofluoromethane	2.0	10	ND	U
75-35-4	1,1-Dichloroethene	2.0	10	ND	U
75-15-0	Carbon disulfide	2.0	10	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	3.0	10	ND	U
67-64-1	Acetone	23	50	ND	~~U~~ RICL
79-20-9	Methyl acetate	2.0	10	ND	U
75-09-2	Methylene Chloride	2.0	10	ND	U
156-60-5	trans-1,2-Dichloroethene	2.0	10	ND	U
1634-04-4	Methyl-tert-butyl ether	2.0	10	ND	U
75-34-3	1,1-Dichloroethane	2.0	10	ND	U
156-59-2	cis-1,2-Dichloroethene	2.0	10	330	
78-93-3	2-butanone	10	50	ND	~~U~~ RCL
67-66-3	Chloroform	2.0	10	ND	U
71-55-6	1,1,1-Trichloroethane	2.0	10	ND	U
56-23-5	Carbon Tetrachloride	2.0	10	ND	U
71-43-2	Benzene	2.0	10	ND	U
107-06-2	1,2-Dichloroethane	2.0	10	ND	U
79-01-6	Trichloroethene	2.0	10	130	
78-87-5	1,2-Dichloropropane	2.0	10	ND	U
75-27-4	Bromodichloromethane	2.0	10	ND	U
10061-01-5	cis-1,3-Dichloropropene	2.0	10	ND	U
108-10-1	4-Methyl-2-pentanone	10	50	ND	U
108-88-3	Toluene	2.0	10	ND	U
10061-02-6	trans-1,3-Dichloropropene	2.0	10	ND	U
79-00-5	1,1,2-Trichloroethane	2.0	10	ND	U
127-18-4	Tetrachloroethene	2.2	10	ND	U
591-78-6	2-hexanone	10	50	ND	U
124-48-1	Dibromochloromethane	2.0	10	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

VM 060609

066

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-GW26-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-14D71
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 20.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	2.0	10	ND	U
108-90-7	Chlorobenzene	2.0	10	ND	U
100-41-4	Ethylbenzene	2.0	10	ND	U
108-38-3	m,p-Xylene	4.0	20	ND	U
95-47-6	o-Xylene	2.0	10	ND	U
100-42-5	Styrene	2.0	10	ND	U
75-25-2	Bromoform	3.0	10	ND	U
98-82-8	Isopropyl Benzene	2.0	10	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	2.4	10	ND	U
541-73-1	1,3-Dichlorobenzene	2.0	10	ND	U
106-46-7	1,4-Dichlorobenzene	2.0	10	ND	U
95-50-1	1,2-Dichlorobenzene	2.0	10	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	3.6	10	ND	U
120-82-1	1,2,4-Trichlorobenzene	2.6	10	ND	U
540-59-0	1,2-Dichloroethene (total)	2.0	10	330	
1330-20-7	Xylene (total)	2.0	10	ND	U
110-82-7	Cyclohexane	2.0	10	ND	U
108-87-2	Methylcyclohexane	2.0	10	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-TB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1971
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~J~~ JCCH
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.7	L JCL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.11	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60604

068

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS03-TB01-031709

Lab Project Number:
Method: 8260B
Date Collected: 03/17/09

Lab Sample ID: 0903092-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/18/09
Lab File ID: 0903092-1971
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MS171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	6.2	
74-87-3	Chloromethane	0.10	0.5	5.4	B
75-01-4	Vinyl Chloride	0.10	0.5	6.7	
74-83-9	Bromomethane	0.47	0.5	5.9	
75-00-3	Chloroethane	0.13	0.5	6.6	
75-69-4	Trichlorofluoromethane	0.10	0.5	6.7	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.7	
75-15-0	Carbon disulfide	0.10	0.5	6.3	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	6.3	
67-64-1	Acetone	1.2	2.5	48	
79-20-9	Methyl acetate	0.10	0.5	6.3	
75-09-2	Methylene Chloride	0.10	0.5	6.1	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.8	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	6.6	
75-34-3	1,1-Dichloroethane	0.10	0.5	6.5	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	6.3	
78-93-3	2-butanone	0.50	2.5	36	
67-66-3	Chloroform	0.10	0.5	6.5	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	6.4	
56-23-5	Carbon Tetrachloride	0.10	0.5	6.6	
71-43-2	Benzene	0.10	0.5	6	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.6	
79-01-6	Trichloroethene	0.10	0.5	11	
78-87-5	1,2-Dichloropropane	0.10	0.5	6.4	
75-27-4	Bromodichloromethane	0.10	0.5	6.4	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	6.1	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	36	
108-88-3	Toluene	0.10	0.5	6	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	6.7	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.7	
127-18-4	Tetrachloroethene	0.11	0.5	5.7	
591-78-6	2-hexanone	0.50	2.5	36	
124-48-1	Dibromochloromethane	0.10	0.5	5.9	

ND = Not Detected
Q = Qualifier

FORM I VOA

070

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MS171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.9	
108-90-7	Chlorobenzene	0.10	0.5	5.9	
100-41-4	Ethylbenzene	0.10	0.5	6.1	
108-38-3	m,p-Xylene	0.20	1	12	
95-47-6	o-Xylene	0.10	0.5	6.1	
100-42-5	Styrene	0.10	0.5	6	
75-25-2	Bromoform	0.15	0.5	5.7	
98-82-8	Isopropyl Benzene	0.10	0.5	6.4	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	5.9	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	5.6	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	5.7	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	5.7	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	6.1	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	6	
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	19	
110-82-7	Cyclohexane	0.10	0.5	6.3	
108-87-2	Methylcyclohexane	0.10	0.5	6.3	

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MSD171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	5.7	
74-87-3	Chloromethane	0.10	0.5	4.9	B
75-01-4	Vinyl Chloride	0.10	0.5	5.9	
74-83-9	Bromomethane	0.47	0.5	5.5	
75-00-3	Chloroethane	0.13	0.5	5.7	
75-69-4	Trichlorofluoromethane	0.10	0.5	5.9	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.5	
75-15-0	Carbon disulfide	0.10	0.5	5.9	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	5.8	
67-64-1	Acetone	1.2	2.5	31	
79-20-9	Methyl acetate	0.10	0.5	5.7	
75-09-2	Methylene Chloride	0.10	0.5	5.7	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.5	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	6.2	
75-34-3	1,1-Dichloroethane	0.10	0.5	6	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	6.2	
78-93-3	2-butanone	0.50	2.5	32	
67-66-3	Chloroform	0.10	0.5	6.1	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	5.9	
56-23-5	Carbon Tetrachloride	0.10	0.5	6	
71-43-2	Benzene	0.10	0.5	5.6	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.1	
79-01-6	Trichloroethene	0.10	0.5	13	
78-87-5	1,2-Dichloropropane	0.10	0.5	5.9	
75-27-4	Bromodichloromethane	0.10	0.5	5.9	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	5.6	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	33	
108-88-3	Toluene	0.10	0.5	5.6	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	6	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.3	
127-18-4	Tetrachloroethene	0.11	0.5	5.4	
591-78-6	2-hexanone	0.50	2.5	33	
124-48-1	Dibromochloromethane	0.10	0.5	5.4	

ND = Not Detected
Q = Qualifier

FORM I VOA

D60609

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903092
Client Sample ID: YS01-GW04A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/16/09

Lab Sample ID: 9032902-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/17/09
Lab File ID: 9032902-MSD171
Analyst: TD

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/29/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9032902-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.5	
108-90-7	Chlorobenzene	0.10	0.5	5.6	
100-41-4	Ethylbenzene	0.10	0.5	5.7	
108-38-3	m,p-Xylene	0.20	1	12	
95-47-6	o-Xylene	0.10	0.5	5.7	
100-42-5	Styrene	0.10	0.5	5.6	
75-25-2	Bromoform	0.15	0.5	5.3	
98-82-8	Isopropyl Benzene	0.10	0.5	6	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	5.5	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	5.4	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	5.4	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	5.7	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	5.6	
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	18	
110-82-7	Cyclohexane	0.10	0.5	5.8	
108-87-2	Methylcyclohexane	0.10	0.5	5.8	

ND = Not Detected
Q = Qualifier

D60609

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW04-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-07

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1300			P
7440-36-0	Antimony	5.1	~~B~~	B BL	P
7440-38-2	Arsenic	5.2	~~B~~	J	P
7440-39-3	Barium	46.7	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	82200			P
7440-47-3	Chromium	2.2	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.85	~~B~~	J	P
7439-89-6	Iron	2170			P
7439-92-1	Lead	1.4	~~B~~	UL BL	P
7439-95-4	Magnesium	2340	~~B~~	J	P
7439-96-5	Manganese	72.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	1130	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	~~B~~	W UL MSL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6670			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.2	~~B~~	J	P
7440-66-6	Zinc	6.3	~~B~~	J	P

JMC 6309

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW04A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-05

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	162	~~B~~	J	P
7440-36-0	Antimony	5.2	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	10.0	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	25200			P
7440-47-3	Chromium	4.0	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.91	~~B~~	J	P
7439-89-6	Iron	320			P
7439-92-1	Lead	1.4	~~U~~	WL BL	P
7439-95-4	Magnesium	425	~~B~~	J	P
7439-96-5	Manganese	26.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.1	~~B~~	J	P
7440-09-7	Potassium	1070	~~B~~	EMJ SD	P
7782-49-2	Selenium	2.2	~~U~~	WL MSA	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5770			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW12-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-01

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	224			P
7440-36-0	Antimony	3.5	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	101	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	UL BL	P
7440-43-9	Cadmium	11.4			P
7440-70-2	Calcium	73900			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	6.0			P
7439-89-6	Iron	375			P
7439-92-1	Lead	1.6	~~B~~	L BL	P
7439-95-4	Magnesium	5640			P
7439-96-5	Manganese	37.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	6.2	~~B~~	B BL	P
7440-09-7	Potassium	2300	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	~~U~~	~~UL~~ MSL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3070	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	2210			P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW14-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-02

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	599			P
7440-36-0	Antimony	4.5	~~B~~	B BL	P
7440-38-2	Arsenic	26.6			P
7440-39-3	Barium	104	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	1920	~~B~~	~~L BL~~	P
7440-47-3	Chromium	1.8	~~B~~	J	P
7440-48-4	Cobalt	4.1	~~B~~	J	P
7440-50-8	Copper	1.8	~~B~~	J	P
7439-89-6	Iron	9910			P
7439-92-1	Lead	6.0		L BL	P
7439-95-4	Magnesium	929	~~B~~	J	P
7439-96-5	Manganese	26.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.2	~~B~~	B BL	P
7440-09-7	Potassium	911	~~B~~	~~L~~ J SD	P
7782-49-2	Selenium	2.2	~~B~~	~~L~~ UL MBL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3050	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.0	~~B~~	J	P
7440-66-6	Zinc	14.5	~~B~~	J	P

J XI corr JAC 61009

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-06

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1420		J FD	P
7440-36-0	Antimony	5.3	B	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	27.7	B	J	P
7440-41-7	Beryllium	0.42	U	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	125000			P
7440-47-3	Chromium	9.0	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.7	B	J	P
7439-89-6	Iron	3960		J FD	P
7439-92-1	Lead	1.4	U	UL BL	P
7439-95-4	Magnesium	4760	B	J	P
7439-96-5	Manganese	103			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.5	B	J	P
7440-09-7	Potassium	2500	B	BJ SD	P
7782-49-2	Selenium	2.2	U	UL NO	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7540			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.9	B	J	P
7440-66-6	Zinc	14.9	B	J	P

JAC 6/30/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW22P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-08

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	3920		J FD	P
7440-36-0	Antimony	4.4	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	31.9	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	124000			P
7440-47-3	Chromium	11.5			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.3	~~B~~	J	P
7439-89-6	Iron	5280		J FD	P
7439-92-1	Lead	1.6	~~B~~	L BL	P
7439-95-4	Magnesium	4380	~~B~~	J	P
7439-96-5	Manganese	103			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.6	~~B~~	J	P
7440-09-7	Potassium	2830	~~B~~	~~B~~J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~L~~ UL MSL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7130			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	9.6	~~B~~	J	P
7440-66-6	Zinc	20.8			P

JLC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-21

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	107	~~B~~	J	P
7440-36-0	Antimony	4.7	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	31.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	1.2	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	280			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	2530	~~B~~	J	P
7439-96-5	Manganese	39.2			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	J	P
7440-09-7	Potassium	1040	~~B~~	EJSD	P
7782-49-2	Selenium	2.2	~~U~~	ULMSH	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8660			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.3	~~B~~	J	P
7440-66-6	Zinc	6.6	~~B~~	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-23

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	116	~~B~~	J	P
7440-36-0	Antimony	6.0	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	32.4	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	121000			P
7440-47-3	Chromium	12.7			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	306			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	2580	~~B~~	J	P
7439-96-5	Manganese	39.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.8	~~B~~	J	P
7440-09-7	Potassium	1090	~~B~~	BJ SD	P
7782-49-2	Selenium	2.2	~~U~~	UL MBL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8950			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	~~B~~	J	P
7440-66-6	Zinc	20.6			P

JLC 6/26/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW15-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-15

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	309			P	
7440-36-0	Antimony	5.0	~~B~~	B BL	P	
7440-38-2	Arsenic	2.2	U		P	
7440-39-3	Barium	49.5	~~B~~	J	P	
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	159000			P	
7440-47-3	Chromium	1.9	~~B~~	J	P	
7440-48-4	Cobalt	2.6	~~B~~	J	P	
7440-50-8	Copper	1.7	~~B~~	J	P	
7439-89-6	Iron	1410			P	
7439-92-1	Lead	1.4	~~U~~	UL BL	P	
7439-95-4	Magnesium	2180	~~B~~	J	P	
7439-96-5	Manganese	219			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	3.4	~~B~~	J	P	
7440-09-7	Potassium	1060	~~B~~	~~E~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~M~~ UL	P	MSL
7440-22-4	Silver	0.62	U		P	
7440-23-5	Sodium	14200			P	
7440-28-0	Thallium	3.3	U		P	
7440-62-2	Vanadium	1.5	~~B~~	J	P	
7440-66-6	Zinc	19.0	~~B~~	J	P	

JLC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW15A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-13

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	5.4	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.8	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74900			P
7440-47-3	Chromium	1.4	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	1340			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	1040	~~B~~	J	P
7439-96-5	Manganese	47.6			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	751	~~B~~	~~E~~ J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5490			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.8	~~B~~	J	P

JAC 4/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-16

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	181	~~B~~	J	P
7440-36-0	Antimony	5.3	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	39.7	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	31500			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	35.1	~~B~~	B BL	P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	502	~~B~~	J	P
7439-96-5	Manganese	0.42	~~B~~	B BL	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	1480	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	9620			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.4	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-22

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4290			P
7440-36-0	Antimony	7.3	~~B~~	B BL	P
7440-38-2	Arsenic	45.0			P
7440-39-3	Barium	66.0	~~B~~	J	P
7440-41-7	Beryllium	0.45	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	126000			P
7440-47-3	Chromium	20.8			P
7440-48-4	Cobalt	2.7	~~B~~	J	P
7440-50-8	Copper	3.1	~~B~~	J	P
7439-89-6	Iron	11000			P
7439-92-1	Lead	2.5	~~B~~	L BL	P
7439-95-4	Magnesium	4500	~~B~~	J	P
7439-96-5	Manganese	1260			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	9.3	~~B~~	J	P
7440-09-7	Potassium	2950	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	~~U~~	~~H~~ UL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	29.0			P
7440-66-6	Zinc	21.7			P

NBL

JC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-20

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	193	~~B~~	J	P	
7440-36-0	Antimony	3.9	~~B~~	B BL	P	
7440-38-2	Arsenic	2.7	~~B~~	J	P	
7440-39-3	Barium	38.4	~~B~~	J	P	
7440-41-7	Beryllium	0.42	U		P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	106000			P	
7440-47-3	Chromium	2.8	~~B~~	B BL	P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	2190			P	
7439-92-1	Lead	1.4	~~U~~	UL BL	P	
7439-95-4	Magnesium	2650	~~B~~	J	P	
7439-96-5	Manganese	147			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.4	~~B~~	B BL	P	
7440-09-7	Potassium	1910	~~B~~	EJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	W UL	P	WSL
7440-22-4	Silver	0.62	U		P	
7440-23-5	Sodium	35600			P	
7440-28-0	Thallium	3.3	U		P	
7440-62-2	Vanadium	1.0	~~B~~	J	P	
7440-66-6	Zinc	5.2	U		P	

6309

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW26-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-14

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	713			P
7440-36-0	Antimony	4.5	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	35.4	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	115000			P
7440-47-3	Chromium	5.6	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	2930			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	3810	~~B~~	J	P
7439-96-5	Manganese	79.1			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.1	~~B~~	J	P
7440-09-7	Potassium	1350	~~B~~	~~EJ~~ SD	P
7782-49-2	Selenium	2.2	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	12900			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.3	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB01-031309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-03

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	4.8	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	36.1	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	1.2	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	11.5	~~B~~	~~B~~ J	P
7782-49-2	Selenium	2.2	U	~~U~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	310	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-10

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	4.4	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	90.4	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	2.3	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U	~~W~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	521	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-09

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	3.3	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.52	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~E~~	P
7782-49-2	Selenium	2.2	U	~~N~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	257	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-FB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-11

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	3.7	~~B~~	~~J~~	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~E~~	P
7782-49-2	Selenium	2.2	U	~~N~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	194	~~B~~	~~J~~	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-17

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	3.8	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.40	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	57.1	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	2.2	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U	~~U~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	444	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Lab Sample ID: 0903092-18

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	4.6	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	1.3	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U	~~W~~	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	529	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW04-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-06

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	56.1	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	5.4	~~B~~	J	P
7440-39-3	Barium	42.0	~~B~~	J	P
7440-41-7	Beryllium	1.0	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	91500			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	7.7		L BL	P
7439-89-6	Iron	596			P
7439-92-1	Lead	5.3			P
7439-95-4	Magnesium	2720	~~B~~	J	P
7439-96-5	Manganese	71.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.92	~~B~~	B BL	P
7440-09-7	Potassium	1540	~~B~~	~~E~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7910			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	11.5	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-GW04A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-04

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.8	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	9.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	27200			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	1.2	~~B~~	J L	P
7439-89-6	Iron	31.1	~~B~~	B BL	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	470	~~B~~	J	P
7439-96-5	Manganese	14.4			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.0	~~B~~	B BL	P
7440-09-7	Potassium	1390	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6250			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	11.1	~~B~~	B BL	P

BL Xlcorr JRC 6809

JRC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW12-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-01

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	103	~~B~~	J	P
7440-41-7	Beryllium	0.50	~~B~~	B BL	P
7440-43-9	Cadmium	13.0			P
7440-70-2	Calcium	81200			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	4.1	~~B~~	~~J~~ L	P BL
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	6550			P
7439-96-5	Manganese	0.99	~~B~~	B BL	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.6	~~B~~	J	P
7440-09-7	Potassium	3190	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3270	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	2470			P

XICorr JAC 6809

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW14-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-02

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	442			P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	103	~~B~~	J	P
7440-41-7	Beryllium	0.55	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	2040	~~B~~	J	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	3.4	~~B~~	B BL	P
7440-50-8	Copper	0.95	~~B~~	~~J~~ L	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	1040	~~B~~	J	P
7439-96-5	Manganese	25.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.9	~~B~~	B BL	P
7440-09-7	Potassium	1260	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	3150	~~B~~	J	P
7440-28-0	Thallium	5.9	~~B~~	B BL	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	11.8	~~B~~	B BL	P

BL XICAR JAC 6809

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-05

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	582		J FD	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.9	~~B~~	J	P
7440-39-3	Barium	26.3	~~B~~	J	P
7440-41-7	Beryllium	0.83	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	138000			P
7440-47-3	Chromium	1.4	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.5	~~B~~	J L	P
7439-89-6	Iron	1500		J FD	P
7439-92-1	Lead	2.9	~~B~~	J	P
7439-95-4	Magnesium	5200			P
7439-96-5	Manganese	125			P
7439-97-6	Mercury	0.14	~~B~~	J	CV
7440-02-0	Nickel	2.3	~~B~~	B BL	P
7440-09-7	Potassium	2810	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	3.1	~~B~~	B BL	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8320			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.1	~~B~~	J	P
7440-66-6	Zinc	15.6	~~B~~	B BL	P

BL Xlcorr JAC 6809

JAC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-GW22P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-07

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	202		B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.6	~~B~~	J	P
7440-41-7	Beryllium	0.71	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	129000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	BL BL	P
7439-89-6	Iron	382		J FD	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4800	~~B~~	J	P
7439-96-5	Manganese	98.2			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.7	~~B~~	B BL	P
7440-09-7	Potassium	2740	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8370			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.0	~~B~~	J	P
7440-66-6	Zinc	8.0	~~B~~	B BL	P

JMC 6309

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-18

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	73.5	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.5	~~B~~	J	P
7440-39-3	Barium	32.4	~~B~~	J	P
7440-41-7	Beryllium	1.9	~~B~~	B BL	P
7440-43-9	Cadmium	0.86	~~B~~	B BL	P
7440-70-2	Calcium	134000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	2.6	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	3050	~~B~~	J	P
7439-96-5	Manganese	32.8			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	~~B~~	B BL	P
7440-09-7	Potassium	1480	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10400			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	24.1		B BL	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW08BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-19

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	69.6	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.7	~~B~~	J	P
7440-39-3	Barium	31.2	~~B~~	J	P
7440-41-7	Beryllium	1.8	~~B~~	B BL	P
7440-43-9	Cadmium	0.75	~~B~~	B BL	P
7440-70-2	Calcium	132000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.9	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	ML BL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2970	~~B~~	J	P
7439-96-5	Manganese	34.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.6	~~B~~	B BL	P
7440-09-7	Potassium	1450	~~B~~	EB BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10100			P
7440-28-0	Thallium	4.1	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	12.0	~~B~~	B BL	P

JLC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW15-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-13

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	70.2	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.1	~~B~~	J	P
7440-39-3	Barium	48.5	~~B~~	J	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	175000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	2.7	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	UC BL	P
7439-89-6	Iron	956			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2550	~~B~~	J	P
7439-96-5	Manganese	226			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.2	~~B~~	B BL	P
7440-09-7	Potassium	1440	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	16900			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	8.5	~~B~~	B BL	P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW15A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-11

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	19.7	~~B~~	J	P
7440-41-7	Beryllium	1.2	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	81900			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	119			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	1220	~~B~~	J	P
7439-96-5	Manganese	25.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.1	~~B~~	B BL	P
7440-09-7	Potassium	1090	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6300			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	8.7	~~B~~	B BL	P

JAK 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW18-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-14

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	264		B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	37.4	~~B~~	J	P
7440-41-7	Beryllium	1.6	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	31000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	590	~~B~~	J	P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.2	~~B~~	B BL	P
7440-09-7	Potassium	2110	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	11300			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.0	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW21-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-20

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	108	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	34.7			P
7440-39-3	Barium	44.5	~~B~~	J	P
7440-41-7	Beryllium	2.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.93	~~B~~	B BL	P
7440-70-2	Calcium	116000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	3.1	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	2010			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4090	~~B~~	J	P
7439-96-5	Manganese	1260			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.7	~~B~~	B BL	P
7440-09-7	Potassium	1660	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.3	~~B~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	12000			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW23-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-17

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	69.6	~~B~~	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	6.0	~~B~~	J	P
7440-39-3	Barium	37.5	~~B~~	J	P
7440-41-7	Beryllium	1.5	~~B~~	B BL	P
7440-43-9	Cadmium	0.75	~~B~~	B BL	P
7440-70-2	Calcium	114000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	2.0	~~B~~	B BL	P
7440-50-8	Copper	0.84	~~B~~	VL BL	P
7439-89-6	Iron	1800			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	3050	~~B~~	J	P
7439-96-5	Manganese	152			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.97	~~B~~	B BL	P
7440-09-7	Potassium	2550	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	41800			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW26-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-12

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68.1	B	B BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	3.1	B	J	P
7440-39-3	Barium	33.5	B	J	P
7440-41-7	Beryllium	1.4	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	127000			P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	B	UL BL	P
7439-89-6	Iron	1960			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4330	B	J	P
7439-96-5	Manganese	76.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	1580	B	EB BL	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	14700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB01-031309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-03

Level (low/med): LOW Date Received: 3/14/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.43	~~U~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	16.4	~~U~~	~~J~~ J	P
7782-49-2	Selenium	2.4	~~U~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	~~U~~	J	P

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-09

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.1	~~U~~	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-EB02-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-08

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.66	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-FB01-031609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-10

Level (low/med): LOW Date Received: 3/17/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.92	~~B~~	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	~~B~~	J	P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

MC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-15

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	56.1	B	J	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.3	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	7.5	B	J	P

KC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Lab Sample ID: 0903093-16

Level (low/med): LOW Date Received: 3/18/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.2	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	6.3	B	J	P

MC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166

EMPIRICAL LABORATORIES, LLC - CHAIN OF CUSTODY RECORD

SHIP TO: 227 French Landing Drive, Suite 550 • Nashville, TN 37228 • 615-345-1115 • (fax) 615-846-5426

44265

Send Results to:	Send Invoice to:
Name Chelsea Bennett	Name
Company CH2M Hill	Company
Address 5700 Cleveland St Ste 101	Address
City VA Beach	City
State, Zip VA 23462	State, Zip
Phone 757 671 8311	Phone
Fax	Fax
E-mail	E-mail
Project No./Name: NWS Yorktown Site 1	**Sampler's (Signature):**

Analysis Requirements: VOC SW 846; MEE RSK 175; TOC 9060 As; Total Metals Fe, Mn; Dissolved Fe, Mn; Alk, Chloride, Sulfate; TDM pH; DIM pH; TDC pH

Lab Use Only:

VOA Headspace	Y	N	NA
Field Filtered	Y	N	NA
Correct Containers	Y	N	NA
Discrepancies	Y	N	NA
Cust. Seals Intact	Y	N	NA
Containers Intact	Y	N	NA

Airbill #:

CAR #:

Lab Use Only Lab #	Date/Time Sampled	Sample Description	Sample Matrix	VOC SW 846	MEE RSK 175	TOC 9060 As	Total Metals Fe, Mn	Dissolved Fe, Mn	Alk, Chloride, Sulfate	TDM pH	DIM pH	TDC pH	Comments	No. of Bottles	Lab Use Only Containers/Pres.
0903092-01 0903093-01	3/13/09 1045	YSO1-GW012-031309	GW	3	2	2	1	1	1	<2	<2	<2	May be High	10	
0903092-02 0903093-02	3/13/09 1145	YSO1-GW014-031309	GW	3	2	2	1	1	1	<2	<2	<2	Low PH 2.5	10	
0903092-04	3/13/09 1200	YSO1-TB01-031309	TB	3											
0903092-03 0903093-03	3/13/09 1215	YSO1-EB01-031309	EB	3	—	—	1	1		<2	<2				

Have pea size air bubble in vials in cooler trip blank JK 3.17.09

Rec'd IPL for Total Metals for YSO1-EB01-031309 but did not rec. Alk, Chloride. JK 3.17.09

Sample Kit Prep'd by: (Signature)	Date/Time	Received By: (Signature)
Relinquished by: (Signature)	Date/Time 3/13/09 1700	Received By: (Signature)
Relinquished by: (Signature)	Date/Time	Received By: (Signature)
Received for Laboratory by: (Signature)	Date/Time 3.14.09 12:05	Temperature 1.1°C

REMARKS: GW012 May be High Conc.

GW014 Low PH 2-5

Details:

Page 1 of 1

Cooler No. 1 of 1

Date Shipped 3/13/09

Shipped By Fedex

Turnaround Per Contract

Distribution: Original and yellow copies accompany sample shipment to laboratory; Pink retained by samplers.

114129

2 Coolers CTO

15591

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

1606 501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 1
City: Virginia Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757-671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Pat Murphy, Mark Osborn	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs SW846 (40mL vials)	Metals ILM05.3	Filtered Metals ILM05.3	MEE RSK-175	TOC 9060/Lloyd Kahn	Chloride, Sulfate 300.0 Alkalinity 310.1					pH / Sample Info (Lab Use): Filtered Metals	Metals	Toc
0903092-06 / 0903093-05	YS01-GW22-0309	3/16/09	1100	AQ	10	5		2	2			3	1	1	2	2	1							
0903092-07 / 0903093-06	YS01-GW22P-0309	3/16/09	1115	AQ	5	3		2				3	1	1										
0903092-05 / 0903093-04	YS01-GWOHA-0309	3/16/09	1435	AQ	30	15		6	6			9	3	3	6	6	3							
0903092-09 / 0903093-08	YS01-EB02-031609	3/16/09	1525	AQ	5	3		2				3	1	1										
0903092-03 / 0903093-02	YS01-GWDH-0309	3/16/09	1410	AQ	10	5		2	2			3	1	1	2	2	1							
0903092-10 / 0903093-09	YS01-EB01-031609	3/16/09	1445	AQ	5	3		2				3	1	1										
0903092-12	YS01-TB01-031609	3/16/09	1500	AQ	3	3						3												
0903092-11 / 0903093-10	YS01-FB01-031609	3/16/09	1515	AQ	5	3		2				3	1	1										

Lab Use Only

Sample Unpacked By: PM
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

AQ=GW
Run QC on GWOHA (MS/MSD)
Metals were field filtered

Sample Custody

Relinquished by: PM	Date/Time: 3/16/09 1630	Received by: Kelly Burden	Date/Time: 3/17/09 0950		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontact? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.1, 0.6 °C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTT

CTO-166

2 coolers

15592

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CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4140

Page 1 of 1

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 3
City: Virginia Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: Pat Murphy, Mark Ost, C. Burton	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type) — Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40 ml	Metals ILM05.3 PL (40 ml)	F Metals ILM05.3 PL	MEE RSK-175 40 ml	TOC 9060/Lloyd Kahn 4 ml	Chloride Sulfate 300.0 250 Alkalinity 310.1	pH / Sample Info (Lab Use): Metals	F Metals	TOC		
0903092-13 (0903098-11)	YS03-GW15A-0309	3/17/09	1105	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-14 (0903098-12)	YS03-GW26-0309	3/17/09	1115	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-15 (0903098-13)	YS03-GW15-0309	3/17/09	1255	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-16 (0903098-14)	YS03-GW18-0309	3/17/09	1535	GW	10	5		2	2			3	1	1	2	2	1	<2	<2	<2		
0903092-17 (0903098-15)	YS03-EB01-031709	3/17/09	1630	GW	5	3		2				3	1	1				<2	<2	<5		
0903092-18 (0903098-16)	YS03-EB02-031709	3/17/09	1635	GW	5	3		2				3	1	1				<2	<2			
0903092-19	YS03-TB01-031709	3/17/09	1635	TB	3	3						3										

3/18/09

Lab Use Only

Sample Unpacked By: Dianne Byrd
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Metals were field filtered
YS03-GW15-0309 - all VOA vials have smaller than pea size bubble. **YS03-TB01-031709 - 1 of 3 vials has pea size bubble. ***YS03-GW15-0309 - MEE vials 1 has smaller than pea size and 1 has headspace bubble. 3/18/09

Sample Custody

Relinquished by:		Date/Time: 3/17/09 1730	Received by: Dianne Byrd	Date/Time: 03/18/09 0930	
Relinquished by:		Date/Time:	Received by:	Date/Time:	
Subcontact? Y or (N) If yes, where?		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.6, 0.7	°C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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CTO-166

2 coolers

15593

Page 1 of 1

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CompuChem
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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW 846 40ML	Metals ILM05.3 100ML	F Metals ILM05.3 100ML	MEE RSK-175 40ML	TOC 9060/L Hcl 40ML Hahn	Chloride Sulfate 300.0 Alkalinity 310.1 250ML	pH / Sample Info (Lab Use): Metals	F Metals	F&D
090B113-01 (090B114-01)	YS03-GW08A-0309	3/18/09	1140	GW	30	15		6	6			9	3	3	6	6	3			
090B092-18 (090B093-17)	YS03-GW23-0309	3/18/09	1555	GW	10	5		2	2			3	1	1	2	2	1			
090B113-02 (090B114-02)	YS03-EB01-031809	3/18/09	1630	GW	5	3		2				3	1	1						
090B113-03 (090B114-03)	YS03-EB02-031809	3/18/09	1640	GW	5	3		2				3	1	1						
090B113-04	YS03-TB01-031809	3/18/09	0830	TB	3	3						3								
090B092-21 (090B093-18)	YS03-GW08B-0309	3/18/09	1030	GW	10	5		2	2			3	1	1	2	2	1			
090B092-22 (090B093-19)	YS03-GW08BP-0309	3/18/09	1035	GW	5	3		2				3	1	1						
090B092-19 (090B093-20)	YS03-GW21-0309	3/18/09	1210	GW	10	5		2	2			3	1	1	2	2	1			

Lab Use Only:

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:

Metals were field filtered
GW08A Run QA/QC (MS/MSD)

Sample Custody

Relinquished by: [signature] PM	Date/Time: 3/18/09 1730	Received by: [signature]	Date/Time: 3/19/09 0912		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontact? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.8 0.4 °C		

Samples stored 60 days after date report mailed at no extra charge

White & Yellow copy to lab • Pink copy for customer

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MEMORANDUM **CH2MHILL**

Corrections to COCs

TO: Whom It May Concern

COPIES: File
Data Validation Package
Laboratory Package SDG XXX

FROM: Chelsea Bennet
Environmental Data Manager
CH2M HILL

DATE: March 14, 2009

This memo is to document corrections made to entries on the Chains of Custody (COC) for Yorktown Naval Weapons Station CTO-166, Site 1.

The following sample IDs were written incorrectly on COC 44265, and should be corrected in all login reports, EDDs, and hardcopy deliverables as follows:

Incorrect Sample ID	Sample ID	Date Coll'd	Time Coll'd
YS01-GW012-0309	YS01-GW12-0309	3/13/2009	9:45
YS01-GW014-0309	YS01-GW14-0309	3/13/2009	11:45

For the following samples, the following analyses were requested on the COC and should be deleted. Do NOT analyze the following samples for TOC, Chloride, Sulfate, or Alkalinity:

Sample ID	Date Coll'd	Time Coll'd
YS01-EB01-031309	3/13/2009	12:15

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Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/13-16/09
Received Date: 03/14-17/09
Analysis Dates: 03/21-30/09

Cooler Temps: 0.1-1.1°C

All holding time requirements were met. All sample vials for YS01-TB01-031309 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS01-TB01-031609, YS01-TB01-031309, YS03-TB01-031809, YS03-TB01-031709- trip blanks; YS01-EB01-031609, YS01-EB02-031609, YS01-EB01-031309, YS03-EB01-031809, YS03-EB02-031809, YS03-EB01-031709 and YS03-EB02-031709- equipment blanks; YS01-FB01-031609, YS01-FB01-030909 and YS03-FB01-031909- field blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.23J ug/L	0.5 ug/L	1.15 ug/L
VBLKHT	chloromethane	0.19J	0.5	0.95
	acetone	1.3J	2.5	13
	2-hexanone	0.72J	2.5	3.6
	1,2,4-trichlorobenzene	0.16J	0.5	0.8
VBLKDH	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031309	acetone	2.6	2.5	26
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS01-TB01-031609	chloromethane	0.23J	0.5	1.15
	acetone	2.2J	2.5	22
YS03-TB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	2.7	2.5	27
	toluene	0.11J	0.5	0.55
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	trichloroethene	0.11	0.5	0.55
	toluene	0.34J	0.5	1.7
YS03-EB01-031709	chloromethane	0.21J	0.5	1.05
	acetone	3	2.5	30
	methylene chloride	7.6	0.5	76
	chloroform	0.54	0.5	2.7
	toluene	0.72	0.5	3.6
YS03-EB02-031709	chloromethane	0.21J	0.5	1.05
	acetone	3.4	2.5	34
	methylene chloride	7.9	0.5	79
	chloroform	0.56	0.5	2.8
	toluene	0.72	0.5	3.6
YS01-EB01-031609	chloromethane	0.25J	0.5	1.25
	acetone	2.9	2.5	29
	methylene chloride	9.6	0.5	96
	chloroform	0.67	0.5	3.35
	toluene	0.94	0.5	4.7
YS01-EB02-031609	chloromethane	0.21J	0.5	1.05
	acetone	2.5	2.5	25
	methylene chloride	9	0.5	90
	chloroform	0.61	0.5	3.05
	toluene	0.87	0.5	4.35
YS01-EB01-031309	chloromethane	0.32J	0.5	1.6
	acetone	26	2.5	260
	methylene chloride	0.88	0.5	8.8
	2-butanone	3.6	2.5	36
	toluene	0.35J	0.5	1.75

YS03-EB02-031809	chloromethane	0.19J	0.5	0.95
	acetone	7.4	2.5	74
	methylene chloride	3.1	0.5	31
	2-butanone	1.9J	2.5	19
	chloroform	0.22J	0.5	1.1
	toluene	0.34J	0.5	1.7
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
	ethylbenzene	0.11J	0.5	0.55
YS01-FB01-031609	chloromethane	0.24J	0.5	1.2
	acetone	2.9	2.5	29
	methylene chloride	9.7	0.5	97
	chloroform	0.66	0.5	3.3
	toluene	0.92	0.5	4.6
YS01-FB01-030909	acetone	54	2.5	540
	methylene chloride	3.8	0.5	38
	toluene	2.1	0.5	10.5
	chlorobenzene	0.14J	0.5	0.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-GW04-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309	chloromethane	B	BL
YS03-GW08B-0309, YS03-GW21-0309, YS03-GW08BP-0309, YS01-GW04-0309, YS01-GW04A-0309, YS01-GW14-0309, YS01-GW22P-0309, YS01-GW22-0309, YS03-GW15-0309, YS03-GW15A-0309, YS03-GW23-0309	acetone	B	BL
YS01-GW22-0309, YS01-GW22P-0309, YS03-GW21-0309, YS03-GW23-0309	toluene	B	BL
YS01-GW12-0309, YS01-GW22-0309, YS03-GW08B-0309, YS03-GW21-0309	methylene chloride	B	BL
YS03-GW08B-0309	2-hexanone	B	BL
YS03-GW08B-0309	1,2,4-trichlorobenzene	B	BL
YS03-GW21-0309	2-butanone	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS01-GW04A-0309—the MS and MSD exhibited high recoveries for trichloroethene at 140% and 195% (QC limit 70-125%); therefore the positive result for this compound in the associated sample was qualified as estimated (J), qualifier code: MSH.

Field Duplicate Sample

A field duplicate was submitted for samples YS01-GW22-0309 and YS03-GW08B-0309—no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments. Dilutions were required for samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309 to obtain results within the calibration range.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascuch **Date:** 6/5/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C20008-TUN173 BFB Injection Date: 03/20/09

Instrument ID: 5972HP73 BFB Injection Time: 2153

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.5
75	30.0 - 60.0% of mass 95	41.9
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.2
175	5.0 - 9.0% of mass 174	5.8 (7.0)1
176	95.0 - 101.0% of mass 174	78.7 (95.8)1
177	5.0 - 9.0% of mass 176	5.1 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C20008-CCV	9C20008-CCV173	03/20/09	2212
02	VBLKDH	9032035-BLK	9032035-BLK173	03/20/09	2243
03	VDHLCS	9032035-BS1	9032035-BS173	03/20/09	2312
04	VDHLCSD	9032035-BSD	9032035-BSD173	03/20/09	2341
05	YS01-GW12-0309	0903092-01	0903092-0173	03/21/09	0730
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP73 Calibration Date: 03/20/09 Time: 2212

Lab File ID: 9C20008-CCV173 Init. Calib. Date(s): 03/20/09 03/20/09

Init. Calib. Times: 1215 1610

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.8162600	0.7841033	0.7841033	0.001	-3.94	90.00	AVRG
Chloromethane	0.4439300	0.4551617	0.4551617	0.1	2.53	90.00	AVRG
Vinyl Chloride	0.2661400	0.2510384	0.2510384	0.001	-5.67	20.00	AVRG
Bromomethane	0.1487100	0.1424899	0.1424899	0.001	-4.18	90.00	AVRG
Chloroethane	122.56517	125.00000	0.1014989	0.001	-1.95	90.00	LINR
Trichlorofluoromethane	0.3816400	0.3544199	0.3544199	0.001	-7.13	90.00	AVRG
1,1-Dichloroethene	0.4396200	0.3773335	0.3773335	0.001	-14.17	20.00	AVRG
Carbon disulfide	1.7279500	1.6977688	1.6977688	0.001	-1.75	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2763400	0.2516228	0.2516228	0.001	-8.94	90.00	AVRG
Acetone	637.99873	625.00000	0.0371752	0.001	2.08	90.00	LINR
Methyl acetate	0.2819700	0.2791910	0.2791910	0.001	-0.98	90.00	AVRG
Methylene Chloride	0.4508000	0.4228525	0.4228525	0.001	-6.20	90.00	AVRG
trans-1,2-Dichloroethene	0.5029500	0.4870507	0.4870507	0.001	-3.16	90.00	AVRG
Methyl-tert-butyl ether	0.4907600	0.4463504	0.4463504	0.001	-9.05	90.00	AVRG
1,1-Dichloroethane	0.8110400	0.7935451	0.7935451	0.1	-2.16	90.00	AVRG
cis-1,2-Dichloroethene	0.4554400	0.4299712	0.4299712	0.001	-5.59	90.00	AVRG
2-butanone	0.0550400	0.0508076	0.0508076	0.001	-7.69	90.00	AVRG
Chloroform	0.7572800	0.7472286	0.7472286	0.001	-1.33	20.00	AVRG
1,1,1-Trichloroethane	0.6288600	0.6167050	0.6167050	0.001	-1.93	90.00	AVRG
Carbon Tetrachloride	0.5638200	0.5447692	0.5447692	0.001	-3.38	90.00	AVRG
Benzene	1.6358700	1.5759500	1.5759500	0.001	-3.66	90.00	AVRG
1,2-Dichloroethane	0.3291600	0.3427674	0.3427674	0.001	4.13	90.00	AVRG
Trichloroethene	0.4756900	0.4225157	0.4225157	0.001	-11.18	90.00	AVRG
1,2-Dichloropropane	0.3663600	0.3822846	0.3822846	0.001	4.35	20.00	AVRG
Bromodichloromethane	0.4541900	0.4829775	0.4829775	0.001	6.34	90.00	AVRG
cis-1,3-Dichloropropene	0.4709600	0.4434142	0.4434142	0.001	-5.85	90.00	AVRG
4-Methyl-2-pentanone	0.1818700	0.1738173	0.1738173	0.001	-4.43	90.00	AVRG
Toluene	1.3490100	1.2419227	1.2419227	0.001	-7.94	20.00	AVRG
trans-1,3-Dichloropropene	0.5366200	0.5327586	0.5327586	0.001	-0.72	90.00	AVRG
1,1,2-Trichloroethane	0.2962900	0.2710558	0.2710558	0.001	-8.52	90.00	AVRG
Tetrachloroethene	0.5575200	0.4616250	0.4616250	0.001	-17.20	90.00	AVRG
2-hexanone	0.1163300	0.1116186	0.1116186	0.001	-4.05	90.00	AVRG
Dibromochloromethane	0.3936600	0.3566333	0.3566333	0.001	-9.40	90.00	AVRG
1,2-Dibromoethane	0.2873000	0.2654666	0.2654666	0.001	-7.60	90.00	AVRG
Chlorobenzene	1.4585300	1.3049100	1.3049100	0.3	-10.53	90.00	AVRG
Ethylbenzene	0.7799200	0.6836509	0.6836509	0.001	-12.34	20.00	AVRG
m,p-Xylene	0.9446000	0.8321592	0.8321592	0.001	-11.90	90.00	AVRG
o-Xylene	0.8895900	0.8044332	0.8044332	0.001	-9.57	90.00	AVRG
Styrene	1.3593900	1.2277085	1.2277085	0.001	-9.69	90.00	AVRG
Bromoform	0.1954500	0.1875450	0.1875450	0.1	-4.04	90.00	AVRG
Isopropyl Benzene	2.3713400	2.0517388	2.0517388	0.001	-13.48	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.7104500	0.6869292	0.6869292	0.3	-3.31	90.00	AVRG

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C25004-TUN191 BFB Injection Date: 03/25/09

Instrument ID: 5975HPMS91 BFB Injection Time: 1140

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.2
75	30.0 - 60.0% of mass 95	48.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.5
173	Less than 2.0% of mass 174	0.4 (0.5)1
174	Greater than 50.0% of mass 95	71.3
175	5.0 - 9.0% of mass 174	5.1 (7.1)1
176	95.0 - 101.0% of mass 174	70.8 (99.3)1
177	5.0 - 9.0% of mass 176	4.8 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9C25004-CAL	9C25004-CAL291	03/25/09	1236
02	VSTD0.5	9C25004-CAL	9C25004-CAL191	03/25/09	1303
03	VSTD010	9C25004-CAL	9C25004-CAL491	03/25/09	1329
04	VSTD025	9C25004-CAL	9C25004-CAL591	03/25/09	1356
05	VSTD005	9C25004-CAL	9C25004-CAL3R9	03/25/09	1423
06	VBLKHK	9032514-BLK	9032514-BLK191	03/25/09	1517
07	VHKLCS	9032514-BS1	9032514-BS191	03/25/09	1558
08	VHKLCSD	9032514-BSD	9032514-BSD191	03/25/09	1625
09	YS01-GW14-0309	0903092-02	0903092-02R91	03/25/09	1959
10	YS01-TB01-031309	0903092-04	0903092-04R91	03/25/09	2052
11	YS01-GW12-0309DL	0903092-01R	0903092-01D91	03/25/09	2119
12	YS01-GW04A-0309	0903092-05	0903092-0591	03/25/09	2146
13	YS01-GW22-0309	0903092-06	0903092-0691	03/25/09	2213
14	YS01-GW22P-0309	0903092-08	0903092-0891	03/25/09	2306
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FORM V VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5975HPMS91 Calibration Date(s): 03/25/09 03/25/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1236 1423

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.51639363	6.463	15.000
Chloromethane	AVRG		0.28866206	6.278	15.000
Vinyl Chloride	AVRG		0.21510427	4.544	30.000
Bromomethane	AVRG		0.11990001	6.429	15.000
Chloroethane	AVRG		0.09942060	5.858	15.000
Trichlorofluoromethane	AVRG		0.31945817	5.740	15.000
1,1-Dichloroethene	AVRG		0.30880241	7.986	30.000
Carbon disulfide	AVRG		1.15931112	3.973	15.000
1,1,2-trichloro-1,2,2-triflu	LINR	-0.0933805	6.67395608	0.9997276	0.9950000
Acetone	LINR	-0.6546255	48.4616942	0.9998817	0.9950000
Methyl acetate	AVRG		0.17969017	5.744	15.000
Methylene Chloride	AVRG		0.25291476	6.909	15.000
trans-1,2-Dichloroethene	AVRG		0.34305477	3.923	15.000
Methyl-tert-butyl ether	AVRG		0.41780166	5.781	15.000
1,1-Dichloroethane	AVRG		0.59742005	2.304	15.000
cis-1,2-Dichloroethene	AVRG		0.31135818	2.133	15.000
-butanone	AVRG		0.03784098	2.520	15.000
Chloroform	AVRG		0.54048274	3.736	30.000
1,1,1-Trichloroethane	AVRG		0.54456031	8.187	15.000
Carbon Tetrachloride	AVRG		0.46926736	8.828	15.000
Benzene	AVRG		1.33049463	4.758	15.000
1,2-Dichloroethane	AVRG		0.25787247	2.332	15.000
Trichloroethene	LINR	0.03136040	3.07949233	0.9985392	0.9950000
1,2-Dichloropropane	AVRG		0.29017511	3.920	30.000
Bromodichloromethane	AVRG		0.32642963	3.737	15.000
cis-1,3-Dichloropropene	AVRG		0.36817730	4.318	15.000
4-Methyl-2-pentanone	AVRG		0.14419064	3.697	15.000
Toluene	AVRG		1.28461479	9.983	30.000
trans-1,3-Dichloropropene	AVRG		0.47591574	3.932	15.000
1,1,2-Trichloroethane	AVRG		0.21322162	5.547	15.000
Tetrachloroethene	LINR	0.02115304	2.59666488	0.9978995	0.9950000
2-hexanone	AVRG		0.10273527	1.959	15.000
Dibromochloromethane	AVRG		0.24403015	4.680	15.000
1,2-Dibromoethane	AVRG		0.18977112	5.086	15.000
Chlorobenzene	AVRG		1.25921926	10.184	15.000
Ethylbenzene	AVRG		0.77881791	12.963	30.000
m,p-Xylene	AVRG		0.95544407	12.032	15.000
o-Xylene	AVRG		0.87243378	11.139	15.000
Styrene	AVRG		1.34392039	6.985	15.000
Bromoform	AVRG		0.10959230	8.058	15.000
Isopropyl Benzene	AVRG		2.41398611	14.188	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.51679800	6.821	15.000
1,3-Dichlorobenzene	LINR	0.00336942	0.52854731	0.9987682	0.9950000
1,4-Dichlorobenzene	LINR	0.00147604	0.53771092	0.9989098	0.9950000

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FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000
Chloromethane	AVRG		0.27044445	12.062	15.000
Vinyl Chloride	AVRG		0.23003478	8.624	30.000
Bromomethane	AVRG		0.15750282	9.483	15.000
Chloroethane	AVRG		0.09293606	4.050	15.000
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000
Carbon disulfide	AVRG		1.08532070	9.621	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000
Acetone	AVRG		0.04053702	10.407	15.000
Methyl acetate	AVRG		0.26289378	2.681	15.000
Methylene Chloride	AVRG		0.27597997	5.241	15.000
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000
.-butanone	AVRG		0.05249255	6.112	15.000
Chloroform	AVRG		0.50756846	6.234	30.000
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000
Benzene	AVRG		1.00716400	6.418	15.000
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000
Trichloroethene	AVRG		0.33002699	6.711	15.000
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000
Bromodichloromethane	AVRG		0.33298211	7.620	15.000
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000
Toluene	AVRG		0.93480306	5.691	30.000
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000
Tetrachloroethene	AVRG		0.31078865	10.185	15.000
2-hexanone	AVRG		0.10893166	9.712	15.000
Dibromochloromethane	AVRG		0.31932787	6.449	15.000
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000
Chlorobenzene	AVRG		0.95964278	5.742	15.000
Ethylbenzene	AVRG		0.48273954	9.366	30.000
m,p-Xylene	AVRG		0.59028287	9.153	15.000
o-Xylene	AVRG		0.56958706	7.286	15.000
Styrene	AVRG		0.93611935	7.857	15.000
Bromoform	AVRG		0.16353005	7.565	15.000
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C29001-TUN171 BFB Injection Date: 03/29/09

Instrument ID: 5972HP71 BFB Injection Time: 1121

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	42.2
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.6
175	5.0 - 9.0% of mass 174	5.7 (7.5)1
176	95.0 - 101.0% of mass 174	75.5 (98.6)1
177	5.0 - 9.0% of mass 176	4.9 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C29001-CCV	9C29001-CCV171	03/29/09	1140
02	VBLKDJ	9032902-BLK	9032902-BLK171	03/29/09	1209
03	VDJLCS	9032902-BS1	9032902-BS1R71	03/29/09	1335
04	YS01-EB01-031309	0903092-03	0903092-03R371	03/29/09	1412
05	YS01-GW04-0309	0903092-07	0903092-07R71	03/29/09	1509
06	YS01-GW22P-0309DL	0903092-08R	0903092-08D271	03/29/09	1537
07	YS01-GW22-0309DL	0903092-06R	0903092-06D371	03/29/09	1605
08	YS01-EB02-031609	0903092-09	0903092-09R71	03/29/09	1633
09	YS01-EB01-031609	0903092-10	0903092-10R71	03/29/09	1702
10	YS01-FB01-031609	0903092-11	0903092-11R71	03/29/09	1730
11	YS01-TB01-031609	0903092-12	0903092-12R71	03/29/09	1758
12	YS03-GW15A-0309	0903092-13	0903092-13R71	03/29/09	1826
13	YS03-GW26-0309	0903092-14	0903092-14D71	03/29/09	1855
14	YS03-GW15-0309	0903092-15	0903092-15R71	03/29/09	1923
15	YS03-GW18-0309	0903092-16	0903092-16R71	03/29/09	1951
16	YS03-EB01-031709	0903092-17	0903092-17R71	03/29/09	2020
17	YS03-EB02-031709	0903092-18	0903092-1871	03/29/09	2048
18	YS03-TB01-031709	0903092-19	0903092-1971	03/29/09	2116
19	YS03-GW23-0309	0903092-20	0903092-20R71	03/29/09	2144
20	YS01-GW04A-0309MS	9032902-MS1	9032902-MS171	03/29/09	2212
21	YS01-GW04A-0309MSD	9032902-MSD	9032902-MSD171	03/29/09	2241
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP71 Calibration Date: 03/29/09 Time: 1140

Lab File ID: 9C29001-CCV171 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.3090179	0.3090179	0.001	-16.41	90.00	AVRG	
Chloromethane	0.2704400	0.2060524	0.2060524	0.1	-23.81	90.00	AVRG	J
Vinyl Chloride	0.2300400	0.1999415	0.1999415	0.001	-13.08	20.00	AVRG	
Bromomethane	0.1575000	0.1246797	0.1246797	0.001	-20.84	90.00	AVRG	
Chloroethane	0.0929400	0.0742999	0.0742999	0.001	-20.06	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.2703015	0.2703015	0.001	-10.53	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.2542115	0.2542115	0.001	-13.64	20.00	AVRG	
Carbon disulfide	1.0853200	0.9002200	0.9002200	0.001	-17.05	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1421030	0.1421030	0.001	-5.96	90.00	AVRG	
Acetone	0.0405400	0.0339072	0.0339072	0.001	-16.36	90.00	AVRG	LR
Methyl acetate	0.2628900	0.2319009	0.2319009	0.001	-11.79	90.00	AVRG	
Methylene Chloride	0.2759800	0.2293820	0.2293820	0.001	-16.88	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.2594218	0.2594218	0.001	-15.99	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2222331	0.2222331	0.001	-17.43	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.4413508	0.4413508	0.1	-15.02	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.2541413	0.2541413	0.001	-15.69	90.00	AVRG	
2-butanone	0.0524900	0.0442668	0.0442668	0.001	-15.67	90.00	AVRG	LR
Chloroform	0.5075700	0.4554585	0.4554585	0.001	-10.27	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.3455751	0.3455751	0.001	-11.97	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.2301392	0.2301392	0.001	-11.87	90.00	AVRG	
Benzene	1.0071600	0.8678294	0.8678294	0.001	-13.83	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2416271	0.2416271	0.001	-9.22	90.00	AVRG	
Trichloroethene	0.3300200	0.2906677	0.2906677	0.001	-11.92	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2245751	0.2245751	0.001	-9.10	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3136172	0.3136172	0.001	-5.82	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3110340	0.3110340	0.001	-4.52	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1463749	0.1463749	0.001	-17.77	90.00	AVRG	
Toluene	0.9348000	0.8089995	0.8089995	0.001	-13.46	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3406199	0.3406199	0.001	-7.42	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2151573	0.2151573	0.001	-7.81	90.00	AVRG	
Tetrachloroethene	0.3107900	0.2811320	0.2811320	0.001	-9.54	90.00	AVRG	
2-hexanone	0.1089300	0.0896709	0.0896709	0.001	-17.68	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3076141	0.3076141	0.001	-3.67	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2241209	0.2241209	0.001	-4.73	90.00	AVRG	
Chlorobenzene	0.9596400	0.8897911	0.8897911	0.3	-7.28	90.00	AVRG	
Ethylbenzene	0.4827400	0.4503940	0.4503940	0.001	-6.70	20.00	AVRG	
m,p-Xylene	0.5902800	0.5631066	0.5631066	0.001	-4.60	90.00	AVRG	
o-Xylene	0.5695900	0.5394981	0.5394981	0.001	-5.28	90.00	AVRG	
Styrene	0.9361200	0.9129681	0.9129681	0.001	-2.47	90.00	AVRG	
Bromoform	0.1635300	0.1668220	0.1668220	0.1	2.01	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.4260014	1.4260014	0.001	-4.24	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.5861500	0.5610901	0.5610901	0.3	-4.28	90.00	AVRG	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9C30002-TUN171 BFB Injection Date: 03/30/09

Instrument ID: 5972HP71 BFB Injection Time: 1027

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	45.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.0
175	5.0 - 9.0% of mass 174	6.1 (7.7)1
176	95.0 - 101.0% of mass 174	76.7 (97.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C30002-CCV	9C30002-CCV1R7	03/30/09	1150
02	VBLKHT	9033012-BLK	9033012-BLK171	03/30/09	1229
03	VHTLCS	9033012-BS1	9033012-BS171	03/30/09	1310
04	VHTLCSD	9033012-BSD	9033012-BSD171	03/30/09	1338
05	YS03-GW08B-0309	0903092-21	0903092-21R71	03/30/09	1406
06	YS03-GW21-0309	0903092-22	0903092-22R71	03/30/09	1435
07	YS03-GW08BP-0309	0903092-23	0903092-23R71	03/30/09	1503
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Instrument ID: 5972HP71 Calibration Date: 03/30/09 Time: 1150

Lab File ID: 9C30002-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.3696800	0.3978304	0.3978304	0.001	7.61	90.00	AVRG
Chloromethane	0.2704400	0.1821529	0.1821529	0.1	-32.64	90.00	AVRG
Vinyl Chloride	0.2300400	0.2172002	0.2172002	0.001	-5.58	20.00	AVRG
Bromomethane	0.1575000	0.1312390	0.1312390	0.001	-16.67	90.00	AVRG
Chloroethane	0.0929400	0.0813952	0.0813952	0.001	-12.42	90.00	AVRG
Trichlorofluoromethane	0.3021100	0.2887076	0.2887076	0.001	-4.44	90.00	AVRG
1,1-Dichloroethene	0.2943500	0.2856794	0.2856794	0.001	-2.94	20.00	AVRG
Carbon disulfide	1.0853200	1.0598244	1.0598244	0.001	-2.35	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1636671	0.1636671	0.001	8.31	90.00	AVRG
Acetone	0.0405400	0.0402414	0.0402414	0.001	-0.74	90.00	AVRG
Methyl acetate	0.2628900	0.2558894	0.2558894	0.001	-2.66	90.00	AVRG
Methylene Chloride	0.2759800	0.2717010	0.2717010	0.001	-1.55	90.00	AVRG
rans-1,2-Dichloroethene	0.3088100	0.3074680	0.3074680	0.001	-0.43	90.00	AVRG
ethyl-tert-butyl ether	0.2691400	0.2771136	0.2771136	0.001	2.96	90.00	AVRG
1,1-Dichloroethane	0.5193300	0.5073585	0.5073585	0.1	-2.30	90.00	AVRG
cis-1,2-Dichloroethene	0.3014500	0.2988226	0.2988226	0.001	-0.87	90.00	AVRG
2-butanone	0.0524900	0.0550133	0.0550133	0.001	4.81	90.00	AVRG
Chloroform	0.5075700	0.5139680	0.5139680	0.001	1.26	20.00	AVRG
1,1,1-Trichloroethane	0.3925800	0.3979289	0.3979289	0.001	1.36	90.00	AVRG
Carbon Tetrachloride	0.2611400	0.2887190	0.2887190	0.001	10.56	90.00	AVRG
Benzene	1.0071600	0.9869344	0.9869344	0.001	-2.01	90.00	AVRG
1,2-Dichloroethane	0.2661800	0.2754015	0.2754015	0.001	3.46	90.00	AVRG
Trichloroethene	0.3300200	0.3324685	0.3324685	0.001	0.74	90.00	AVRG
1,2-Dichloropropane	0.2470600	0.2410720	0.2410720	0.001	-2.42	20.00	AVRG
Bromodichloromethane	0.3329800	0.3425418	0.3425418	0.001	2.87	90.00	AVRG
cis-1,3-Dichloropropene	0.3257500	0.3380420	0.3380420	0.001	3.77	90.00	AVRG
4-Methyl-2-pentanone	0.1780100	0.1740339	0.1740339	0.001	-2.23	90.00	AVRG
Toluene	0.9348000	0.8765514	0.8765514	0.001	-6.23	20.00	AVRG
trans-1,3-Dichloropropene	0.3679300	0.3602359	0.3602359	0.001	-2.09	90.00	AVRG
1,1,2-Trichloroethane	0.2333800	0.2162937	0.2162937	0.001	-7.32	90.00	AVRG
Tetrachloroethene	0.3107900	0.3188347	0.3188347	0.001	2.59	90.00	AVRG
2-hexanone	0.1089300	0.1048387	0.1048387	0.001	-3.76	90.00	AVRG
Dibromochloromethane	0.3193300	0.3218802	0.3218802	0.001	0.80	90.00	AVRG
1,2-Dibromoethane	0.2352400	0.2304110	0.2304110	0.001	-2.05	90.00	AVRG
Chlorobenzene	0.9596400	0.9469425	0.9469425	0.3	-1.32	90.00	AVRG
Ethylbenzene	0.4827400	0.4763685	0.4763685	0.001	-1.32	20.00	AVRG
m,p-Xylene	0.5902800	0.5913993	0.5913993	0.001	0.19	90.00	AVRG
o-Xylene	0.5695900	0.5629688	0.5629688	0.001	-1.16	90.00	AVRG
Styrene	0.9361200	0.9341311	0.9341311	0.001	-0.21	90.00	AVRG
Bromoform	0.1635300	0.1704151	0.1704151	0.1	4.21	90.00	AVRG
Isopropyl Benzene	1.4891700	1.4849933	1.4849933	0.001	-0.28	90.00	AVRG
,1,2,2-Tetrachloroethane	0.5861500	0.5498200	0.5498200	0.3	-6.20	90.00	AVRG

4R

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDJ

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9032902-BLK171 Lab Sample ID: 9032902-BLK1

Date Analyzed: 03/29/09 Time Analyzed: 1209

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDJLCS	9032902-BS1	9032902-BS1R	1335
02	YS01-EB01-031309	0903092-03	0903092-03R3	1412
B-03	YS01-GW04-0309	0903092-07	0903092-07R7	1509
04	YS01-GW22P-0309DL	0903092-08RE1	0903092-08D2	1537
05	YS01-GW22-0309DL	0903092-06RE1	0903092-06D3	1605
06	YS01-EB02-031609	0903092-09	0903092-09R7	1633
07	YS01-EB01-031609	0903092-10	0903092-10R7	1702
08	YS01-FB01-031609	0903092-11	0903092-11R7	1730
09	YS01-TB01-031609	0903092-12	0903092-12R7	1758
B-10	YS03-GW15A-0309	0903092-13	0903092-13R7	1826
B-11	YS03-GW26-0309	0903092-14	0903092-14D7	1855
B-12	YS03-GW15-0309	0903092-15	0903092-15R7	1923
B-13	YS03-GW18-0309	0903092-16	0903092-16R7	1951
14	YS03-EB01-031709	0903092-17	0903092-17R7	2020
15	YS03-EB02-031709	0903092-18	0903092-1871	2048
16	YS03-TB01-031709	0903092-19	0903092-1971	2116
B-17	YS03-GW23-0309	0903092-20	0903092-20R7	2144
18	YS01-GW04A-0309MS	9032902-MS1	9032902-MS17	2212
19	YS01-GW04A-0309MSD	9032902-MSD1	9032902-MSD1	2241
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COMMENTS: Chloromethane 0.23J ug/L (0.5)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHT

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9033012-BLK171 Lab Sample ID: 9033012-BLK1

Date Analyzed: 03/30/09 Time Analyzed: 1229

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

C A 2n 1,2,4

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHTLCS	9033012-BS1	9033012-BS17	1310
02	VHTLCSD	9033012-BSD1	9033012-BSD1	1338
B B B B 03	YS03-GW08B-0309	0903092-21	0903092-21R7	1406
B B 04	YS03-GW21-0309	0903092-22	0903092-22R7	1435
B B 05	YS03-GW08BP-0309	0903092-23	0903092-23R7	1503
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COMMENTS: Chloromethane 0.19J (0.5)
acetone 1.3J (2.5)
2-hexanone 0.72J (0.5)
1,2,4-trichlorobenzene 0.16J (0.5)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDH

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Lab File ID: 9032035-BLK173_T Lab Sample ID: 9032035-BLK1

Date Analyzed: 03/20/09 Time Analyzed: 2243

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP73

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDHLCS	9032035-BS1	9032035-BS17	2312
02	VDHLCSD	9032035-BSD1	9032035-BSD1	2341
B 03	YS01-GW12-0309	0903092-01	0903092-0173	0730
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COMMENTS: Methylene Chl 0.13J ug/L (0.5)

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5	0.0	6.189	124	30-155
Chloromethane	5	0.0	5.358	107	40-125
Vinyl Chloride	5	0.0	6.675	134	50-145
Bromomethane	5	0.0	5.892	118	30-145
Chloroethane	5	0.0	6.602	132	60-135
Trichlorofluoromethane	5	0.0	6.715	134	60-145
1,1-Dichloroethene	5	0.0	5.693	114	70-130
Carbon disulfide	5	0.0	6.346	127	35-160
1,1,2-trichloro-1,2,2-t	5	0.0	6.276	126	50-150
Acetone	25	11.63	47.69	144	30-155
Methyl acetate	5	0.0	6.312	126	50-150
Methylene Chloride	5	0.0	6.109	122	55-140
trans-1,2-Dichloroethen	5	0.0	5.8	116	60-140
Methyl-tert-butyl ether	5	0.0	6.591	132*	65-125
1,1-Dichloroethane	5	0.0	6.537	131	70-135
cis-1,2-Dichloroethene	5	0.21	6.3	122	70-125
2-butanone	25	0.0	35.73	143	30-150
Chloroform	5	0.0	6.5	130	65-135
1,1,1-Trichloroethane	5	0.0	6.383	128	65-130
Carbon Tetrachloride	5	0.0	6.558	131	65-145
Benzene	5	0.0	6.044	121*	80-120
1,2-Dichloroethane	5	0.0	6.618	132*	70-130
Trichloroethene	5	3.667	10.68	140*	70-125
1,2-Dichloropropane	5	0.0	6.404	128*	75-125
Bromodichloromethane	5	0.0	6.427	129*	75-120
cis-1,3-Dichloropropene	5	0.0	6.118	122	70-130
4-Methyl-2-pentanone	25	0.0	36.11	144*	60-135
Toluene	5	0.0	5.978	120	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5	0.0	6.658	133	55-140
1,1,2-Trichloroethane	5	0.0	5.662	113	75-152
Tetrachloroethene	5	0.0	5.724	114	45-150
2-hexanone	25	0.0	36.48	146*	55-130
Dibromochloromethane	5	0.0	5.866	117	60-135
1,2-Dibromoethane	5	0.0	5.945	119	80-120
Chlorobenzene	5	0.0	5.933	119	80-120
Ethylbenzene	5	0.0	6.139	123	75-125
Styrene	5	0.0	5.983	120	65-135
Bromoform	5	0.0	5.66	113	70-130
Isopropyl Benzene	5	0.0	6.447	129*	75-125
1,1,2,2-Tetrachloroetha	5	0.0	5.86	117	80-130
1,3-Dichlorobenzene	5	0.0	5.595	112	75-125
1,4-Dichlorobenzene	5	0.0	5.656	113	75-125
1,2-Dichlorobenzene	5	0.0	5.716	114	70-120
1,2-Dibromo-3-Chloropro	5	0.0	6.113	122	50-130
1,2,4-Trichlorobenzene	5	0.0	5.981	120	65-135
1,2-Dichloroethene (tot	10	0.2	12	118	30-155
Xylene (total)	15	0.0	18.96	126	50-150
Cyclohexane	5	0.0	6.26	125	50-150
Methylcyclohexane	5	0.0	6.299	126	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	5.725	115	8	30	30-155
Chloromethane	5	4.861	97	10	30	40-125
Vinyl Chloride	5	5.859	117	13	30	50-145
Bromomethane	5	5.538	111	6	30	30-145
Chloroethane	5	5.726	115	14	30	60-135
Trichlorofluoromethane	5	5.94	119	12	30	60-145
1,1-Dichloroethene	5	5.512	110	3	30	70-130
Carbon disulfide	5	5.917	118	7	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.754	115	9	30	50-150
Acetone	25	31.18	78	42*	30	30-155
Methyl acetate	5	5.673	113	11	30	50-150
Methylene Chloride	5	5.689	114	7	30	55-140
trans-1,2-Dichloroethen	5	5.5	110	5	30	60-140
Methyl-tert-butyl ether	5	6.162	123	7	30	65-125
1,1-Dichloroethane	5	6.025	121	8	30	70-135
cis-1,2-Dichloroethene	5	6.2	120	2	30	70-125
2-butanone	25	32.34	129	10	30	30-150
Chloroform	5	6.057	121	7	30	65-135
1,1,1-Trichloroethane	5	5.865	117	8	30	65-130
Carbon Tetrachloride	5	6.042	121	8	30	65-145
Benzene	5	5.647	113	7	30	80-120
1,2-Dichloroethane	5	6.123	122	8	30	70-130
Trichloroethene	5	13.43	195*	23	30	70-125
1,2-Dichloropropane	5	5.916	118	8	30	75-125
Bromodichloromethane	5	5.929	119	8	30	75-120
cis-1,3-Dichloropropene	5	5.649	113	8	30	70-130
4-Methyl-2-pentanone	25	32.82	131	10	30	60-135
Toluene	5	5.637	113	6	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix Spike - Sample No.: YS01-GW04A-0309

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	6.027	121	10	30	55-140
1,1,2-Trichloroethane	5	5.331	107	6	30	75-152
Tetrachloroethene	5	5.445	109	5	30	45-150
2-hexanone	25	32.72	131*	11	30	55-130
Dibromochloromethane	5	5.393	108	8	30	60-135
1,2-Dibromoethane	5	5.469	109	8	30	80-120
Chlorobenzene	5	5.636	113	5	30	80-120
Ethylbenzene	5	5.74	115	7	30	75-125
Styrene	5	5.596	112	7	30	65-135
Bromoform	5	5.288	106	7	30	70-130
Isopropyl Benzene	5	5.972	119	8	30	75-125
1,1,2,2-Tetrachloroetha	5	5.543	111	6	30	80-130
1,3-Dichlorobenzene	5	5.382	108	4	30	75-125
1,4-Dichlorobenzene	5	5.393	108	5	30	75-125
1,2-Dichlorobenzene	5	5.426	109	5	30	70-120
1,2-Dibromo-3-Chloropro	5	5.744	115	6	30	50-130
1,2,4-Trichlorobenzene	5	5.568	111	7	30	65-135
1,2-Dichloroethene (tot	10	12	118	0	30	30-155
Xylene (total)	15	17.82	119	6	30	50-150
Cyclohexane	5	5.821	116	7	30	50-150
Methylcyclohexane	5	5.815	116	8	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 49 outside limits
Spike Recovery: 11 out of 98 outside limits

COMMENTS: _____

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS01-GW22-0309
Duplicate Sample ID: YS01-GW22P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
vinyl chloride	3.6	3.6	0
1,1-dichloridethene	8.3	8.6	4
carbon disulfide *	0.37	0.39	5
trans-1,2-dichloroethene	5.6	5.3	6
1,1-dichloroethane*	0.26	0.26	0
benzene*	0.24	0.24	0
1,1,2-trichloroethane	1.7	1.6	6
tetrachloroethene*	0.21	0.21	0
cis-1,2-dichloroethene	3000	2900	3
trichloroethene	18000	17000	6
1,2-dichloroethene(total)	3000	2800	7
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COMMENTS: Per QAPP qualifications <25% qualifications were required.
No qualifications.

* result below the CRQL

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS01-GW22-0309
Duplicate Sample ID: YS01-GW22P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
dichlorodifluoromethane*	0.15	0.15	0
cis-1,2-dichloroethene*	0.12	0.14	15
trichloroethene	4.9	5	2
1,2-dichloroethene (total)*	0.12	0.13	8
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COMMENTS: Per QAPP qualifications <25% qualifications were required.
No qualifications.

* result below the CRQL

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0903092
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-GW12-0309, YS01-GW14-0309, YS01-EB01-031309, YS01-TB01-031309, YS01-GW04A-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS01-EB02-031609, YS01-EB01-031609, YS01-FB01-031609, YS01-TB01-031609, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-EB01-031709, YS03-EB02-031709, YS03-TB01-031709, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW21-0309 AND YS03-GW08BP-0309

The 23 aqueous samples listed above were received intact, refrigerated between 0.1°C and 1.1°C, with proper documentation, in sealed shipping containers, on March 14, 17, 18 and 19, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903092 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. In the initial analyses of samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309, the on-column amount exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The samples were reanalyzed using a smaller aliquot of raw sample to bring the on-column amount into range. We have reported both analyses of samples YS01-GW12-0309, YS01-GW22-0309 and YS01-GW22P-0309. Due to the results of a screen sample YS03-GW26-0309 was initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 91 on 3/25/09 associated with the BFB injected at 1140. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VI. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard. Manual integrations were performed on 9C25004-CAL191, 9C25004-CAL291, 9C28002-CAL171, 9C28002-CAL271, 9C28002-CAL471, 9C2003-CAL173, 9C2003-CAL273, 9C2003-CAL3R273, 9C2003-CAL573, 9C25004-CAL191, 9C25004-CAL291, 9C30002-CCV1R71, and YS01-GW22-0309 and YS01-GW22P-0309 process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS01-GW04A-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 2, 2009

This SDG contains dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/13, 3/16, 3/17, 3/18
Received Date: 3/14-3/19
Prep. Dates: no prep – dissolved; 3/31 ICP total; 3/20 Hg
Analysis Dates: 3/27 dissolved, 4/7 total ICP; 3/24 Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

  L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	nickel	1.003B ug/L	5.015 ug/L	B	BL
	zinc	5.517B ug/L	27.585 ug/L	B	BL
ICB/CCB – dissolved metals	aluminum	74.2 B ug/L	371 ug/L	B	BL
	antimony	3.1B ug/L	15.5 ug/L	B	BL
	arsenic	2.5B ug/L	12.5 ug/L	B	BL
	beryllium	1.9B ug/L	9.5 ug/L	B	BL
	cadmium	0.9B ug/L	4.5 ug/L	B	BL
	cobalt	2.5b ug/L	12.5 ug/L	B	BL
	iron	29.2B ug/L	146 ug/L	B	BL
	selenium	2.7B ug/L	13.5 ug/L	B	BL
	thallium	4.7B ug/L	23.5 ug/L	B	BL
	copper	-1.5 ug/L	≤ 10X MDL (8.0 ug/L)	L/UL	BL
YS03-FB01-031909 –dissolved	potassium	592B ug/L	2960 ug/L	B	BL
YS01-EB01-031309-dissolved	manganese	0.43B ug/L	2.15 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS01-GW14-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	aluminum	B	BL
YS01-GW04A-0309	antimony	B	BL
YS01-GW04A-0309	arsenic	B	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	beryllium	B	BL
YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cadmium	B	BL
YS01-GW14-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	cobalt	B	BL
YS01-GW04A-0309	iron	B	BL
YS01-GW22-0309	selenium	B	BL
YS01-GW14-0309	thallium	B	BL
all field samples	copper	L/UL	BL
YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309, YS03-GW23-0309, YS03-GW08B-0309, YS03-GW08BP-0309, YS03-GW21-0309	potassium	B	BL
YS01-GW12-0309	manganese	B	BL

added flags for nickel & zinc to table in dv rep. JAC 61009

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	3.658B ug/L	18.29 ug/L	B	BL
ICB/CCB – total metals	lead	-1.7B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	beryllium	-0.5B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
YS03-EB01-031709	iron	57.1B ug/L	285.5 ug/L	B	BL
	manganese	2.2B ug/L	11 ug/L	B	BL
YS03-EB01-031809	chromium	0.77B ug/L	3.85 ug/L	B	BL
	nickel	0.75B ug/L	3.75 ug/L	B	BL
YS03-EB02-031809	chromium	0.83B ug/L	4.15 ug/L	B	BL
YS01-FB01-030909	nickel	32.5B ug/L	162.5 ug/L	B	BL
YS03-FB01-031909	beryllium	1.1B ug/L	5.5 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
all total metals field samples	lead	L/UL	BL
YS01-GW12-0309, YS01-GW14-0309, YS01-GW22-0309, YS01-GW04-0309, YS01-GW22P-0309, YS03-GW15A-0309, YS03-GW26-0309, YS03-GW15-0309, YS03-GW18-0309	beryllium	L/UL	BL
YS03-GW18-0309	iron	B	BL
YS03-GW18-0309	manganese	B	BL
YS03-GW23-0309, YS03-GW08B-0309	chromium	B	BL
YS03-GW23-0309, YS01-GW12-0309, YS01-GW14-0309	nickel	B	BL
YS03-GW21-0309	beryllium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS01-GW04A-0309 analyzed for total metals exhibited non-compliant recoveries for Se in both the MS & MSD (using SAP QC limits of 80-120). All total metals samples results for Se were qualified as biased low L/UL. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS01-GW04A-0309 analyzed for the ICP dissolved metals exhibited compliant recoveries for all analytes. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable. No qualifications were required.

SERIAL DILUTIONS

The serial dilution analyses of samples YS01-GW04A-0309 for total metals exhibited acceptable %Ds for all analytes except potassium (14.7). All reported results for potassium in the total metals field samples were qualified as estimated J/UJ.

The serial dilution analyses of samples YS01-GW04A-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (20.3%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: YS03-GW08B-0309 Duplicate Sample ID: YS03-GW08BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	134000	132000	2%
manganese	32.8	34.9	6%
sodium	10400	10100	3%

Comments: No qualifications were required.

Sample ID: YS01-GW22-0309 Duplicate Sample ID: YS01-GW22P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	582	202	97%
calcium	138000	129000	7%
iron	1500	382	119%
magnesium	5200	4800	8%
manganese	125	98.2	24%
sodium	8320	8370	1%

Comments: Flag aluminum and iron as estimated J in field duplicate pair.

Total Metals

Sample ID: YS03-GW08B-0309 Duplicate Sample ID: YS03-GW08BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	121000	121000	0%
iron	280	306	9%
manganese	39.2	39	1%
sodium	8660	8950	3%

Comments: No qualifications were required.

Sample ID: YS01-GW22-0309 Duplicate Sample ID: YS01-GW22P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1420	3920	94%
calcium	125000	124000	1%
iron	3960	5280	29%
manganese	103	103	0%
sodium	7540	7130	6%

Comments: Flag aluminum and iron as estimated J in field duplicate pair.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS03-GW18-0309
COMPOUND: magnesium
CONCENTRATION: 590 ug/L
%Solids – na
50 ml

Raw Data result: 589.6628 ug/L

589.6628 ug/L * 0.05L/0.05L = 589.6628 ug/L

Total Metals

EPA SAMPLE ID: YS01-GW04-0309
COMPOUND: manganese
CONCENTRATION: 72.3 ug/L
%Solids – na
50 ml

Raw Data result: 72.26426 ug/L

72.26426 ug/L * 0.05L/0.05L = 72.26426 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JCleveland **Date:** 6/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903092

The indicated Sample Delivery Group (SDG) consisting of twenty (20) water samples was received into the laboratory information management system (LIMS) on March 14, 17, 18, and 19, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903092-05 ID YS01-GW04A-0309S and YS01-GW04A-0309SD were inside control limits for the requested analytes except selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903092-05 ID YS01-GW04A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903092-05 ID YS01-GW04A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forneto for Susan Bass

Susan W. Bass
Senior Chemist
April 7, 2009

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903093

The indicated Sample Delivery Group (SDG) consisting of twenty (20) dissolved water samples was received into the laboratory information management system (LIMS) on March 14, 17, 18, and 19, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903093-04 ID YS01-GW04-0309S and YS01-GW04-0309SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903093-04 ID YS01-GW04-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903093-04 ID YS01-GW04-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
March 31, 2009

SW846 - METALS

3

BLANKS

Totals metals

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	3.658	B	P ✓
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.420	U	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-207.6	B	-180.9	B	-184.0	B	181.9	B	-193.690	B	P ✓
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	-1.7	B	-2.1	B	-2.3	B	-1.7	B	1.400	U	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	224.012	B	P NQ
Thallium	4.6	B NQ	3.5	B	3.8	B NQ	3.8	B NQ	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

See ICB

See ICB

~~GW04A~~ YS01-GW04A YS01-GW12 GW14 GW22 GW04

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2 (5)	C	3 (6)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			2.4	U	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			-0.5	B	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-195.4	B See ICB	209.0	B See ICB	199.9	B See ICB			P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	-2.0	B See ICB	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U							CV
Nickel			0.7	U	0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			4.0	B NQ	3.3	U	3.9	B NQ			P
Vanadium			0.6	U	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

YS01-GW12 → GW14 → GW22 → GW04

YS01-GW22P
YS03-GW15A → GW26-0309 → GW15 → GW18

YS03-GW23 → GW08B → GW21 → GW08BP

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW04A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2029.7120		161.6319	B	2000.00	93.4		P
Antimony	75 - 125	494.4866		5.1941	B	500.00	97.9		P
Arsenic	75 - 125	35.6030		2.2000	U	40.00	89.0		P
Barium	75 - 125	2042.5040		10.0294	B	2000.00	101.6		P
Beryllium	75 - 125	49.9753		0.4200	U	50.00	100.0		P
Cadmium	75 - 125	48.8425		0.6400	U	50.00	97.7		P
Chromium	75 - 125	200.5329		4.0320	B	200.00	98.3		P
Cobalt	75 - 125	492.3300		1.6000	U	500.00	98.5		P
Copper	75 - 125	250.6859		0.9131	B	250.00	99.9		P
Iron	75 - 125	1276.1440		319.8321		1000.00	95.6		P
Lead	75 - 125	19.1137		1.4000	U	20.00	95.6		P
Manganese	75 - 125	520.3440		26.9034		500.00	98.7		P
Mercury	75 - 125	1.1900		0.1000	U	1.00	119.0		CV
Nickel	75 - 125	486.2415		2.1160	B	500.00	96.8		P
Selenium	75 - 125	7.2958		2.2000	U	10.00	73.0	N	P
Silver	75 - 125	46.5433		0.6200	U	50.00	93.1		P
Thallium	75 - 125	46.7046		3.3000	U	50.00	93.4		P
Vanadium	75 - 125	504.5857		0.5700	U	500.00	100.9		P
Zinc	75 - 125	489.5227		5.2000	U	500.00	97.9		P

JMJ

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW04A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2024.2650		161.6319	B	2000.00	93.1		P
Antimony	75 - 125	495.6350		5.1941	B	500.00	98.1		P
Arsenic	75 - 125	37.3643		2.2000	U	40.00	93.4		P
Barium	75 - 125	2062.0530		10.0294	B	2000.00	102.6		P
Beryllium	75 - 125	50.1570		0.4200	U	50.00	100.3		P
Cadmium	75 - 125	48.8818		0.6400	U	50.00	97.8		P
Chromium	75 - 125	204.1920		4.0320	B	200.00	100.1		P
Cobalt	75 - 125	493.9054		1.6000	U	500.00	98.8		P
Copper	75 - 125	252.8952		0.9131	B	250.00	100.8		P
Iron	75 - 125	1286.9230		319.8321		1000.00	96.7		P
Lead	75 - 125	18.3528		1.4000	U	20.00	91.8		P
Manganese	75 - 125	525.5657		26.9034		500.00	99.7		P
Mercury	75 - 125	1.1500		0.1000	U	1.00	115.0		CV
Nickel	75 - 125	488.0742		2.1160	B	500.00	97.2		P
Selenium	75 - 125	7.9178		2.2000	U	10.00	79.2		P
Silver	75 - 125	47.5113		0.6200	U	50.00	95.0		P
Thallium	75 - 125	45.2082		3.3000	U	50.00	90.4		P
Vanadium	75 - 125	509.3906		0.5700	U	500.00	101.9		P
Zinc	75 - 125	495.7763		5.2000	U	500.00	99.2		P

Comments:

SW846 - METALS

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS01-GW04A-0309A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Selenium		6.72		2.20	U	10.0	67.2		P

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-GW04A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903092

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	161.63	B	267.00	U	100.0		P
Antimony	5.19	B	12.00	U	100.0		P
Arsenic	2.20	U	11.00	U			P
Barium	10.03	B	10.38	B	3.5		P
Beryllium	0.42	U	2.10	U			P
Cadmium	0.64	U	3.20	U			P
Calcium	25150.64		23261.46	B	7.5		P
Chromium	4.03	B	5.22	B	29.5		P
Cobalt	1.60	U	8.00	U			P
Copper	0.91	B	6.31	B	593.4		P
Iron	319.83		389.32	B	21.7		P
Lead	1.40	U	7.00	U			P
Magnesium	425.23	B	425.34	B	0.0		P
Manganese	26.90		26.61	B	1.1		P
Mercury	0.10	U	0.50	U			CV
Nickel	2.12	B	3.35	U	100.0		P
Potassium	1073.37	B	915.73	B	14.7	E	P
Selenium	2.20	U	11.00	U			P
Silver	0.62	U	3.10	U			P
Sodium	5773.59		5237.41	B	9.3		P
Thallium	3.30	U	18.95	B	100.0		P
Vanadium	0.57	U	2.85	U			P
Zinc	5.20	U	26.00	U			P

JWJ

SW846 - METALS

3

BLANKS

Dissolved

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.5	B	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	-0.5	B	0.4	U	0.4	U	-0.677	B	P NQ
Cadmium	0.6	U	0.6	U	0.7	B	0.7	B	0.640	U	P
Calcium	-196.7	B NQ	-216.1	B	-195.2	B	-188.6	B NQ	-209.968	B	P NQ
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	1.1	B	0.9	B	1.003	B	P ✓
Potassium	9.9	U	9.9	U	9.9	U	11.7	B NQ	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.7	B	3.3	U	4.0	B NQ	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.517	B	P ✓

GW04A1

✓flag as noted in report

SW846 - METALS

3

BLANKS

Dissolved

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U	66.0	B	74.2	B	Δ Al		P
Antimony			3.1	B	2.4	U	2.4	U	/ Sb		P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	B	0.3	U	0.3	U			P
Beryllium			0.4	U	1.3	B	1.9	B	X Be		P
Cadmium			0.8	B	0.7	B	0.9	B	□ Cd		P
Calcium			-185.7	B	-191.1	B	-212.7	B			P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	B	2.5	B	V Co		P
Copper			0.8	U	0.8	U	-1.3	B	~ Cu		P
Iron			26.3	B	29.2	B	24.6	U	* Fe		P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U							CV
Nickel			0.7	U	0.7	U	0.7	U			P
Potassium			14.8	B	16.2	B	12.4	B			P
Selenium			2.4	B	2.7	B	2.2	U	O Se		P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	4.7	B	3.3	U	◊ Tl		P
Vanadium			0.6	U	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

YS01-GW04A/ * YS01-GW12 × 14 × V ◊ 22 O X 04 Δ X 22P X Δ

YS03-GW15A × YS03-GW08BP Δ X □ V 21 Δ X □ V 26 Δ X ↓ 15 Δ X V 18 X Δ 23 Δ X □ V 08B V □ X Δ

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Dissolved

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			55.2	B							P
Antimony			2.4	U							P
Arsenic			2.2	U							P
Barium			0.3	U							P
Beryllium			1.6	B							P
Cadmium			0.8	B							P
Calcium			-214.7	B							P
Chromium			0.7	U							P
Cobalt			1.9	B							P
Copper			-1.5	B							P
Iron			24.6	U							P
Lead			1.4	U							P
Magnesium			31.0	U							P
Manganese			0.4	U							P
Nickel			0.7	U							P
Potassium			10.4	B							P
Selenium			2.2	U							P
Silver			0.6	U							P
Sodium			159.5	U							P
Thallium			3.3	U							P
Vanadium			0.6	U							P
Zinc			5.2	U							P

YS03-GW088P ↓ 21 > see prev. page for flags

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-GW04A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903093

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	53.40	U	267.00	U			P
Antimony	2.77	B	21.61	B	680.1		P
Arsenic	2.20	U	11.00	U			P
Barium	9.32	B	11.02	B	18.2		P
Beryllium	0.42	U	2.10	U			P
Cadmium	0.64	U	3.20	U			P
Calcium	27243.56		26190.93		3.9		P
Chromium	0.70	U	3.50	U			P
Cobalt	1.60	U	8.00	U			P
Copper	1.16	B	4.20	U	100.0		P
Iron	31.09	B	144.09	B	363.5		P
Lead	1.40	U	7.00	U			P
Magnesium	470.23	B	433.72	B	7.8		P
Manganese	14.38		14.59	B	1.5		P
Mercury	0.10	U	0.50	U			CV
Nickel	1.00	B	3.35	U	100.0		P
Potassium	1393.19	B	1110.89	B	20.3	E	P
Selenium	2.20	U	11.00	U			P
Silver	0.62	U	3.10	U			P
Sodium	6246.53		5923.57	B	5.2		P
Thallium	3.30	U	16.50	U			P
Vanadium	0.57	U	2.85	U			P
Zinc	11.06	B	67.37	B	509.1		P

JW

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 14, 2009
SDG # 0903113 & 0903114, CompuChem
NWS Yorktown

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903113 and 0903114. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles and 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS03-EB01-031809	0903113-02	water	X	X	X
YS03-EB01-031909	0903113-11	water	X	X	X
YS03-EB01-032009	0903113-18	water	X	X	X
YS03-EB02-031809	0903113-03	water	X	X	X
YS03-EB02-031909	0903113-10	water	X	X	X
YS03-EB02-032009	0903113-19	water	X	X	X
YS03-FB01-031909	0903113-09	water	X	X	X
YS03-GW06-0309	0903113-05	water	X	X	X
YS03-GW08A-0309	0903113-01	water	X	X	X
YS03-GW19-0309	0903113-06	water	X	X	X
YS03-GW20-0309	0903113-16	water	X	X	X
YS03-GW20A-0309	0903113-15	water	X	X	X
YS03-GW22-0309	0903113-08	water	X	X	X
YS03-GW25-0309	0903113-13	water	X	X	X
YS03-GW25P-0309	0903113-17	water	X	X	X
YS03-GW27-0309	0903113-14	water	X	X	X
YS03-GW28-0309	0903113-07	water	X	X	X
YS03-TB01-031809	0903113-04	water	X		
YS03-TB01-031909	0903113-12	water	X		
YS03-TB01-031909	0903113-20	water	X		
YS03-GW08A-0309 MS	0903113-01 MS	water	X	X	X
YS03-GW08A-0309 MSD	0903113-01 MSD	water	X	X	X

The following quality control samples were provided with this SDG: sample YS03-TB01-031809, YS03-TB01-031909 and YS03-TB01-031909-trip blanks; samples YS03-

EB01-031809, YS03-EB01-031909, YS03-EB01-032009, YS03-EB01-032009, YS03-EB02-031809, YS03-EB02-031909, and YS03-EB02-032009-equipment blanks; sample YS03-FB01-031909-field blank; and sample YS03-GW25P-0309-field duplicate of sample YS03-GW25-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Sample Condition
- GC/MS Tuning *
- GC Performance *
- Initial/Continuing Calibrations
- CRI Standards *
- Interference Check Sample *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions
- Field Duplicates
- Identification/Quantitation *
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required some non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

One sample contained headspace that resulted in qualifying the data as estimated.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total & Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The MS/MSD pair analyzed for the dissolved metals exhibited one analyte with low recoveries. This analyte was qualified as biased low L/UL in the dissolved metals field samples.

The serial dilution analysis exhibited non-compliant %Ds in the total and dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the total and dissolved metals field samples.

One of the submitted field duplicate pairs exhibited non-compliant RPDs for one analyte in the dissolved analysis. This analyte was flagged as estimated J in the field duplicate pair only.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/18-20/09 and samples were received at the laboratory 03/19-21/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Sample Condition

VOA

All sample vials for YS03-GW28-0309 contained headspace; therefore results were qualified as biased low (L/UL).

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/28/09	acetone	0.0405	all samples	L/R	ICL
CC 03/30/09	acetone	0.0402/0.0363	all samples	L/R	CCL
CC 03/31/09	chloromethane	-32.64/-28.12		J	CCL
CC 03/31/09	2-butanone	0.0435	YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009, YS03-TB01-032009	L/R	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.19J ug/L	0.50 ug/L	0.95
	acetone	1.3J	2.5	13
VBLKHV	chloromethane	0.16J	0.5	0.8
YS03-TB01-031909	chloromethane	0.19J	0.5	0.95
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS03-TB01-032009	chloromethane	0.19J	0.5	0.95
	acetone	4.8	2.5	48
YS03-EB01-031909	chloromethane	0.24J	0.5	1.2
	acetone	9.4	2.5	94
	methylene chloride	1.2	0.5	12
	2-butanone	1.4J	2.5	14
	toluene	0.24J	0.5	1.2
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	toluene	0.34J	0.5	1.7
YS03-EB01-032009	chloromethane	0.22J	0.5	1.1
	acetone	33	2.5	330
	methylene chloride	1.9	0.5	19
	2-butanone	5.5	2.5	55
	toluene	0.43J	0.5	2.2
YS03-EB02-031909	chloromethane	0.17J	0.5	0.85
	acetone	15	2.5	150
	methylene chloride	1.4	0.5	14
	2-butanone	2.8	2.5	28
	toluene	0.23J	0.5	1.2
YS03-EB02-032009	chloromethane	0.19J	0.5	0.95
	acetone	34	2.5	340
	methylene chloride	1.9	0.5	19
	2-butanone	5.6	2.5	56
	toluene	0.42J	0.5	2.1
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309	acetone	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	B	BL
YS03-GW20-0309	2-butanone	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	beryllium	0.771B ug/L	3.855 ug/L	B	BL
	chromium	0.865B ug/L	4.325 ug/L	B	BL
	copper	-1.629B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	lead	-1.867B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	nickel	0.885B ug/L	4.425 ug/L	B	BL
ICB/CCB	antimony	2.4B ug/L	12 ug/L	B	BL
	vanadium	0.6B ug/L	3.0 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	beryllium	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	B	BL
all total metals field samples	copper	L/UL	BL
all total metals field samples	lead	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	B	BL
all total metals field samples	antimony	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	potassium	575.247B ug/L	2876 ug/L	B	BL
CCB – dissolved metals	aluminum	57.4B ug/L	287 ug/L	B	BL
	beryllium	0.6B ug/L	3.0 ug/L	B	BL
	chromium	1.8B ug/L	9 ug/L	B	BL
	cobalt	0.7B ug/L	3.5 ug/L	B	BL
	iron	31.7B ug/L	158.5 ug/L	B	BL
	nickel	2.2B ug/L	11 ug/L	B	BL
	vanadium	1.0B ug/L	5 ug/L	B	BL
	zinc	1.9B ug/L	9.5 ug/L	B	BL
YS03-EB01-031809	silver	0.93B ug/L	4.65 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	potassium	B	BL
YS06-GW19-0309, YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	aluminum	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	beryllium	B	BL
YS06-GW25-0309	chromium	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	cobalt	B	BL
YS06-GW06-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309	iron	B	BL
YS06-GW06-0309, YS06-GW20-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	nickel	B	BL
YS06-GW06-0309, YS06-GW22-0309, YS06-GW27-0309, YS06-GW28-0309	vanadium	B	BL
YS06-GW08A-0309, YS06-GW06-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	zinc	B	BL
YS06-GW08A-0309	silver	B	BL

Total and Dissolved Metals

The matrix spike analysis of sample YS03-GW08A-0309 for dissolved metals exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS03-GW08A-0309	selenium	all dissolved metals field samples	63.7/70.7	L/UL	MSL

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS03-GW08A-0309	potassium	all field samples	11.8 123.1	J/UJ	SD

Field Duplicates

Total & Dissolved Metals

The field duplicate pair submitted in this SDG exhibited non-compliant RPDs for one analyte in the dissolved metals analysis. Specific action is noted in the following table.

FD Pair	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS03-GW25-0309, YS03-GW25P-0309	selenium	YS03-GW25-0309, YS03-GW25P-0309 (dissolved)	30	J	FD

*Note – this analyte was previously flagged due to low matrix spike recoveries

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) were met. No validation action was required.

Instrument P4 – Total & Dissolved

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS03-GW28-0309	all results	+/-	L/UL	OT
all samples	acetone	+/-	L/R	ICL
all samples	acetone*	+/-	L/R	CCL
all samples	chloromethane	+	J	CCL
YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009, YS03-TB01-032009	2-butanone	+/-	L/R	CCL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	+	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309	acetone	+	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	+	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	+	B	BL
YS03-GW20-0309	2-butanone	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	beryllium	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	+ up to action level	B	BL
all total metals field samples	copper	+/- up to action level	L/UL	BL
all total metals field samples	lead	+/- up to action level	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	+ up to action level	B	BL
all total metals field samples	antimony	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	+ up to action level	B	BL
all total metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all dissolved metals field samples	potassium	+ up to action level	B	BL
YS06-GW19-0309, YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	aluminum	+ up to action level	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	beryllium	+ up to action level	B	BL
YS06-GW25-0309	chromium	+ up to action level	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	cobalt	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309	iron	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW20-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	nickel	+ up to action level	B	BL
YS06-GW06-0309, YS06-GW22-0309, YS06-GW27-0309, YS06-GW28-0309	vanadium	+ up to action level	B	BL
YS06-GW08A-0309, YS06-GW06-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	zinc	+ up to action level	B	BL
YS06-GW08A-0309	silver	+ up to action level	B	BL
all dissolved metals field samples	selenium	+/-	L/UL	MSL
all dissolved metals field samples	potassium *	+/-	J/UJ	SD
YS03-GW25-0309, YS03-GW25P-0309	selenium*	+	J	FD
all samples	all analytes	+B	J	

*selenium was flagged due to matrix spike recoveries and potassium was flagged for blank contamination in field samples

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.2	~~J~~ JCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	6.8	~~B~~ L JCL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	3.2	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	2	J
67-66-3	Chloroform	0.10	0.5	0.23	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.11	J
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.34	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

UJ 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.24	~~J~~ BJ	CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	9.4		LICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	1.2		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	1.4	~~J~~ L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.24	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	0.61	J	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

VW 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-11
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	0.15	JB
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	0.19	J

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)

Soil Aliquot Volume: _____ (uL)

Method Blank: 9033102-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.22	~~U~~ J	CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	33	L	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	1.9		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	5.5	L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.43	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-18
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

06040

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	7.4	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	3.1	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	1.9	J
67-66-3	Chloroform	0.10	0.5	0.22	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.34	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	15	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	1.4	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	2.8	
67-66-3	Chloroform	0.10	0.5	0.1	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.23	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-10
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D60409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U	
74-87-3	Chloromethane	0.10	0.5	0.19	~~J~~	J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U	
74-83-9	Bromomethane	0.47	0.5	ND	U	
75-00-3	Chloroethane	0.13	0.5	ND	U	
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U	
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U	
75-15-0	Carbon disulfide	0.10	0.5	ND	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U	
67-64-1	Acetone	1.2	2.5	34	k	ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U	
75-09-2	Methylene Chloride	0.10	0.5	1.9		
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U	
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U	
78-93-3	2-butanone	0.50	2.5	5.6	L	CCL
67-66-3	Chloroform	0.10	0.5	ND	U	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U	
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U	
71-43-2	Benzene	0.10	0.5	ND	U	
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U	
79-01-6	Trichloroethene	0.10	0.5	ND	U	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U	
75-27-4	Bromodichloromethane	0.10	0.5	ND	U	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U	
108-88-3	Toluene	0.10	0.5	0.42	J	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U	
127-18-4	Tetrachloroethene	0.11	0.5	ND	U	
591-78-6	2-hexanone	0.50	2.5	ND	U	
124-48-1	Dibromochloromethane	0.10	0.5	ND	U	

ND = Not Detected
Q = Qualifier

FORM I VOA

LM 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-EB02-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-19
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WC 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-FB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.14	~~J~~ JCCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	4.2	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	8.1	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	0.59	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.74	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-FB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0971
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.11	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW06-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.15	J
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.49	J
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW06-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.15	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.6	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.12	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

CW 060404

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW19-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 16.7

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	1.7	8.3	ND	U
74-87-3	Chloromethane	1.7	8.3	2.6	~~JB~~ B BL
75-01-4	Vinyl Chloride	1.7	8.3	58	
74-83-9	Bromomethane	7.8	8.3	ND	U
75-00-3	Chloroethane	2.2	8.3	ND	U
75-69-4	Trichlorofluoromethane	1.7	8.3	ND	U
75-35-4	1,1-Dichloroethene	1.7	8.3	3.4	J
75-15-0	Carbon disulfide	1.7	8.3	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	2.5	8.3	ND	U
67-64-1	Acetone	19	42	ND	U
79-20-9	Methyl acetate	1.7	8.3	ND	U
75-09-2	Methylene Chloride	1.7	8.3	1.9	~~J~~ B BL
156-60-5	trans-1,2-Dichloroethene	1.7	8.3	2.2	J
1634-04-4	Methyl-tert-butyl ether	1.7	8.3	ND	U
75-34-3	1,1-Dichloroethane	1.7	8.3	ND	U
156-59-2	cis-1,2-Dichloroethene	1.7	8.3	330	
78-93-3	2-butanone	8.3	42	ND	U
67-66-3	Chloroform	1.7	8.3	ND	U
71-55-6	1,1,1-Trichloroethane	1.7	8.3	ND	U
56-23-5	Carbon Tetrachloride	1.7	8.3	ND	U
71-43-2	Benzene	1.7	8.3	ND	U
107-06-2	1,2-Dichloroethane	1.7	8.3	ND	U
79-01-6	Trichloroethene	1.7	8.3	190	
78-87-5	1,2-Dichloropropane	1.7	8.3	ND	U
75-27-4	Bromodichloromethane	1.7	8.3	ND	U
10061-01-5	cis-1,3-Dichloropropene	1.7	8.3	ND	U
108-10-1	4-Methyl-2-pentanone	8.3	42	ND	U
108-88-3	Toluene	1.7	8.3	ND	U
10061-02-6	trans-1,3-Dichloropropene	1.7	8.3	ND	U
79-00-5	1,1,2-Trichloroethane	1.7	8.3	ND	U
127-18-4	Tetrachloroethene	1.8	8.3	ND	U
591-78-6	2-hexanone	8.3	42	ND	U
124-48-1	Dibromochloromethane	1.7	8.3	ND	U

ND = Not Detected
Q = Qualifier

D60409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW19-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 16.7

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	1.7	8.3	ND	U
108-90-7	Chlorobenzene	1.7	8.3	ND	U
100-41-4	Ethylbenzene	1.7	8.3	ND	U
108-38-3	m,p-Xylene	3.3	17	ND	U
95-47-6	o-Xylene	1.7	8.3	ND	U
100-42-5	Styrene	1.7	8.3	ND	U
75-25-2	Bromoform	2.5	8.3	ND	U
98-82-8	Isopropyl Benzene	1.7	8.3	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	2.0	8.3	ND	U
541-73-1	1,3-Dichlorobenzene	1.7	8.3	ND	U
106-46-7	1,4-Dichlorobenzene	1.7	8.3	ND	U
95-50-1	1,2-Dichlorobenzene	1.7	8.3	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	3.0	8.3	ND	U
120-82-1	1,2,4-Trichlorobenzene	2.2	8.3	ND	U
540-59-0	1,2-Dichloroethene (total)	1.7	8.3	330	
1330-20-7	Xylene (total)	1.7	8.3	ND	U
110-82-7	Cyclohexane	1.7	8.3	ND	U
108-87-2	Methylcyclohexane	1.7	8.3	ND	U

ND = Not Detected
Q = Qualifier

060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	10	B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	0.71	~~J~~ B BL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.2	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

D60401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-16
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1671
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

VW 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033102-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.4	~~J~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.13	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

LW 060409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW20A-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-15
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 5.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	2.5	ND	U
74-87-3	Chloromethane	0.50	2.5	0.76	~~JB~~ BL
75-01-4	Vinyl Chloride	0.50	2.5	9.8	
74-83-9	Bromomethane	2.4	2.5	ND	U
75-00-3	Chloroethane	0.65	2.5	ND	U
75-69-4	Trichlorofluoromethane	0.50	2.5	ND	U
75-35-4	1,1-Dichloroethene	0.50	2.5	0.68	J
75-15-0	Carbon disulfide	0.50	2.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.75	2.5	ND	U
67-64-1	Acetone	5.8	13	8.6	~~JB~~ BL
79-20-9	Methyl acetate	0.50	2.5	ND	U
75-09-2	Methylene Chloride	0.50	2.5	0.88	~~J~~ BL
156-60-5	trans-1,2-Dichloroethene	0.50	2.5	0.73	J
1634-04-4	Methyl-tert-butyl ether	0.50	2.5	ND	U
75-34-3	1,1-Dichloroethane	0.50	2.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.50	2.5	110	
78-93-3	2-butanone	2.5	13	ND	U
67-66-3	Chloroform	0.50	2.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.50	2.5	ND	U
56-23-5	Carbon Tetrachloride	0.50	2.5	ND	U
71-43-2	Benzene	0.50	2.5	ND	U
107-06-2	1,2-Dichloroethane	0.50	2.5	ND	U
79-01-6	Trichloroethene	0.50	2.5	63	
78-87-5	1,2-Dichloropropane	0.50	2.5	ND	U
75-27-4	Bromodichloromethane	0.50	2.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.50	2.5	ND	U
108-10-1	4-Methyl-2-pentanone	2.5	13	ND	U
108-88-3	Toluene	0.50	2.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.50	2.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.50	2.5	ND	U
127-18-4	Tetrachloroethene	0.55	2.5	ND	U
591-78-6	2-hexanone	2.5	13	ND	U
124-48-1	Dibromochloromethane	0.50	2.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

04/04/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW22-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0871
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 5.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	2.5	ND	U
108-90-7	Chlorobenzene	0.50	2.5	ND	U
100-41-4	Ethylbenzene	0.50	2.5	ND	U
108-38-3	m,p-Xylene	1.0	5	ND	U
95-47-6	o-Xylene	0.50	2.5	ND	U
100-42-5	Styrene	0.50	2.5	ND	U
75-25-2	Bromoform	0.75	2.5	ND	U
98-82-8	Isopropyl Benzene	0.50	2.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.60	2.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.50	2.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.50	2.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.50	2.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.90	2.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.65	2.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.50	2.5	100	
1330-20-7	Xylene (total)	0.50	2.5	ND	U
110-82-7	Cyclohexane	0.50	2.5	ND	U
108-87-2	Methylcyclohexane	0.50	2.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

LW 060401

039

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.5

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.25	1.3	ND	U
74-87-3	Chloromethane	0.25	1.3	0.49	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.25	1.3	4.3	
74-83-9	Bromomethane	1.2	1.3	ND	U
75-00-3	Chloroethane	0.33	1.3	ND	U
75-69-4	Trichlorofluoromethane	0.25	1.3	ND	U
75-35-4	1,1-Dichloroethene	0.25	1.3	0.47	J
75-15-0	Carbon disulfide	0.25	1.3	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.38	1.3	ND	U
67-64-1	Acetone	2.9	6.3	4.7	~~J~~ B BL
79-20-9	Methyl acetate	0.25	1.3	ND	U
75-09-2	Methylene Chloride	0.25	1.3	0.47	~~J~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.25	1.3	ND	U
1634-04-4	Methyl-tert-butyl ether	0.25	1.3	ND	U
75-34-3	1,1-Dichloroethane	0.25	1.3	ND	U
156-59-2	cis-1,2-Dichloroethene	0.25	1.3	52	
78-93-3	2-butanone	1.3	6.3	ND	~~U~~ R CCL
67-66-3	Chloroform	0.25	1.3	ND	U
71-55-6	1,1,1-Trichloroethane	0.25	1.3	ND	U
56-23-5	Carbon Tetrachloride	0.25	1.3	ND	U
71-43-2	Benzene	0.25	1.3	ND	U
107-06-2	1,2-Dichloroethane	0.25	1.3	ND	U
79-01-6	Trichloroethene	0.25	1.3	9.6	
78-87-5	1,2-Dichloropropane	0.25	1.3	ND	U
75-27-4	Bromodichloromethane	0.25	1.3	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.25	1.3	ND	U
108-10-1	4-Methyl-2-pentanone	1.3	6.3	ND	U
108-88-3	Toluene	0.25	1.3	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.25	1.3	ND	U
79-00-5	1,1,2-Trichloroethane	0.25	1.3	ND	U
127-18-4	Tetrachloroethene	0.28	1.3	ND	U
591-78-6	2-hexanone	1.3	6.3	ND	U
124-48-1	Dibromochloromethane	0.25	1.3	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

DL 04/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-13
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.5

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.25	1.3	ND	U
108-90-7	Chlorobenzene	0.25	1.3	ND	U
100-41-4	Ethylbenzene	0.25	1.3	ND	U
108-38-3	m,p-Xylene	0.50	2.5	ND	U
95-47-6	o-Xylene	0.25	1.3	ND	U
100-42-5	Styrene	0.25	1.3	ND	U
75-25-2	Bromoform	0.38	1.3	ND	U
98-82-8	Isopropyl Benzene	0.25	1.3	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.30	1.3	ND	U
541-73-1	1,3-Dichlorobenzene	0.25	1.3	ND	U
106-46-7	1,4-Dichlorobenzene	0.25	1.3	0.55	J
95-50-1	1,2-Dichlorobenzene	0.25	1.3	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.45	1.3	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.33	1.3	ND	U
540-59-0	1,2-Dichloroethene (total)	0.25	1.3	51	
1330-20-7	Xylene (total)	0.25	1.3	ND	U
110-82-7	Cyclohexane	0.25	1.3	ND	U
108-87-2	Methylcyclohexane	0.25	1.3	ND	U

ND = Not Detected
Q = Qualifier

041

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.1

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.21	1	ND	U
74-87-3	Chloromethane	0.21	1	0.44	~~JB~~ BBL
75-01-4	Vinyl Chloride	0.21	1	4.9	
74-83-9	Bromomethane	0.98	1	ND	U
75-00-3	Chloroethane	0.27	1	ND	U
75-69-4	Trichlorofluoromethane	0.21	1	ND	U
75-35-4	1,1-Dichloroethene	0.21	1	0.43	J
75-15-0	Carbon disulfide	0.21	1	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.31	1	ND	U
67-64-1	Acetone	2.4	5.2	2.8	~~J~~ BBL
79-20-9	Methyl acetate	0.21	1	ND	U
75-09-2	Methylene Chloride	0.21	1	ND	U
156-60-5	trans-1,2-Dichloroethene	0.21	1	0.27	J
1634-04-4	Methyl-tert-butyl ether	0.21	1	ND	U
75-34-3	1,1-Dichloroethane	0.21	1	ND	U
156-59-2	cis-1,2-Dichloroethene	0.21	1	52	
78-93-3	2-butanone	1.0	5.2	ND	~~U~~ RCL
67-66-3	Chloroform	0.21	1	ND	U
71-55-6	1,1,1-Trichloroethane	0.21	1	ND	U
56-23-5	Carbon Tetrachloride	0.21	1	ND	U
71-43-2	Benzene	0.21	1	ND	U
107-06-2	1,2-Dichloroethane	0.21	1	ND	U
79-01-6	Trichloroethene	0.21	1	9.5	
78-87-5	1,2-Dichloropropane	0.21	1	ND	U
75-27-4	Bromodichloromethane	0.21	1	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.21	1	ND	U
108-10-1	4-Methyl-2-pentanone	1.0	5.2	ND	U
108-88-3	Toluene	0.21	1	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.21	1	ND	U
79-00-5	1,1,2-Trichloroethane	0.21	1	ND	U
127-18-4	Tetrachloroethene	0.23	1	ND	U
591-78-6	2-hexanone	1.0	5.2	ND	U
124-48-1	Dibromochloromethane	0.21	1	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D60402

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW25P-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-17
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 2.1

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.21	1	ND	U
108-90-7	Chlorobenzene	0.21	1	ND	U
100-41-4	Ethylbenzene	0.21	1	ND	U
108-38-3	m,p-Xylene	0.42	2.1	ND	U
95-47-6	o-Xylene	0.21	1	ND	U
100-42-5	Styrene	0.21	1	ND	U
75-25-2	Bromoform	0.31	1	ND	U
98-82-8	Isopropyl Benzene	0.21	1	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.25	1	ND	U
541-73-1	1,3-Dichlorobenzene	0.21	1	ND	U
106-46-7	1,4-Dichlorobenzene	0.21	1	0.56	J
95-50-1	1,2-Dichlorobenzene	0.21	1	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.37	1	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.27	1	ND	U
540-59-0	1,2-Dichloroethene (total)	0.21	1	51	
1330-20-7	Xylene (total)	0.21	1	ND	U
110-82-7	Cyclohexane	0.21	1	ND	U
108-87-2	Methylcyclohexane	0.21	1	ND	U

ND = Not Detected
Q = Qualifier

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW27-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 62.5

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	6.3	31	ND	U
74-87-3	Chloromethane	6.3	31	9.3	~~JB~~ BBL
75-01-4	Vinyl Chloride	6.3	31	1100	
74-83-9	Bromomethane	29	31	ND	U
75-00-3	Chloroethane	8.1	31	ND	U
75-69-4	Trichlorofluoromethane	6.3	31	ND	U
75-35-4	1,1-Dichloroethene	6.3	31	ND	U
75-15-0	Carbon disulfide	6.3	31	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	9.4	31	ND	U
67-64-1	Acetone	72	160	ND	U
79-20-9	Methyl acetate	6.3	31	ND	U
75-09-2	Methylene Chloride	6.3	31	14	~~B~~ BBL
156-60-5	trans-1,2-Dichloroethene	6.3	31	ND	U
1634-04-4	Methyl-tert-butyl ether	6.3	31	ND	U
75-34-3	1,1-Dichloroethane	6.3	31	ND	U
156-59-2	cis-1,2-Dichloroethene	6.3	31	890	
78-93-3	2-butanone	31	160	ND	~~U~~ RCL
67-66-3	Chloroform	6.3	31	ND	U
71-55-6	1,1,1-Trichloroethane	6.3	31	ND	U
56-23-5	Carbon Tetrachloride	6.3	31	ND	U
71-43-2	Benzene	6.3	31	ND	U
107-06-2	1,2-Dichloroethane	6.3	31	ND	U
79-01-6	Trichloroethene	6.3	31	130	
78-87-5	1,2-Dichloropropane	6.3	31	ND	U
75-27-4	Bromodichloromethane	6.3	31	ND	U
10061-01-5	cis-1,3-Dichloropropene	6.3	31	ND	U
108-10-1	4-Methyl-2-pentanone	31	160	ND	U
108-88-3	Toluene	6.3	31	ND	U
10061-02-6	trans-1,3-Dichloropropene	6.3	31	ND	U
79-00-5	1,1,2-Trichloroethane	6.3	31	ND	U
127-18-4	Tetrachloroethene	6.9	31	ND	U
591-78-6	2-hexanone	31	160	ND	U
124-48-1	Dibromochloromethane	6.3	31	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

D6040

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW27-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-14
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-1471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 62.5

Soil Extract Volume: _____ (uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	6.3	31	ND	U
108-90-7	Chlorobenzene	6.3	31	ND	U
100-41-4	Ethylbenzene	6.3	31	ND	U
108-38-3	m,p-Xylene	13	63	ND	U
95-47-6	o-Xylene	6.3	31	ND	U
100-42-5	Styrene	6.3	31	ND	U
75-25-2	Bromoform	9.4	31	ND	U
98-82-8	Isopropyl Benzene	6.3	31	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	7.5	31	ND	U
541-73-1	1,3-Dichlorobenzene	6.3	31	ND	U
106-46-7	1,4-Dichlorobenzene	6.3	31	ND	U
95-50-1	1,2-Dichlorobenzene	6.3	31	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	11	31	ND	U
120-82-1	1,2,4-Trichlorobenzene	8.1	31	ND	U
540-59-0	1,2-Dichloroethene (total)	6.3	31	880	
1330-20-7	Xylene (total)	6.3	31	ND	U
110-82-7	Cyclohexane	6.3	31	ND	U
108-87-2	Methylcyclohexane	6.3	31	ND	U

ND = Not Detected
Q = Qualifier

060401

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW28-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 6.3

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033012-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.63	3.1	ND	U UL OT
74-87-3	Chloromethane	0.63	3.1	0.97	JB BL
75-01-4	Vinyl Chloride	0.63	3.1	5.2	L OT
74-83-9	Bromomethane	2.9	3.1	ND	U UL OT
75-00-3	Chloroethane	0.81	3.1	ND	U
75-69-4	Trichlorofluoromethane	0.63	3.1	ND	U
75-35-4	1,1-Dichloroethene	0.63	3.1	ND	U
75-15-0	Carbon disulfide	0.63	3.1	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.94	3.1	ND	U
67-64-1	Acetone	7.2	16	16	B BL
79-20-9	Methyl acetate	0.63	3.1	ND	U UL OT
75-09-2	Methylene Chloride	0.63	3.1	1.6	B BL
156-60-5	trans-1,2-Dichloroethene	0.63	3.1	1.1	J L OT
1634-04-4	Methyl-tert-butyl ether	0.63	3.1	ND	U UL OT
75-34-3	1,1-Dichloroethane	0.63	3.1	ND	U UL OT
156-59-2	cis-1,2-Dichloroethene	0.63	3.1	120	L OT
78-93-3	2-butanone	3.1	16	ND	U UL OT
67-66-3	Chloroform	0.63	3.1	ND	U
71-55-6	1,1,1-Trichloroethane	0.63	3.1	ND	U
56-23-5	Carbon Tetrachloride	0.63	3.1	ND	U
71-43-2	Benzene	0.63	3.1	ND	U
107-06-2	1,2-Dichloroethane	0.63	3.1	ND	U
79-01-6	Trichloroethene	0.63	3.1	36	L
78-87-5	1,2-Dichloropropane	0.63	3.1	ND	U UL
75-27-4	Bromodichloromethane	0.63	3.1	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.63	3.1	ND	U
108-10-1	4-Methyl-2-pentanone	3.1	16	ND	U
108-88-3	Toluene	0.63	3.1	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.63	3.1	ND	U
79-00-5	1,1,2-Trichloroethane	0.63	3.1	ND	U
127-18-4	Tetrachloroethene	0.69	3.1	ND	U
591-78-6	2-hexanone	3.1	16	ND	U
124-48-1	Dibromochloromethane	0.63	3.1	ND	U

ND = Not Detected
Q = Qualifier

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW28-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-0771
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 6.3

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.63	3.1	ND	U
108-90-7	Chlorobenzene	0.63	3.1	ND	U
100-41-4	Ethylbenzene	0.63	3.1	ND	U
108-38-3	m,p-Xylene	1.3	6.3	ND	U
95-47-6	o-Xylene	0.63	3.1	ND	U
100-42-5	Styrene	0.63	3.1	ND	U
75-25-2	Bromoform	0.94	3.1	ND	U
98-82-8	Isopropyl Benzene	0.63	3.1	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.75	3.1	ND	U
541-73-1	1,3-Dichlorobenzene	0.63	3.1	ND	U
106-46-7	1,4-Dichlorobenzene	0.63	3.1	ND	U
95-50-1	1,2-Dichlorobenzene	0.63	3.1	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.1	3.1	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.81	3.1	ND	U
540-59-0	1,2-Dichloroethene (total)	0.63	3.1	120	
1330-20-7	Xylene (total)	0.63	3.1	ND	U
110-82-7	Cyclohexane	0.63	3.1	ND	U
108-87-2	Methylcyclohexane	0.63	3.1	ND	U

UL OT

ND = Not Detected
Q = Qualifier

FORM I VOA

060407

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033012-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~JB~~ JCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.8	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.13	J
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031809

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 0903113-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 0903113-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/30/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033012-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WP 060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9033102-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~U~~ JCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	~~U~~ R ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-031909

Lab Project Number:
Method: 8260B
Date Collected: 03/19/09

Lab Sample ID: 0903113-12
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/20/09
Lab File ID: 0903113-1271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

VM 060401

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-2071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____ (uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.19	~~U~~ J CCL
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	4.8	L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R CCL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	ND	U
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 040409

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-TB01-032009

Lab Project Number:
Method: 8260B
Date Collected: 03/20/09

Lab Sample ID: 0903113-20
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/21/09
Lab File ID: 0903113-2071
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

060401

053

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MS171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	8.4	
74-87-3	Chloromethane	0.10	0.5	6.2	B
75-01-4	Vinyl Chloride	0.10	0.5	8	
74-83-9	Bromomethane	0.47	0.5	6.4	
75-00-3	Chloroethane	0.13	0.5	7.5	
75-69-4	Trichlorofluoromethane	0.10	0.5	8.4	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.9	
75-15-0	Carbon disulfide	0.10	0.5	6.4	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	6.9	
67-64-1	Acetone	1.2	2.5	38	
79-20-9	Methyl acetate	0.10	0.5	6.1	
75-09-2	Methylene Chloride	0.10	0.5	6.2	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.9	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	5.5	
75-34-3	1,1-Dichloroethane	0.10	0.5	6.5	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	5.9	
78-93-3	2-butanone	0.50	2.5	31	
67-66-3	Chloroform	0.10	0.5	6.7	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	6.3	
56-23-5	Carbon Tetrachloride	0.10	0.5	6.1	
71-43-2	Benzene	0.10	0.5	6	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.8	
79-01-6	Trichloroethene	0.10	0.5	5.2	
78-87-5	1,2-Dichloropropane	0.10	0.5	6.1	
75-27-4	Bromodichloromethane	0.10	0.5	6.4	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	6	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	31	
108-88-3	Toluene	0.10	0.5	5.4	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	5.8	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.4	
127-18-4	Tetrachloroethene	0.11	0.5	5.1	
591-78-6	2-hexanone	0.50	2.5	32	
124-48-1	Dibromochloromethane	0.10	0.5	5.7	

ND = Not Detected
Q = Qualifier

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MS

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MS1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MS171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.5	
108-90-7	Chlorobenzene	0.10	0.5	5.3	
100-41-4	Ethylbenzene	0.10	0.5	5.2	
108-38-3	m,p-Xylene	0.20	1	11	
95-47-6	o-Xylene	0.10	0.5	5.2	
100-42-5	Styrene	0.10	0.5	5.3	
75-25-2	Bromoform	0.15	0.5	5.5	
98-82-8	Isopropyl Benzene	0.10	0.5	5.3	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	5.4	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	5	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	4.8	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	5	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	5.8	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	5.1	B
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	16	
110-82-7	Cyclohexane	0.10	0.5	6.2	
108-87-2	Methylcyclohexane	0.10	0.5	6.2	

ND = Not Detected
Q = Qualifier

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VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MSD171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	8.1	
74-87-3	Chloromethane	0.10	0.5	5.4	B
75-01-4	Vinyl Chloride	0.10	0.5	7.5	
74-83-9	Bromomethane	0.47	0.5	6.4	
75-00-3	Chloroethane	0.13	0.5	6.6	
75-69-4	Trichlorofluoromethane	0.10	0.5	7.8	
75-35-4	1,1-Dichloroethene	0.10	0.5	5.9	
75-15-0	Carbon disulfide	0.10	0.5	6.1	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	5.9	
67-64-1	Acetone	1.2	2.5	34	
79-20-9	Methyl acetate	0.10	0.5	5.7	
75-09-2	Methylene Chloride	0.10	0.5	6	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	5.8	
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	5.3	
75-34-3	1,1-Dichloroethane	0.10	0.5	6.2	
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	5.8	
78-93-3	2-butanone	0.50	2.5	29	
67-66-3	Chloroform	0.10	0.5	6.3	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	5.7	
56-23-5	Carbon Tetrachloride	0.10	0.5	5.5	
71-43-2	Benzene	0.10	0.5	5.7	
107-06-2	1,2-Dichloroethane	0.10	0.5	6.4	
79-01-6	Trichloroethene	0.10	0.5	5.1	
78-87-5	1,2-Dichloropropane	0.10	0.5	5.8	
75-27-4	Bromodichloromethane	0.10	0.5	6.1	
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	5.6	
108-10-1	4-Methyl-2-pentanone	0.50	2.5	29	
108-88-3	Toluene	0.10	0.5	4.9	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	5.5	
79-00-5	1,1,2-Trichloroethane	0.10	0.5	5.2	
127-18-4	Tetrachloroethene	0.11	0.5	4.4	
591-78-6	2-hexanone	0.50	2.5	29	
124-48-1	Dibromochloromethane	0.10	0.5	5.3	

ND = Not Detected
Q = Qualifier

060409

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903113
Client Sample ID: YS03-GW08A-0309MSD

Lab Project Number:
Method: 8260B
Date Collected: 03/18/09

Lab Sample ID: 9033102-MSD1
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/19/09
Lab File ID: 9033102-MSD171
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 03/31/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9033102-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	5.3	
108-90-7	Chlorobenzene	0.10	0.5	4.9	
100-41-4	Ethylbenzene	0.10	0.5	4.5	
108-38-3	m,p-Xylene	0.20	1	9	
95-47-6	o-Xylene	0.10	0.5	4.5	
100-42-5	Styrene	0.10	0.5	4.6	
75-25-2	Bromoform	0.15	0.5	5	
98-82-8	Isopropyl Benzene	0.10	0.5	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	4.9	
541-73-1	1,3-Dichlorobenzene	0.10	0.5	4.1	
106-46-7	1,4-Dichlorobenzene	0.10	0.5	4.2	
95-50-1	1,2-Dichlorobenzene	0.10	0.5	4.2	
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	5	
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	4.3	B
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	12	
1330-20-7	Xylene (total)	0.10	0.5	14	
110-82-7	Cyclohexane	0.10	0.5	5	
108-87-2	Methylcyclohexane	0.10	0.5	4.9	

ND = Not Detected
Q = Qualifier

0604/09

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW06-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-05

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	134	B	J	P
7440-36-0	Antimony	9.2	B	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	26.0	B	J	P
7440-41-7	Beryllium	0.83	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	88600			P
7440-47-3	Chromium	3.6	B	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	B	UL BL	P
7439-89-6	Iron	419			P
7439-92-1	Lead	1.8	B	L BL	P
7439-95-4	Magnesium	2630	B	J	P
7439-96-5	Manganese	41.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.8	B	B BL	P
7440-09-7	Potassium	1080	B	EJ SN	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.1	B	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW08A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-01

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	119	~~B~~	J	P
7440-36-0	Antimony	10.3		B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.9	~~B~~	J	P
7440-41-7	Beryllium	1.2	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	90000			P
7440-47-3	Chromium	2.5	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~B~~	UL BL	P
7439-89-6	Iron	1160			P
7439-92-1	Lead	1.4	~~B~~	UL BL	P
7439-95-4	Magnesium	1390	~~B~~	J	P
7439-96-5	Manganese	77.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.86	~~B~~	B BL	P
7440-09-7	Potassium	1120	~~B~~	E J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6830			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.98	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-06

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	149	~~B~~	J	P
7440-36-0	Antimony	8.2	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	38.5	~~B~~	J	P
7440-41-7	Beryllium	1.1	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	134000			P
7440-47-3	Chromium	4.1	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	54.9			P
7439-89-6	Iron	402			P
7439-92-1	Lead	2.1	~~B~~	~~J~~	P
7439-95-4	Magnesium	4220	~~B~~	J	P
7439-96-5	Manganese	33.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.1	~~B~~	B BL	P
7440-09-7	Potassium	894	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8640			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.1	~~B~~	B BL	P
7440-66-6	Zinc	5.5	~~B~~	J	P

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JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW20-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-16

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	532			P
7440-36-0	Antimony	8.5	B	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	22.1	B	J	P
7440-41-7	Beryllium	0.93	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74300			P
7440-47-3	Chromium	11.7			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	B	UL BL	P
7439-89-6	Iron	2700			P
7439-92-1	Lead	2.7	B	L BL	P
7439-95-4	Magnesium	1130	B	J	P
7439-96-5	Manganese	25.6			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.4	B	J	P
7440-09-7	Potassium	951	B	BJSD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5180			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.4	B	J	P
7440-66-6	Zinc	10.4	B	J	P

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Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW20A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-15

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	190	~~B~~	~~J~~	P
7440-36-0	Antimony	8.3	~~B~~	~~B BL~~	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	13.5	~~B~~	~~J~~	P
7440-41-7	Beryllium	0.50	~~B~~	~~B BL~~	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	47500			P
7440-47-3	Chromium	3.0	~~B~~	~~B BL~~	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	~~UL BL~~	P
7439-89-6	Iron	1410			P
7439-92-1	Lead	2.0	~~B~~	~~L BL~~	P
7439-95-4	Magnesium	1280	~~B~~	~~J~~	P
7439-96-5	Manganese	80.2			P
7439-97-6	Mercury	0.28			CV
7440-02-0	Nickel	2.0	~~B~~	~~B BL~~	P
7440-09-7	Potassium	1860	~~B~~	~~B J SD~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	14700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.95	~~B~~	~~B BL~~	P
7440-66-6	Zinc	6.2	~~B~~	~~J~~	P

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Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-08

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	162	~~B~~	J	P
7440-36-0	Antimony	7.8	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	61.8	~~B~~	J	P
7440-41-7	Beryllium	1.2	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	174000			P
7440-47-3	Chromium	2.2	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	384			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	3180	~~B~~	J	P
7439-96-5	Manganese	102			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.6	~~B~~	B BL	P
7440-09-7	Potassium	1220	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	10600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.6	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-13

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	900			P
7440-36-0	Antimony	9.2	~~B~~	B BL	P
7440-38-2	Arsenic	3.6	~~B~~	J	P
7440-39-3	Barium	38.8	~~B~~	J	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	146000			P
7440-47-3	Chromium	6.1	~~B~~	J	P
7440-48-4	Cobalt	1.8	~~B~~	J	P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	2220			P
7439-92-1	Lead	2.1	~~B~~	L BL	P
7439-95-4	Magnesium	3540	~~B~~	J	P
7439-96-5	Manganese	147			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	~~B~~	B BL	P
7440-09-7	Potassium	1250	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7410			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.5	~~B~~	J	P
7440-66-6	Zinc	7.0	~~B~~	J	P

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Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

064

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW25P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-17

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	746			P
7440-36-0	Antimony	9.0	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	38.1	~~B~~	J	P
7440-41-7	Beryllium	1.0	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	148000			P
7440-47-3	Chromium	4.9	~~B~~	J	P
7440-48-4	Cobalt	2.7	~~B~~	J	P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	1730			P
7439-92-1	Lead	1.8	~~B~~	J BL	P
7439-95-4	Magnesium	3520	~~B~~	J	P
7439-96-5	Manganese	155			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.1	~~B~~	B BL	P
7440-09-7	Potassium	1130	~~B~~	EJSD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7340			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	4.0	~~B~~	J	P
7440-66-6	Zinc	6.1	~~B~~	J	P

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JAC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW27-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-14

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5670			P
7440-36-0	Antimony	10.8		B BL	P
7440-38-2	Arsenic	17.2			P
7440-39-3	Barium	69.8	~~B~~	J	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	161000			P
7440-47-3	Chromium	18.2			P
7440-48-4	Cobalt	5.3			P
7440-50-8	Copper	1.9	~~B~~	L BL	P
7439-89-6	Iron	7250			P
7439-92-1	Lead	4.7		L BL	P
7439-95-4	Magnesium	6340			P
7439-96-5	Manganese	500			P
7439-97-6	Mercury	0.10	~~B~~	J	CV
7440-02-0	Nickel	15.0	~~B~~	J	P
7440-09-7	Potassium	2510	~~B~~	~~B~~ J SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	13600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	26.1			P
7440-66-6	Zinc	34.8			P

JLC 61009

Color Before: BROWN Clarity Before: CLEAR Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW28-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-07

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	122	~~B~~	~~J~~	P
7440-36-0	Antimony	10.4		B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	13.3	~~B~~	~~J~~	P
7440-41-7	Beryllium	1.3	~~B~~	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	85400			P
7440-47-3	Chromium	1.5	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	~~U~~	UL BL	P
7439-89-6	Iron	160			P
7439-92-1	Lead	1.4	~~U~~	UL BL	P
7439-95-4	Magnesium	1780	~~B~~	~~J~~	P
7439-96-5	Manganese	30.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	~~B~~	B BL	P
7440-09-7	Potassium	872	~~B~~	~~J~~ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6980			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.7	~~B~~	B BL	P
7440-66-6	Zinc	8.4	~~B~~	~~J~~	P

JLC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-02

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.77	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.77	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.75	B	J	P
7440-09-7	Potassium	9.9	U	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-11

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.71	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	L	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JEC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-18

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.65	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-03

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.85	U	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.83	U	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.33			CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-10

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.70	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	B	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.5	B	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-19

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.77	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.73	B	J	P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Lab Sample ID: 0903113-09

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	1.1	B	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW06-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-04

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	4.9	~~B~~	J	P
7440-39-3	Barium	27.4	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	97600			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	63.5	~~B~~	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	2920	~~B~~	J	P
7439-96-5	Manganese	28.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.2	~~B~~	B BL	P
7440-09-7	Potassium	1710	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	6.8		~~J~~ L	P MSL
7440-22-4	Silver	0.93	~~B~~	J	P
7440-23-5	Sodium	6900			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.57	~~B~~	B BL	P
7440-66-6	Zinc	4.8	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW08A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-01

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	4.7	~~B~~	J	P
7440-39-3	Barium	24.6	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	91500			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	810			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1460	~~B~~	J	P
7439-96-5	Manganese	77.3			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	1770	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	7.7		~~N~~ L	P MSL
7440-22-4	Silver	0.67	~~B~~	B BL	P
7440-23-5	Sodium	6940			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.79	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-05

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.4	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	4.8	~~B~~	J	P	
7440-39-3	Barium	41.7	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	147000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	100		B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	4640	~~B~~	J	P	
7439-96-5	Manganese	32.8			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	1460	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	9.7		~~M~~ L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	8790			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.47	U		P	
7440-66-6	Zinc	1.0	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW20-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-14

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	66.2	~~B~~	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	~~B~~	J	P
7440-39-3	Barium	19.4	~~B~~	J	P
7440-41-7	Beryllium	0.64	~~B~~	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	71700			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.85	~~B~~	B BL	P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	181			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1020	~~B~~	J	P
7439-96-5	Manganese	13.5			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	B BL	P
7440-09-7	Potassium	1290	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	4.1	~~U~~	~~U~~ UL	P MSL
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	4750	~~B~~	J	P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.74	U		P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW20A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-13

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.9	~~B~~	J	P
7440-39-3	Barium	13.5	~~B~~	J	P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	49200			P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	172			P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	1310	~~B~~	J	P
7439-96-5	Manganese	59.2			P
7439-97-6	Mercury	0.11	~~B~~	J	CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	2470	~~B~~	~~E~~ B BL	P
7782-49-2	Selenium	4.4	~~B~~	~~W~~ L	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	14600			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.3	~~B~~	B BL	P

MSL

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW22-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-07

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	6.5	~~B~~	J	P	
7440-39-3	Barium	65.1	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	183000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	140		B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	3520	~~B~~	J	P	
7439-96-5	Manganese	121			P	
7439-97-6	Mercury	0.13	~~B~~	J	CV	
7440-02-0	Nickel	2.4	~~B~~	B BL	P	
7440-09-7	Potassium	1820	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	8.4		~~N~~ L	P	MSL
7440-22-4	Silver	0.83	~~B~~	J	P	
7440-23-5	Sodium	11900			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	1.1	~~B~~	B BL	P	
7440-66-6	Zinc	2.0	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW25-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-11

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	114	~~B~~	B BL	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	7.9	~~B~~	J	P
7440-39-3	Barium	37.7	~~B~~	J	P
7440-41-7	Beryllium	0.74	~~B~~	B BL	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	148000			P
7440-47-3	Chromium	0.94	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~B~~	B BL	P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	49.1	~~B~~	B BL	P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	3540	~~B~~	J	P
7439-96-5	Manganese	148			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	B BL	P
7440-09-7	Potassium	1440	~~B~~	~~B~~ B BL	P
7782-49-2	Selenium	8.7		~~N~~ L	P MSL
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	6900			P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.6	~~B~~	B BL	P

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW25P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-15

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	78.8	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	5.2	~~B~~	J	P	
7440-39-3	Barium	37.8	~~B~~	J	P	
7440-41-7	Beryllium	0.42	~~B~~	B BL	P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	150000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	1.3	~~B~~	B BL	P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	43.0	~~B~~	B BL	P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	3550	~~B~~	J	P	
7439-96-5	Manganese	153			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.9	~~B~~	B BL	P	
7440-09-7	Potassium	1430	~~B~~	~~B~~ B BL	P	
7782-49-2	Selenium	6.4		~~N~~ L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	7070			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.47	U		P	
7440-66-6	Zinc	3.7	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW27-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-12

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	113	~~B~~	B BL	P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	5.7	~~B~~	J	P	
7440-39-3	Barium	60.4	~~B~~	J	P	
7440-41-7	Beryllium	0.50	~~B~~	B BL	P	
7440-43-9	Cadmium	0.44	~~B~~	J	P	
7440-70-2	Calcium	176000			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	3.5	~~B~~	B BL	P	
7440-50-8	Copper	1.5	~~B~~	J	P	
7439-89-6	Iron	19.9	U		P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	6500			P	
7439-96-5	Manganese	482			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	4.4	~~B~~	B BL	P	
7440-09-7	Potassium	2090	~~B~~	B BL	P	
7782-49-2	Selenium	11.2		L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	15100			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.84	~~B~~	B BL	P	
7440-66-6	Zinc	33.8			P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW28-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-06

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	3.2	~~B~~	J	P	
7440-39-3	Barium	13.8	~~B~~	J	P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	91900			P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	19.9	U		P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	1950	~~B~~	J	P	
7439-96-5	Manganese	28.2			P	
7439-97-6	Mercury	0.10	~~B~~	J	CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	1490	~~B~~	~~B~~ BBL	P	
7782-49-2	Selenium	5.8		~~B~~ L	P	MSL
7440-22-4	Silver	0.61	U		P	
7440-23-5	Sodium	6770			P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	1.2	~~B~~	B BL	P	
7440-66-6	Zinc	1.0	~~B~~	B BL	P	

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-02

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	44.1	U		P	
7440-36-0	Antimony	2.7	U		P	
7440-38-2	Arsenic	2.8	U		P	
7440-39-3	Barium	0.20	U		P	
7440-41-7	Beryllium	0.32	U		P	
7440-43-9	Cadmium	0.34	U		P	
7440-70-2	Calcium	58.0	~~B~~	J	P	
7440-47-3	Chromium	0.88	U		P	
7440-48-4	Cobalt	0.65	U		P	
7440-50-8	Copper	0.90	U		P	
7439-89-6	Iron	19.9	U		P	
7439-92-1	Lead	2.6	U		P	
7439-95-4	Magnesium	18.6	U		P	
7439-96-5	Manganese	1.1	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	U		P	
7440-09-7	Potassium	588	~~B~~	~~B~~ J	P	
7782-49-2	Selenium	4.1	U	~~U~~ J	P	XICorr JAC61009
7440-22-4	Silver	0.76	~~B~~	J	P	
7440-23-5	Sodium	215	U		P	
7440-28-0	Thallium	6.2	U		P	
7440-62-2	Vanadium	0.47	U		P	
7440-66-6	Zinc	1.8	~~B~~	J	P	

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS03-EB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-10

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.24	~~B~~	J	P
7440-41-7	Beryllium	0.33	~~B~~	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	162	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	1.2	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	593	~~B~~	~~B~~ J	P
7782-49-2	Selenium	4.1	U	~~W~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	3.5	~~B~~	J	P

JAC 6/8/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-16

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	45.0	~~B~~	J	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.47	~~B~~	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	56.6	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	583	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~N~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	1.6	~~B~~	J	P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-031809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-03

Level (low/med): LOW Date Received: 3/19/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	63.9	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.56	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	604	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~N~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.3	~~B~~	J	P

6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-09

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	103	~~B~~	J	P
7440-47-3	Chromium	1.2	~~B~~	J	P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.84	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	~~B~~	J	P
7440-09-7	Potassium	610	~~B~~	~~B~~ J	P
7782-49-2	Selenium	4.1	U	~~U~~ J	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	221	~~B~~	J	P
7440-28-0	Thallium	6.9	~~B~~	J	P
7440-62-2	Vanadium	0.47	~~B~~	J	P
7440-66-6	Zinc	3.0	~~B~~	J	P

X Icorr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-032009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-17

Level (low/med): LOW Date Received: 3/21/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	46.1	~~B~~	J	P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.51	~~B~~	J	P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	57.0	~~B~~	J	P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.5	~~B~~	J	P
7440-09-7	Potassium	609	~~B~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~N~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	2.3	~~B~~	J	P

JRC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-031909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Lab Sample ID: 0903114-08

Level (low/med): LOW Date Received: 3/20/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	44.1	U		P
7440-36-0	Antimony	2.7	U		P
7440-38-2	Arsenic	2.8	U		P
7440-39-3	Barium	0.20	U		P
7440-41-7	Beryllium	0.32	U		P
7440-43-9	Cadmium	0.34	U		P
7440-70-2	Calcium	31.5	U		P
7440-47-3	Chromium	0.88	U		P
7440-48-4	Cobalt	0.65	U		P
7440-50-8	Copper	0.90	U		P
7439-89-6	Iron	19.9	U		P
7439-92-1	Lead	2.6	U		P
7439-95-4	Magnesium	18.6	U		P
7439-96-5	Manganese	0.43	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.3	U		P
7440-09-7	Potassium	592	~~U~~	~~E~~ J	P
7782-49-2	Selenium	4.1	U	~~U~~	P
7440-22-4	Silver	0.61	U		P
7440-23-5	Sodium	215	U		P
7440-28-0	Thallium	6.2	U		P
7440-62-2	Vanadium	0.47	U		P
7440-66-6	Zinc	0.74	U		P

JJC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166
2 coolers

15593

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40mL	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	MEE RSK-175 40mL	TOC 9060/Lloyd Kahn 40mL	Chloride Sulfate 300.0 Alkalinity 310.1 250mL					pH / Sample Info (Lab Use): Metals	F. Metals	TOC
0903113-01 (0903114-01)	YS03-GW08A-0309	3/18/09	1140	GW	30	15		6	6			9	3	3	6	6	3							
0903092-20 (0903093-17)	YS03-GW23-0309	3/18/09	1555	GW	10	5		2	2			3	1	1	2	2	1							
0903113-02 (0903114-02)	YS03-EB01-031809	3/18/09	1630	GW	5	3		2				3	1	1										
(DUP) 0903113-03 (0903114-03)	YS03-EB02-031809	3/18/09	1640	GW	5	3		2				3	1	1										
0903113-04	YS03-TB01-031809	3/18/09	0830	TB	3	3						3												
0903092-21 (0903093-18)	YS03-GW08B-0309	3/18/09	1030	GW	10	5		2	2			3	1	1	2	2	1					(MS)		
(MS) 0903092-22 (0903093-19)	YS03-GW08BP-0309	3/18/09	1035	GW	5	3		2				3	1	1										
0903092-23 (0903093-20)	YS03-GW21-0309	3/18/09	1210	GW	10	5		2	2			3	1	1	2	2	1							

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Lab Use Only:

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Metals were field filtered
GW08A Run QA/QC (MS/MSD)

Sample Custody

Relinquished by: PM	Date/Time: 3/18/09 1730	Received by:	Date/Time: 3/19/09 0912
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.8, 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

96

092

CTO-166

2 Coolers

15596

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Chelsea Bemet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6245	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? (Y) or N? If yes, which ID(s)? GW22, GW19

Requested Analysis (include method and bottle type): VOCs SW846 40 mL; Metals ILM05.3 PL; FMetals ILM05.3 PL; Chloride Sulfate 300.0 Alkalinity 310.1; MEE RSK-175; TOC 9060/Lloyd Kahn

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No. (Lab Use) 3/20/09	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40 mL	Metals ILM05.3 PL	FMetals ILM05.3 PL	Chloride Sulfate 300.0 Alkalinity 310.1	MEE RSK-175	TOC 9060/Lloyd Kahn					pH / Sample Info (Lab Use): Metal	F Metal	TOC		
~~0903113-05~~ 0903114-04	YS03-GW06-0309	3/19/09	1035	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
~~0903113-09~~ 0903114-08	YS03-FB01-031909	3/19/09	1130	GW	5	3		2				3	1	1								<2	<2			
0903113-12	YS03-TB01-031909	3/19/09	1140	~~GW~~ TB	3	3						3														
~~0903113-0[illegible]~~ 0903114-05	YS03-GW19-0309	3/19/09	1545	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
~~0903113-10~~ 0903114-09	YS03-EB02-031709	3/17/09	1710	GW	5	3		2				3	1	1								<2	<2			
~~0903113-07~~ 0903114-06	YS03-GW28-0309	3/18/09	1135	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
~~0903113-08~~ 0903114-07	YS03-GW22-0309	3/17/09	1450	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
~~0903113-11~~ 0903114-10	YS03-EB01-031909	3/19/09	1550	GW	5	3		2				3	1	1								<2	<2			

Lab Use Only

Sample Unpacked By: Diane Byrd
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Metals were field Filtered
See high concentrations expected but
*YS03-GW28-0309 - All 3 VOC vials have pea size bubble, DB 3/20/09

Sample Custody

Relinquished by:	Date/Time:	Received by:	Date/Time:
[signature] PM 1900	3/19/09 1900	Diane Byrd	3/20/09 0920

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.6, 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

393

CTO-166
2 coolers

15598

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166		GW - Ground water WW - Waste water SW - Surface water SO - Soil/Sediment TB - Trip Blank RI - Rinsate WP - Wipe O - Other
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 3		
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		
Project Contact: Rebekkha Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N		
Sampler's Name: P. Murphy M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?		

CompuChem No (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846	Metals ILM05.3	FMetals ILM05.3	Chloride Sulfate 300.0 & Alkalinity 310.1	MEE RSK-175	TOC 9060/Lloyd Kahn					pH / Sample Info (Lab Use): Metals (total)	FMetals	TOC		
0903113-13 0903114-11	YS03-GW25-0309	3/20/09	0930	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
0903113-14 0903114-15	YS03-GW25P-0309	3/20/09	0940	GW	5	3		2				3	1	1								<2	<2			
0903113-12 0903114-12	YS03-GW27-0309	3/20/09	1055	GW	10	5		2	2			3	1	1	1	2	2					<2	<2	<2		
0903113-20	YS03-TB01-032009	3/20/09	1230	TB	3	3						3														
0903113-18 0903114-16	YS03-EB01-032009	3/20/09	1240	GW	5	3		2				3	1	1								<2	<2			
0903113-19 0903114-17	YS03-EB02-032009	3/20/09	1250	GW	5	3		2				3	1	1								<2	<2			
0903113-15 0903114-13	YS03-GW20A-0309	3/20/09	1010	GW	10	3		2	2			3	1	1	1	2	2					<2	<2	<2		
0903113-16 0903114-14	YS03-GW20-0309	3/20/09	1130	GW	10	3		2	2			3	1	1	1	2	2					<2	<2	<2		

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Metals were field filtered

Sample Custody

Relinquished by: PM	Date/Time: 3/20/09 1500	Received by: Diane Byrd	Date/Time: 3-21-09 1135
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.4°, 0.1°C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

98

0944

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/18-20/09
Received Date: 03/19-21/09
Analysis Dates: 03/30-31/09

Cooler Temps: 0.1-0.8°C

All holding time requirements were met. All sample vials for YS03-GW28-0309 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS03-TB01-031909, YS03-TB01-031809, YS03-TB01-032009- trip blanks; YS03-EB02-031909, YS03-EB01-031809, YS03-EB02-032009, YS03-EB01-031909, YS03-EB01-032009- equipment blanks; YS03-FB01-031909- field blank.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHT	chloromethane	0.19J ug/L	0.50 ug/L	0.95
	acetone	1.3J	2.5	13
VBLKHV	chloromethane	0.16J	0.5	0.8
YS03-TB01-031909	chloromethane	0.19J	0.5	0.95
YS03-TB01-031809	chloromethane	0.19J	0.5	0.95
	acetone	3.8	2.5	38
	methylene chloride	0.13J	0.5	1.3
YS03-TB01-032009	chloromethane	0.19J	0.5	0.95
	acetone	4.8	2.5	48
YS03-EB01-031909	chloromethane	0.24J	0.5	1.2
	acetone	9.4	2.5	94
	methylene chloride	1.2	0.5	12
	2-butanone	1.4J	2.5	14
	toluene	0.24J	0.5	1.2
	2-hexanone	0.61J	2.5	3.1
	1,2,4-trichlorobenzene	0.15J	0.5	0.75
	methylcyclohexane	0.19J	0.5	0.95
YS03-EB01-031809	chloromethane	0.2J	0.5	1.0
	acetone	6.8	2.5	68
	methylene chloride	3.2	0.5	32
	2-butanone	2	2.5	20
	trichloroethene	0.11	0.5	0.55
	toluene	0.34J	0.5	1.7
YS03-EB01-032009	chloromethane	0.22J	0.5	1.1
	acetone	33	2.5	330
	methylene chloride	1.9	0.5	19
	2-butanone	5.5	2.5	55
	toluene	0.43J	0.5	2.2
YS03-EB02-031909	chloromethane	0.17J	0.5	0.85
	acetone	15	2.5	150
	methylene chloride	1.4	0.5	14
	2-butanone	2.8	2.5	28
	chloroform	0.1J	0.5	0.5
	toluene	0.23J	0.5	1.2
YS03-EB02-032009	chloromethane	0.19J	0.5	0.95
	acetone	34	2.5	340
	methylene chloride	1.9	0.5	19
	2-butanone	5.6	2.5	56
	toluene	0.42J	0.5	2.1
YS03-FB01-031909	chloromethane	0.14J	0.5	0.7
	acetone	4.2	2.5	42
	methylene chloride	8.1	0.5	81
	chloroform	0.59	0.5	2.9
	toluene	0.74	0.5	3.7
	ethylbenzene	0.11J	0.5	0.55

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309,	chloromethane	B	BL
YS03-GW08A-0309, YS03-GW06-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-GW20-0309, YS03-GW20A-0309, YS03-GW25-0309	acetone	B	BL
YS03-GW08A-0309, YS03-GW20-0309, YS03-GW20A-0309	toluene	B	BL
YS03-GW19-0309, YS03-GW22-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW28-0309	methylene chloride	B	BL
YS03-GW20-0309	2-butanone	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS03-GW08A-0309—the MS and MSD exhibited high recoveries for several compounds however no positive results were exhibited for these compounds therefore no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for sample YS03-GW25-0309—no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Masselink **Date:** 6/3/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA

All Samples

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000
Chloromethane	AVRG		0.27044445	12.062	15.000
Vinyl Chloride	AVRG		0.23003478	8.624	30.000
Bromomethane	AVRG		0.15750282	9.483	15.000
Chloroethane	AVRG		0.09293606	4.050	15.000
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000
Carbon disulfide	AVRG		1.08532070	9.621	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000
Acetone	AVRG		0.04053702	10.407	15.000
Methyl acetate	AVRG		0.26289378	2.681	15.000
Methylene Chloride	AVRG		0.27597997	5.241	15.000
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000
-butanone	AVRG		0.05249255	6.112	15.000
Chloroform	AVRG		0.50756846	6.234	30.000
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000
Benzene	AVRG		1.00716400	6.418	15.000
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000
Trichloroethene	AVRG		0.33002699	6.711	15.000
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000
Bromodichloromethane	AVRG		0.33298211	7.620	15.000
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000
Toluene	AVRG		0.93480306	5.691	30.000
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000
Tetrachloroethene	AVRG		0.31078865	10.185	15.000
2-hexanone	AVRG		0.10893166	9.712	15.000
Dibromochloromethane	AVRG		0.31932787	6.449	15.000
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000
Chlorobenzene	AVRG		0.95964278	5.742	15.000
Ethylbenzene	AVRG		0.48273954	9.366	30.000
m,p-Xylene	AVRG		0.59028287	9.153	15.000
o-Xylene	AVRG		0.56958706	7.286	15.000
Styrene	AVRG		0.93611935	7.857	15.000
Bromoform	AVRG		0.16353005	7.565	15.000
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000

4/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9C30002-TUN171 BFB Injection Date: 03/30/09

Instrument ID: 5972HP71 BFB Injection Time: 1027

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.6
75	30.0 - 60.0% of mass 95	45.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.0
175	5.0 - 9.0% of mass 174	6.1 (7.7)1
176	95.0 - 101.0% of mass 174	76.7 (97.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C30002-CCV	9C30002-CCV1R7	03/30/09	1150
02	VBLKHT	9033012-BLK	9033012-BLK171	03/30/09	1229
03	VHTLCS	9033012-BS1	9033012-BS171	03/30/09	1310
04	VHTLCSD	9033012-BSD	9033012-BSD171	03/30/09	1338
05	YS03-GW08A-0309	0903113-01	0903113-0171	03/30/09	1559
06	YS03-EB01-031809	0903113-02	0903113-0271	03/30/09	1627
07	YS03-EB02-031809	0903113-03	0903113-0371	03/30/09	1655
08	YS03-TB01-031809	0903113-04	0903113-0471	03/30/09	1724
09	YS03-GW06-0309	0903113-05	0903113-0571	03/30/09	1752
10	YS03-GW19-0309	0903113-06	0903113-0671	03/30/09	1820
11	YS03-GW28-0309	0903113-07	0903113-0771	03/30/09	1848
12	YS03-GW22-0309	0903113-08	0903113-0871	03/30/09	1916
13	YS03-FB01-031909	0903113-09	0903113-0971	03/30/09	1945
14	YS03-EB02-031909	0903113-10	0903113-1071	03/30/09	2013
15					
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Instrument ID: 5972HP71 Calibration Date: 03/30/09 Time: 1150

Lab File ID: 9C30002-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.3696800	0.3978304	0.3978304	0.001	7.61	90.00	AVRG
Chloromethane	0.2704400	0.1821529	0.1821529	0.1	-32.64	90.00	AVRG
Vinyl Chloride	0.2300400	0.2172002	0.2172002	0.001	-5.58	20.00	AVRG
Bromomethane	0.1575000	0.1312390	0.1312390	0.001	-16.67	90.00	AVRG
Chloroethane	0.0929400	0.0813952	0.0813952	0.001	-12.42	90.00	AVRG
Trichlorofluoromethane	0.3021100	0.2887076	0.2887076	0.001	-4.44	90.00	AVRG
1,1-Dichloroethene	0.2943500	0.2856794	0.2856794	0.001	-2.94	20.00	AVRG
Carbon disulfide	1.0853200	1.0598244	1.0598244	0.001	-2.35	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1636671	0.1636671	0.001	8.31	90.00	AVRG
Acetone	0.0405400	0.0402414	0.0402414	0.001	-0.74	90.00	AVRG
Methyl acetate	0.2628900	0.2558894	0.2558894	0.001	-2.66	90.00	AVRG
Methylene Chloride	0.2759800	0.2717010	0.2717010	0.001	-1.55	90.00	AVRG
rans-1,2-Dichloroethene	0.3088100	0.3074680	0.3074680	0.001	-0.43	90.00	AVRG
ethyl-tert-butyl ether	0.2691400	0.2771136	0.2771136	0.001	2.96	90.00	AVRG
1,1-Dichloroethane	0.5193300	0.5073585	0.5073585	0.1	-2.30	90.00	AVRG
cis-1,2-Dichloroethene	0.3014500	0.2988226	0.2988226	0.001	-0.87	90.00	AVRG
2-butanone	0.0524900	0.0550133	0.0550133	0.001	4.81	90.00	AVRG
Chloroform	0.5075700	0.5139680	0.5139680	0.001	1.26	20.00	AVRG
1,1,1-Trichloroethane	0.3925800	0.3979289	0.3979289	0.001	1.36	90.00	AVRG
Carbon Tetrachloride	0.2611400	0.2887190	0.2887190	0.001	10.56	90.00	AVRG
Benzene	1.0071600	0.9869344	0.9869344	0.001	-2.01	90.00	AVRG
1,2-Dichloroethane	0.2661800	0.2754015	0.2754015	0.001	3.46	90.00	AVRG
Trichloroethene	0.3300200	0.3324685	0.3324685	0.001	0.74	90.00	AVRG
1,2-Dichloropropane	0.2470600	0.2410720	0.2410720	0.001	-2.42	20.00	AVRG
Bromodichloromethane	0.3329800	0.3425418	0.3425418	0.001	2.87	90.00	AVRG
cis-1,3-Dichloropropene	0.3257500	0.3380420	0.3380420	0.001	3.77	90.00	AVRG
4-Methyl-2-pentanone	0.1780100	0.1740339	0.1740339	0.001	-2.23	90.00	AVRG
Toluene	0.9348000	0.8765514	0.8765514	0.001	-6.23	20.00	AVRG
trans-1,3-Dichloropropene	0.3679300	0.3602359	0.3602359	0.001	-2.09	90.00	AVRG
1,1,2-Trichloroethane	0.2333800	0.2162937	0.2162937	0.001	-7.32	90.00	AVRG
Tetrachloroethene	0.3107900	0.3188347	0.3188347	0.001	2.59	90.00	AVRG
2-hexanone	0.1089300	0.1048387	0.1048387	0.001	-3.76	90.00	AVRG
Dibromochloromethane	0.3193300	0.3218802	0.3218802	0.001	0.80	90.00	AVRG
1,2-Dibromoethane	0.2352400	0.2304110	0.2304110	0.001	-2.05	90.00	AVRG
Chlorobenzene	0.9596400	0.9469425	0.9469425	0.3	-1.32	90.00	AVRG
Ethylbenzene	0.4827400	0.4763685	0.4763685	0.001	-1.32	20.00	AVRG
m,p-Xylene	0.5902800	0.5913993	0.5913993	0.001	0.19	90.00	AVRG
o-Xylene	0.5695900	0.5629688	0.5629688	0.001	-1.16	90.00	AVRG
Styrene	0.9361200	0.9341311	0.9341311	0.001	-0.21	90.00	AVRG
Bromoform	0.1635300	0.1704151	0.1704151	0.1	4.21	90.00	AVRG
Isopropyl Benzene	1.4891700	1.4849933	1.4849933	0.001	-0.28	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5861500	0.5498200	0.5498200	0.3	-6.20	90.00	AVRG

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9C31001-TUN171 BFB Injection Date: 03/31/09

Instrument ID: 5972HP71 BFB Injection Time: 0943

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	44.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.6
175	5.0 - 9.0% of mass 174	6.5 (7.8)1
176	95.0 - 101.0% of mass 174	79.6 (96.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C31001-CCV	9C31001-CCV1R7	03/31/09	1111
02	VBLKHV	9033102-BLK	9033102-BLK171	03/31/09	1147
03	VHVLCS	9033102-BS1	9033102-BS171	03/31/09	1223
04	VHVLCSD	9033102-BSD	9033102-BSD171	03/31/09	1251
05	YS03-EB01-031909	0903113-11	0903113-1171	03/31/09	1320
06	YS03-TB01-031909	0903113-12	0903113-1271	03/31/09	1348
07	YS03-GW25-0309	0903113-13	0903113-1371	03/31/09	1416
08	YS03-GW27-0309	0903113-14	0903113-1471	03/31/09	1445
09	YS03-GW20A-0309	0903113-15	0903113-1571	03/31/09	1513
10	YS03-GW20-0309	0903113-16	0903113-1671	03/31/09	1541
11	YS03-GW25P-0309	0903113-17	0903113-1771	03/31/09	1609
12	YS03-EB01-032009	0903113-18	0903113-1871	03/31/09	1637
13	YS03-EB02-032009	0903113-19	0903113-1971	03/31/09	1706
14	YS03-TB01-032009	0903113-20	0903113-2071	03/31/09	1734
15	YS03-GW08A-0309MS	9033102-MS1	9033102-MS171	03/31/09	1802
16	YS03-GW08A-0309MSD	9033102-MSD	9033102-MSD171	03/31/09	1830
17					
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Instrument ID: 5972HP71 Calibration Date: 03/31/09 Time: 1111

Lab File ID: 9C31001-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4670012	0.4670012	0.001	26.32	90.00	AVRG	
Chloromethane	0.2704400	0.1943766	0.1943766	0.1	-28.12	90.00	AVRG	I
Vinyl Chloride	0.2300400	0.2473023	0.2473023	0.001	7.50	20.00	AVRG	
Bromomethane	0.1575000	0.1358013	0.1358013	0.001	-13.78	90.00	AVRG	
Chloroethane	0.0929400	0.0897082	0.0897082	0.001	-3.48	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3685704	0.3685704	0.001	22.00	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3411470	0.3411470	0.001	15.90	20.00	AVRG	
Carbon disulfide	1.0853200	1.1750394	1.1750394	0.001	8.27	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.2020064	0.2020064	0.001	33.68	90.00	AVRG	
Acetone	0.0405400	0.0363159	0.0363159	0.001	-10.42	90.00	AVRG	4R
Methyl acetate	0.2628900	0.2223396	0.2223396	0.001	-15.42	90.00	AVRG	
Methylene Chloride	0.2759800	0.2831008	0.2831008	0.001	2.58	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3477114	0.3477114	0.001	12.60	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2230815	0.2230815	0.001	-17.11	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5484070	0.5484070	0.1	5.60	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3202205	0.3202205	0.001	6.23	90.00	AVRG	4R
2-butanone	0.0524900	0.0435348	0.0435348	0.001	-17.06	90.00	AVRG	
Chloroform	0.5075700	0.5651640	0.5651640	0.001	11.35	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4624428	0.4624428	0.001	17.80	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3330174	0.3330174	0.001	27.52	90.00	AVRG	
Benzene	1.0071600	1.0800897	1.0800897	0.001	7.24	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2821877	0.2821877	0.001	6.01	90.00	AVRG	
Trichloroethene	0.3300200	0.3800479	0.3800479	0.001	15.16	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2489088	0.2489088	0.001	0.75	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3624158	0.3624158	0.001	8.84	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3381172	0.3381172	0.001	3.80	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1387438	0.1387438	0.001	-22.06	90.00	AVRG	
Toluene	0.9348000	0.9763982	0.9763982	0.001	4.45	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3391677	0.3391677	0.001	-7.82	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2100936	0.2100936	0.001	-9.98	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3837095	0.3837095	0.001	23.46	90.00	AVRG	
2-hexanone	0.1089300	0.0818447	0.0818447	0.001	-24.86	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3230499	0.3230499	0.001	1.16	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2244259	0.2244259	0.001	-4.60	90.00	AVRG	
Chlorobenzene	0.9596400	1.0352672	1.0352672	0.3	7.88	90.00	AVRG	
Ethylbenzene	0.4827400	0.5483445	0.5483445	0.001	13.59	20.00	AVRG	
m,p-Xylene	0.5902800	0.6843277	0.6843277	0.001	15.93	90.00	AVRG	
o-Xylene	0.5695900	0.6417057	0.6417057	0.001	12.66	90.00	AVRG	
Styrene	0.9361200	1.0300525	1.0300525	0.001	10.03	90.00	AVRG	
Bromoform	0.1635300	0.1653898	0.1653898	0.1	1.14	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.8279037	1.8279037	0.001	22.75	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.5861500	0.5036221	0.5036221	0.3	-14.08	90.00	AVRG	

FORM VII VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHT

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9033012-BLK171 Lab Sample ID: 9033012-BLK1

Date Analyzed: 03/30/09 Time Analyzed: 1229

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

		SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
Chl	1				
	01	VHTLCS	9033012-BS1	9033012-BS17	1310
	02	VHTLCSD	9033012-BSD1	9033012-BSD1	1338
B	B	03 YS03-GW08A-0309	0903113-01	0903113-0171	1559
	04	YS03-EB01-031809	0903113-02	0903113-0271	1627
	05	YS03-EB02-031809	0903113-03	0903113-0371	1655
	06	YS03-TB01-031809	0903113-04	0903113-0471	1724
B	B	07 YS03-GW06-0309	0903113-05	0903113-0571	1752
B		08 YS03-GW19-0309	0903113-06	0903113-0671	1820
B	B	09 YS03-GW28-0309	0903113-07	0903113-0771	1848
B	B	10 YS03-GW22-0309	0903113-08	0903113-0871	1916
	11	YS03-FB01-031909	0903113-09	0903113-0971	1945
	12	YS03-EB02-031909	0903113-10	0903113-1071	2013
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
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	22				
	23				
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	25				
	26				
	27				
	28				
	29				
	30				

COMMENTS: Chloromethane 0.19J (0.50 ug/L
Acetone 1.3J (2.5)
2-hexanone 0.72J (2.5)
1,2,4-trichlorobenzene 0.16J (0.5)

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Lab File ID: 9033102-BLK171 Lab Sample ID: 9033102-BLK1

Date Analyzed: 03/31/09 Time Analyzed: 1147

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

Chl tri

BBBB

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHVLCS	9033102-BS1	9033102-BS17	1223
02	VHVLCSD	9033102-BSD1	9033102-BSD1	1251
03	YS03-EB01-031909	0903113-11	0903113-1171	1320
04	YS03-TB01-031909	0903113-12	0903113-1271	1348
05	YS03-GW25-0309	0903113-13	0903113-1371	1416
06	YS03-GW27-0309	0903113-14	0903113-1471	1445
07	YS03-GW20A-0309	0903113-15	0903113-1571	1513
08	YS03-GW20-0309	0903113-16	0903113-1671	1541
09	YS03-GW25P-0309	0903113-17	0903113-1771	1609
10	YS03-EB01-032009	0903113-18	0903113-1871	1637
11	YS03-EB02-032009	0903113-19	0903113-1971	1706
12	YS03-TB01-032009	0903113-20	0903113-2071	1734
13	YS03-GW08A-0309MS	9033102-MS1	9033102-MS17	1802
14	YS03-GW08A-0309MSD	9033102-MSD1	9033102-MSD1	1830
15				
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30				

COMMENTS: Chloromethane 0.16J ug/L (0.5)
1,2,4-trichloromethane 0.15J

FORM IV VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS03-GW25-0309
Duplicate Sample ID: YS03-GW25P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
vinyl chloride	4.3	4.9	13
cis-1,2-dichloroethene	52	52	0
trichloroethene	9.6	9.5	1
1,2-dichloroethene (total)	51	51	0
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

* one or both values below CRQL

COMMENTS: No qualifications required.

Initial Calibration Date: 3/28/2009

RRF and %RSD Calculations:

Compound Name: chloromethane
Lab Value: 0.325

Area of Compound	830175
Area of Internal STD	510420
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.325

Compound Name: 4-methyl-2-pentanone
Lab Value: 8.34

RRF of STD 1	0.1549
RRF of STD 2	0.1775
RRF of STD 3	0.1925
RRF of STD 4	0.1895
RRF of STD 5	0.1757
Calculated % RSD	8.34

Continuing Calibration File ID: 3/31/2009

RRF and %D Calculations:

Compound Name: carbon disulfide
Lab Value: 1.175

Area of Compound	679486
Area of Internal STD	578264
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.175

Compound Name: benzene
Lab Value: 7.2

Average RRF	1.007
Calibration Check RRF	1.080
Calculated % D	-7.2

SAMPLE CALCULATION

Sample ID: YS03-EB01-031809
Standard ID: 4/1/2009
Compound: chloromethane
Concnetration: 0.2 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	4601		
Area of Internal STD	427854		
Conc. of Internal (ng)	125	250	
RRF of Compound	0.27044		
Dilution Factor	1	1	
Weight of Sample	NA		
Volume of Sample	25	NA	
% Moisture	NA	0.83	
Aliquot of sample	NA	NA	
Concentration	0.20	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	10.119	4.493	0.444
Standard	10.124	4.478	0.442

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0903113
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-GW08A-0309, YS03-EB01-031809, YS03-EB02-031809, YS03-TB01-031809, YS03-GW06-0309, YS03-GW19-0309, YS03-GW28-0309, YS03-GW22-0309, YS03-FB01-031909, YS03-EB02-031909, YS03-EB01-031909, YS03-TB01-031909, YS03-GW25-0309, YS03-GW27-0309, YS03-GW20A-0309, YS03-GW20-0309, YS03-GW25P-0309, YS03-EB01-032009, YS03-EB02-032009 AND YS03-TB01-032009

The 20 aqueous samples listed above were received intact, refrigerated between 0.1°C and 0.8°C, with proper documentation, in sealed shipping containers, on March 19, 20 and 21, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903113 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, samples YS03-GW25P-0309, YS03-GW25-0309, YS03-GW27-0309, YS03-GW19-0309, YS03-GW28-0309 and YS03-GW22-0309, were initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9C28002-CAL171, 9C28002-CAL271, 9C28002-CAL471 and 9C30002-CCV1R71, process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS03-GW08A-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 3, 2009

This SDG contains dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/18-3/20
Received Date: 3/19-3/21
Prep. Dates: no prep – dissolved; 4/1 ICP total; 4/1 Hg total, 3/30 Hg dissolved
Analysis Dates: 3/31 dissolved ICP, 4/9 total ICP; 4/3 Hg total, 3/31 Hg dissolved

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	beryllium	0.771B ug/L	3.855 ug/L	B	BL
	chromium	0.865B ug/L	4.325 ug/L	B	BL
	copper	-1.629B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	lead	-1.867B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	nickel	0.885B ug/L	4.425 ug/L	B	BL
ICB/CCB	antimony	2.4B ug/L	12 ug/L	B	BL
	vanadium	0.6B ug/L	3.0 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	beryllium	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW28-0309	chromium	B	BL
all total metals field samples	copper	L/UL	BL
all total metals field samples	lead	L/UL	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	nickel	B	BL
all total metals field samples	antimony	B	BL
YS06-GW06-0309, YS06-GW08A-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW28-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	potassium	575.247B ug/L	2876 ug/L	B	BL
CCB – dissolved metals	aluminum	57.4B ug/L	287 ug/L	B	BL
	beryllium	0.6B ug/L	3.0 ug/L	B	BL
	chromium	1.8B ug/L	9 ug/L	B	BL
	cobalt	0.7B ug/L	3.5 ug/L	B	BL
	iron	31.7B ug/L	158.5 ug/L	B	BL
	nickel	2.2B ug/L	11 ug/L	B	BL
	vanadium	1.0B ug/L	5 ug/L	B	BL
	zinc	1.9B ug/L	9.5 ug/L	B	BL
YS03-EB01-031809	silver	0.93B ug/L	4.65 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	potassium	B	BL
YS06-GW19-0309, YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	aluminum	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	beryllium	B	BL
YS06-GW25-0309	chromium	B	BL
YS06-GW20-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	cobalt	B	BL
YS06-GW06-0309, YS06-GW19-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309	iron	B	BL
YS06-GW06-0309, YS06-GW20-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW27-0309	nickel	B	BL
YS06-GW06-0309, YS06-GW22-0309, YS06-GW27-0309, YS06-GW28-0309	vanadium	B	BL
YS06-GW08A-0309, YS06-GW06-0309, YS06-GW19-0309, YS06-GW20A-0309, YS06-GW22-0309, YS06-GW25-0309, YS06-GW25P-0309, YS06-GW28-0309	zinc	B	BL
YS06-GW08A-0309	silver	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS06-GW08A-0309 analyzed for total metals exhibited compliant recovery for all analytes. No qualifications were required. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS06-GW08A-0309 analyzed for the ICP dissolved metals exhibited non-compliant recoveries for selenium (63.7/70.7). Samples are flagged L/UL for Se. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses of samples YS06-GW08A-0309 for total metals exhibited acceptable %Ds for all analytes except potassium (11.8%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

The serial dilution analyses of samples YS06-GW08A-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (123.1%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Total Metals

Sample ID: YS06-GW25-0309 Duplicate Sample ID: YS06-GW25P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	900	746	19%
calcium	146000	148000	1%
iron	2220	1730	25%
manganese	147	155	5%
sodium	7410	7340	1%

Comments: No qualifications were required.

Dissolved Metals

Sample ID: YS06-GW25-0309 Duplicate Sample ID: YS06-GW25P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	148000	150000	1%
manganese	148	153	3%
selenium	8.7	6.4	30%
sodium	6900	7070	2%

Comments: J selenium in both samples. (already flagged for low spike recoveries)

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS06-GW08A-0309
COMPOUND: iron
CONCENTRATION: 810 ug/L
%Solids – na
50 ml

Raw Data result: 810.1338 ug/L

810.1338 ug/L * 0.05L/0.05L = 810.1338 ug/L

Total Metals

EPA SAMPLE ID: YS06-GW6-0309
COMPOUND: manganese
CONCENTRATION: 41.7 ug/L
%Solids – na
50 ml

Raw Data result: 41.73695 ug/L

41.73695 ug/L * 0.05L/0.05L = 41.73695 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JC Cleveland **Date:** 6/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903113

The indicated Sample Delivery Group (SDG) consisting of seventeen (17) water samples was received into the laboratory information management system (LIMS) on March 19, 20, and 21, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 0.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903113-01 ID YS03-GW08A-0309S and YS03-GW08A-0309SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903113-01 ID YS03-GW08A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903113-01 ID YS03-GW08A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

for Teresa Arnett Jennings

Susan W. Bass
Senior Chemist
April 10, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	B	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	1.3	B	1.0	B	0.771	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-219.7	B	-179.8	B	-201.5	B	-193.5	B	-214.654	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.865	B	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	-0.9	B	0.8	U	-1.4	B	-1.6	B	-1.629	B	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	-1.4	B	1.4	U	-1.867	B	P
Magnesium	31.0	U	33.8	B	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.885	B	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

none associated

YSO3-GW08A

Flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2 (5)	C	3 (6)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.6	B	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.9	B	1.0	B	0.5	B	See PB		P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-186.6	B	-209.4	B	-219.1	B	See PB		P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			-1.4	B	-1.4	B	0.8	U	See PB		P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	-1.6	B	-1.8	B	See PB		P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U	0.100	U	0.100	U			CV
Nickel			1.1	B	See PB 0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			5.2	B	NQ 3.3	B	NQ 3.3	U			P
Vanadium			0.6	B	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

See ICB

YS03-GW08A

GW06
GW19
GW28
GW22

GW25
GW27
GW20A
GW20
GW25P

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2016.7690		119.3217	B	2000.00	94.9		P
Antimony	75 - 125	493.9859		10.2855		500.00	96.7		P
Arsenic	75 - 125	35.1571		2.2000	U	40.00	87.9		P
Barium	75 - 125	1912.7230		22.9171	B	2000.00	94.5		P
Beryllium	75 - 125	50.4470		1.1525	B	50.00	98.6		P
Cadmium	75 - 125	48.9634		0.6400	U	50.00	97.9		P
Chromium	75 - 125	195.6102		2.4715	B	200.00	96.6		P
Cobalt	75 - 125	487.2882		1.6000	U	500.00	97.5		P
Copper	75 - 125	239.9525		0.8400	U	250.00	96.0		P
Iron	75 - 125	2103.7950		1159.8559		1000.00	94.4		P
Lead	75 - 125	20.2924		1.4000	U	20.00	101.5		P
Manganese	75 - 125	561.3417		77.4943		500.00	96.8		P
Mercury	75 - 125	1.0700		0.1000	U	1.00	107.0		CV
Nickel	75 - 125	484.3227		0.8636	B	500.00	96.7		P
Selenium	75 - 125	9.6739		2.2000	U	10.00	96.7		P
Silver	75 - 125	44.9313		0.6200	U	50.00	89.9		P
Thallium	75 - 125	46.7427		3.3000	U	50.00	93.5		P
Vanadium	75 - 125	471.4378		0.9826	B	500.00	94.1		P
Zinc	75 - 125	506.6743		5.2000	U	500.00	101.3		P

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2004.2960		119.3217	B	2000.00	94.2		P
Antimony	75 - 125	487.9930		10.2855		500.00	95.5		P
Arsenic	75 - 125	36.4371		2.2000	U	40.00	91.1		P
Barium	75 - 125	1877.7680		22.9171	B	2000.00	92.7		P
Beryllium	75 - 125	49.9641		1.1525	B	50.00	97.6		P
Cadmium	75 - 125	47.9357		0.6400	U	50.00	95.9		P
Chromium	75 - 125	193.1994		2.4715	B	200.00	95.4		P
Cobalt	75 - 125	478.4967		1.6000	U	500.00	95.7		P
Copper	75 - 125	241.8803		0.8400	U	250.00	96.8		P
Iron	75 - 125	2065.0260		1159.8559		1000.00	90.5		P
Lead	75 - 125	18.6972		1.4000	U	20.00	93.5		P
Manganese	75 - 125	555.2668		77.4943		500.00	95.6		P
Mercury	75 - 125	1.0500		0.1000	U	1.00	105.0		CV
Nickel	75 - 125	478.0880		0.8636	B	500.00	95.4		P
Selenium	75 - 125	7.5142		2.2000	U	10.00	75.1		P
Silver	75 - 125	45.1339		0.6200	U	50.00	90.3		P
Thallium	75 - 125	45.8406		3.3000	U	50.00	91.7		P
Vanadium	75 - 125	467.6144		0.9826	B	500.00	93.3		P
Zinc	75 - 125	501.4722		5.2000	U	500.00	100.3		P

NQ MS OK

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-GW08A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903113

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	119.32	B	267.00	U	100.0		P
Antimony	10.29		12.00	U	100.0		P
Arsenic	2.20	U	11.00	U			P
Barium	22.92	B	21.68	B	5.4		P
Beryllium	1.15	B	2.97	B	158.3		P
Cadmium	0.64	U	3.20	U			P
Calcium	89970.70		87386.60		2.9		P
Chromium	2.47	B	3.50	U	100.0		P
Cobalt	1.60	U	8.00	U			P
Copper	0.84	U	4.20	U			P
Iron	1159.86		1107.35		4.5		P
Lead	1.40	U	7.00	U			P
Magnesium	1393.91	B	1362.97	B	2.2		P
Manganese	77.49		77.28		0.3		P
Mercury	0.10	U	0.50	U			CV
Nickel	0.86	B	3.35	U	100.0		P
Potassium	1124.65	B	991.92	B	11.8	E	P
Selenium	2.20	U	11.00	U			P
Silver	0.62	U	3.10	U			P
Sodium	6834.94		7157.53	B	4.7		P
Thallium	3.30	U	16.50	U			P
Vanadium	0.98	B	2.85	U	100.0		P
Zinc	5.20	U	26.00	U			P

JWJ

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903114

The indicated Sample Delivery Group (SDG) consisting of seventeen (17) dissolved water samples was received into the laboratory information management system (LIMS) on March 19, 20, and 21. 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 0.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903114-01 ID YS03-GW08A-0309S and YS03-GW08A-0309SD were inside control limits for the requested analytes except selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903114-01 ID YS03-GW08A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903114-01 ID YS03-GW08A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

for Susan Bass

Susan W. Bass
Senior Chemist
April 1, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	-61.5	B	44.1	U	44.1	U	44.1	U	44.100	U	P
Antimony	2.7	U	2.7	U	2.7	U	2.7	U	2.700	U	P
Arsenic	2.8	U	2.8	U	2.8	U	2.8	U	2.800	U	P
Barium	0.2	U	0.2	U	0.2	U	0.3	B	0.200	U	P
Beryllium	0.3	U	0.3	U	0.3	U	0.3	U	0.320	U	P
Cadmium	0.3	U	0.3	U	0.3	U	0.3	U	0.340	U	P
Calcium	31.5	U	31.5	U	31.5	U	31.5	U	31.500	U	P
Chromium	0.9	U	1.0	B	1.5	B	1.5	B	0.880	U	P
Cobalt	0.6	U	0.6	U	0.6	U	0.6	U	0.650	U	P
Copper	0.9	U	0.9	U	1.0	B	0.9	U	0.900	U	P
Iron	19.9	U	19.9	U	23.5	B	39.6	B	19.900	U	P
Lead	2.6	U	2.6	U	2.6	U	2.6	U	2.600	U	P
Magnesium	18.6	U	18.6	U	18.6	U	22.3	B	18.600	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.430	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	1.3	U	1.3	U	1.3	U	1.3	U	1.300	U	P
Potassium	579.6	B	591.1	B	582.3	B	598.1	B	575.247	B	P
Selenium	4.1	U	4.1	U	4.1	U	4.1	U	4.100	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.610	U	P
Sodium	214.8	U	214.8	U	214.8	U	214.8	U	214.800	U	P
Thallium	6.2	U	6.2	U	6.2	U	6.2	U	6.200	U	P
Vanadium	0.5	U	0.5	U	0.5	U	0.5	B	0.470	U	P
Zinc	0.7	U	0.7	U	2.2	B	1.9	B	0.740	U	P

see PB

none asxc

GW08A

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			44.1	U	57.4	B	52.7	B			P
Antimony			2.7	U	2.7	U	2.7	U			P
Arsenic			2.8	U	2.8	U	2.8	U			P
Barium			0.4	B	0.3	B	0.2	U			P
Beryllium			0.3	U	0.6	B	0.6	B			P
Cadmium			0.3	U	0.3	U	0.3	U			P
Calcium			31.5	U	31.5	U	-38.8	B			P
Chromium			1.8	B	1.4	B	1.4	B			P
Cobalt			0.6	U	0.7	B	0.6	U			P
Copper			0.9	U	0.9	U	-0.9	B			P
Iron			31.7	B	22.6	B	19.9	U			P
Lead			2.6	U	2.6	U	2.6	U			P
Magnesium			18.6	U	18.6	U	18.6	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U	0.100	U	0.100	U			CV
Nickel			2.2	B	1.3	U	1.3	B			P
Potassium			612.4	B	604.4	B	594.7	B			P
Selenium			-4.9	B	4.1	U	4.1	U			P
Silver			0.6	U	0.6	U	0.7	B			P
Sodium			317.6	B	214.8	U	214.8	U			P
Thallium			6.2	U	6.2	U	6.2	U			P
Vanadium			1.0	B	0.6	B	0.6	B			P
Zinc			1.8	B	1.9	B	0.7	U			P

GW08A GW06 GW19 GW28 GW22 GW25 GW27 GW20A GW20 GW25P

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2019.4890		44.1000	U	2000.00	101.0		P
Antimony	75 - 125	512.0054		2.7000	U	500.00	102.4		P
Arsenic	75 - 125	42.4574		4.6592	B	40.00	94.5		P
Barium	75 - 125	2117.8410		24.5538	B	2000.00	104.7		P
Beryllium	75 - 125	48.0232		0.3200	U	50.00	96.0		P
Cadmium	75 - 125	50.1354		0.3400	U	50.00	100.3		P
Chromium	75 - 125	202.9623		0.8800	U	200.00	101.5		P
Cobalt	75 - 125	500.7670		0.6500	U	500.00	100.2		P
Copper	75 - 125	253.7181		0.9000	U	250.00	101.5		P
Iron	75 - 125	1831.2640		810.1338		1000.00	102.1		P
Lead	75 - 125	21.0886		2.6000	U	20.00	105.4		P
Manganese	75 - 125	580.6172		77.3078		500.00	100.7		P
Mercury	75 - 125	0.9740		0.1000	U	1.00	97.4		CV
Nickel	75 - 125	508.7425		1.3000	U	500.00	101.7		P
Selenium	75 - 125	14.1187		7.7458		10.00	63.7	N	P
Silver	75 - 125	45.4945		0.6698	B	50.00	89.6		P
Thallium	75 - 125	50.6622		6.2000	U	50.00	101.3		P
Vanadium	75 - 125	498.1236		0.4700	U	500.00	99.6		P
Zinc	75 - 125	506.0254		0.7929	B	500.00	101.0		P

J UJ

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-GW08A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	2043.5030		44.1000	U	2000.00	102.2		P
Antimony	75 - 125	518.6543		2.7000	U	500.00	103.7		P
Arsenic	75 - 125	43.1633		4.6592	B	40.00	96.3		P
Barium	75 - 125	2143.0080		24.5538	B	2000.00	105.9		P
Beryllium	75 - 125	49.1602		0.3200	U	50.00	98.3		P
Cadmium	75 - 125	51.6218		0.3400	U	50.00	103.2		P
Chromium	75 - 125	206.1846		0.8800	U	200.00	103.1		P
Cobalt	75 - 125	508.7012		0.6500	U	500.00	101.7		P
Copper	75 - 125	253.2757		0.9000	U	250.00	101.3		P
Iron	75 - 125	1876.0630		810.1338		1000.00	106.6		P
Lead	75 - 125	20.8411		2.6000	U	20.00	104.2		P
Manganese	75 - 125	589.6641		77.3078		500.00	102.5		P
Mercury	75 - 125	0.8980		0.1000	U	1.00	89.8		CV
Nickel	75 - 125	515.4078		1.3000	U	500.00	103.1		P
Selenium	75 - 125	14.8122		7.7458		10.00	70.7	N	P
Silver	75 - 125	45.2119		0.6698	B	50.00	89.1		P
Thallium	75 - 125	55.6979		6.2000	U	50.00	111.4		P
Vanadium	75 - 125	505.5922		0.4700	U	500.00	101.1		P
Zinc	75 - 125	515.9023		0.7929	B	500.00	103.0		P

JMJ

Comments:

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-GW08A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903114

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	44.10	U	220.50	U			P
Antimony	2.70	U	21.76	B	100.0		P
Arsenic	4.66	B	14.00	U	100.0		P
Barium	24.55	B	26.85	B	9.4		P
Beryllium	0.32	U	1.60	U			P
Cadmium	0.34	U	1.70	U			P
Calcium	91454.49		91781.30		0.4		P
Chromium	0.88	U	4.40	U			P
Cobalt	0.65	U	3.25	U			P
Copper	0.90	U	4.50	U			P
Iron	810.13		895.46		10.5		P
Lead	2.60	U	13.00	U			P
Magnesium	1461.54	B	1443.63	B	1.2		P
Manganese	77.31		78.51		1.6		P
Mercury	0.10	U	0.50	U			CV
Nickel	1.30	U	6.50	U			P
Potassium	1767.75	B	3944.07	B	123.1	E	P
Selenium	7.75		20.50	U	100.0		P
Silver	0.67	B	3.05	U	100.0		P
Sodium	6938.05		6800.00	B	2.0		P
Thallium	6.20	U	31.00	U			P
Vanadium	0.47	U	2.35	U			P
Zinc	0.79	B	17.08	B	2062.0		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 14, 2009
SDG # 0903136 & 0903137, CompuChem
NWS Yorktown

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903136 and 0903137. The data validation was performed in accordance with the SW-846 Methods 8260B for volatiles and 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS06-EB01-032309	0903136-04	water	X	X	X
YS06-EB01-032409	0903136-08	water	X	X	X
YS06-EB01-032509	0903136-14	water	X	X	X
YS06-EB01-032609	0903136-23	water	X	X	X
YS06-EB02-032309	0903136-05	water	X	X	X
YS06-EB02-032409	0903136-09	water	X	X	X
YS06-EB02-032509	0903136-15	water	X	X	X
YS06-GW01-0309	0903136-02	water	X	X	X
YS06-GW01A-0309	0903136-01	water	X	X	X
YS06-GW01P-0309	0903136-03	water	X	X	X
YS06-GW02-0309	0903136-07	water	X	X	X
YS06-GW03-0309	0903136-16	water	X	X	X
YS06-GW05B-0309	0903136-21	water	X	X	X
YS06-GW05BP-0309	0903136-22	water	X	X	X
YS06-GW07-0309	0903136-20	water	X	X	X
YS06-GW09-0309	0903136-17	water	X	X	X
YS06-GW09A-0309	0903136-18	water	X	X	X
YS06-GW10-0309	0903136-11	water	X	X	X
YS06-GW10A-0309	0903136-12	water	X	X	X
YS06-GW11-0309	0903136-10	water	X	X	X
YS06-TB01-032309	0903136-06	water	X		
YS06-TB01-032409	0903136-13	water	X		
YS06-TB01-032509	0903136-19	water	X		
YS06-GW01A-0309 MS	0903136-01MS	water	X	X	X
YS06-GW01A-0309 MSD	0903136-01MSD	water	X	X	X

The following quality control samples were provided with this SDG: sample YS06-TB01-032309, YS06-TB01-032409 and YS06-TB01-032509-trip blanks; samples YS06-EB01-032309, YS06-EB02-032309, YS06-EB01-032409, YS06-EB02-032409, YS06-EB01-032509, YS06-EB02-032509 and YS06-EB01-032609-equipment blanks; sample YS06-GW01P-0309-field duplicate of sample YS06-GW01-0309; and sample YS06-GW05BP-0309-field duplicate of sample YS06-GW05B-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Sample Condition	
• Technical Holding Times	*
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	*
• Identification/Quantitation	
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Total & Dissolved Metals

The MS/MSD pair analyzed for the dissolved metals exhibited one analyte with recoveries below 30%. Positive results for selenium were qualified as biased low L and non-detect results were rejected R in the dissolved metals field samples.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Two samples contained headspace in all sample vials that resulted in qualifications the data.

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total & Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The MS/MSD pair analyzed for the dissolved metals exhibited several analytes with low recoveries. These analytes were qualified as biased low L/UL in the dissolved metals field samples.

The serial dilution analysis exhibited non-compliant %Ds in the dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the dissolved metals field samples.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were required for the VOA fraction. The case narrative that was submitted with the data package had the incorrect cooler temperatures listed. The laboratory was contacted and a corrected case narrative was submitted.

Sample Condition

VOA

All sample vials for YS06-TB01-032409 and YS06-TB01-032509 contained headspace; therefore results were qualified as biased low (L/UL), qualifier code: OT.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/23-26/09 and samples were received at the laboratory 03/24-27/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/28/09	acetone	0.0405	all samples	L/R	ICL
CC 03/31/09 CC 04/01/09 CC 04/02/09	acetone 2-butanone	0.0363/0.0348/0.0354 0.0435/0.0443/0.0487	all samples	L/R	CCL
CC 03/31/09 CC 04/01/09 CC 04/02/09	chloromethane	-28.12/-31.59/-35.90	all samples	J	CCL
CC 03/31/09	2-hexanone	-24.86	YS06-TB01-032309	J	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHY	chloromethane	0.13J ug/L	0.50 ug/L	0.65
VBLKIB	chloromethane	0.17J	0.5	0.85
	acetone	0.16J	2.5	1.6
VBLKHV	chloromethane	0.16J	0.5	0.8
YS06-TB01-032309	chloromethane	0.25J	0.5	1.25
	acetone	1.4J	2.5	14
YS06-TB01-032409	chloromethane	0.19J	0.5	0.95
	acetone	4.6	2.5	46
YS06-TB01-032509	chloromethane	0.22J	0.5	1.1
	acetone	1.3J	2.5	13
	toluene	0.46J	0.5	2.3
YS06-EB01-032309	chloromethane	0.42J	0.5	2.1
	acetone	13	2.5	130
	chloroform	0.23J	0.5	1.15
	toluene	0.98	0.5	4.9
YS06-EB02-032309	chloromethane	0.7	0.5	3.5
	acetone	7.6	2.5	76
	chloroform	0.41J	0.5	2.05
	toluene	1.7	0.5	8.5
YS06-EB01-032409	chloromethane	1.1	0.5	5.5
	acetone	5.2	2.5	52
	chloroform	0.27J	0.5	1.35
	toluene	1.0	0.5	5
YS06-EB02-032409	chloromethane	0.24J	0.5	1.2
	acetone	6.2	2.5	62
	chloroform	0.26J	0.5	1.3
	toluene	1.0	0.5	5
YS06-EB01-032509	chloromethane	0.29J	0.5	1.45
	acetone	36	2.5	360
	toluene	0.28J	0.5	1.4
YS06-EB02-032509	chloromethane	0.2J	0.5	1.0
	acetone	10	2.5	100
	chloroform	0.48J	0.5	2.4
	toluene	0.45J	0.5	2.25
YS06-FB01-032609	chloromethane	0.3J	0.5	1.5
	acetone	3.2	2.5	32
	chloroform	0.52	0.5	2.6
	toluene	1.8	0.5	9

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all field samples	chloromethane	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309	acetone	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW1 – total metals	beryllium	0.542B ug/L	2.71 ug/L	B	BL
PBW2 – total metals	antimony	2.662B ug/L	13.3 ug/L	B	BL
	chromium	1.253B ug/L	6.265 ug/L	B	BL
	copper	0.969B ug/L	4.845 ug/L	B	BL
	nickel	0.847B ug/L	4.235 ug/L	B	BL
	vanadium	0.669B ug/L	3.345 ug/L	B	BL
	beryllium	-0.672B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-1.953B	≤ 10X MDL (16 ug/L)	L/UL	BL
ICB/CCB Run #2	antimony	3.3B ug/L	16.5 ug/L	B	BL
	chromium	2.0B ug/L	10 ug/L	B	BL
	copper	1.9B ug/L	9.5 ug/L	B	BL
	nickel	0.9B ug/L	4.5 ug/L	B	BL
	vanadium	0.9B ug/L	4.5 ug/L	B	BL
	beryllium	-0.9B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-2.0B	≤ 10X MDL (16 ug/L)	L/UL	BL

Total Metals

Sample ID	Analyte	Q Flag	Q Code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	antimony	B	BL
YS06-GW10-0309	beryllium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	L/UL	BL

Total Metals

Sample ID	Analyte	Q Flag	Q Code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	lead	-2.018B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	copper	-1.433B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	beryllium	0.647B ug/L	3.235 ug/L	B	BL
ICB/CCB – dissolved metals	nickel	1.0B ug/L	5.0 ug/L	B	BL
	selenium	2.3B ug/L	11.5 ug/L	B	BL
	vanadium	0.7B ug/L	3.5 ug/L	B	BL
	thallium	4.4B ug/L	22 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	lead	L/UL	BL
all dissolved metals field samples	copper	L/UL	BL
YS06-GW01-0309, YS06-GW11-0309	beryllium	B	BL
YS06-GW02-0309, YS06-GW03-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW03-0309, YS06-GW10-0309	selenium	B	BL
YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL
YS06-GW07-0309	thallium	B	BL

Total and Dissolved Metals

The matrix spike analysis of sample YS06-GW01A-0309 for dissolved metals exhibited non-compliant %Rs (<80% or >120%) for several analytes. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS06-GW01A-0309	arsenic	all dissolved metals field samples	53.7/52.2	L/UL	MSL
	barium		78.4/78.3		
	beryllium		78.1/77.7		
	lead		68.8/64.0		
	silver		58.1/58.3		
	thallium		66.4/62.2		
	vanadium		77.8/77.5		
	selenium		9.4/1.8	L/R	

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS06-GW01A-0309	potassium	all dissolved metals field samples	21.8	J/UJ	SD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) were met. No validation action was required.

Instrument P4 – Total & Dissolved

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS06-TB01-032409, YS06-TB01-032509	all results	+/-	L/UL	OT
all samples	acetone	+/-	L/R	ICL
all samples	acetone* 2-butanone	+/-	L/R	CCL
all samples	chloromethane	+	J	CCL
YS06-TB01-032309	2-hexanone	+	J	CCL
all field samples	chloromethane	+	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309	acetone	+	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	+	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	antimony	+ up to action level	B	BL
YS06-GW10-0309	beryllium	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	+/- up to action level	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	+/- up to action level	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	+ up to action level	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	+ up to action level	B	BL
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all dissolved metals field samples	lead	+/- up to action level	L/UL	BL
all dissolved metals field samples	copper	+/- up to action level	L/UL	BL
YS06-GW01-0309, YS06-GW11-0309	beryllium	+ up to action level	B	BL
YS06-GW02-0309, YS06-GW03-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	+ up to action level	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW03-0309, YS06-GW10-0309	selenium	+ up to action level	B	BL
YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	+ up to action level	B	BL
YS06-GW07-0309	thallium	+ up to action level	B	BL
all dissolved metals field samples **	arsenic barium beryllium lead silver thallium vanadium	+/-	L/UL	MSL
all dissolved metals field samples	selenium*	+/-	L/R	MSL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

*some positive results for selenium were qualified as B, BL due to blank contamination
** blank contamination flags were used for some analytes rather than matrix spike flags

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0471

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.42	~~UJ~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	13	L ICL
79-20-9	Methyl acetate	0.12	J
75-09-2	Methylene Chloride	3.1	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	3.2	L CCL
67-66-3	Chloroform	0.23	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.98	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WW 053107

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0471

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

05/07

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0871

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	1.1	~~J~~ CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.58	
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.2	L ICL
79-20-9	Methyl acetate	0.17	J
75-09-2	Methylene Chloride	3.5	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	11	L CCL
67-66-3	Chloroform	0.27	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.0	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WR 033109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0871

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1471

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.29	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	36	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.3	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	5.4	L CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.28	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 053109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1471

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2371

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.62	~~U~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	8.8	~~U~~ L ICL
79-20-9	Methyl acetate	0.11	J
75-09-2	Methylene Chloride	4.7	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.8	L CCL
67-66-3	Chloroform	0.35	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.23	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 033109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2371

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0571

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.70	~~B~~ J	CCL
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	7.6		L ICL
79-20-9	Methyl acetate	0.12	J	
75-09-2	Methylene Chloride	5.6		
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	4.9		L CCL
67-66-3	Chloroform	0.41	J	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	1.7		
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

VM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0571

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.14	J
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0971

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.24	~~J~~ J CCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.2	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	3.8	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	L CCL
67-66-3	Chloroform	0.26	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	1.0	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 033109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0971

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1571

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.20	~~J~~	J CCL
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	10		L ICL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	6.7		
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	3.3		L CCL
67-66-3	Chloroform	0.48	J	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.45	J	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

WM 033101

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1571

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0271

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.19	~~JB~~ B BL
75-01-4	Vinyl Chloride	4.1	
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.16	J
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	5.3	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.8	BRL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	3.3	
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	1.8	
156-59-2	cis-1,2-Dichloroethene	18	
78-93-3	2-butanone	2.5	~~J~~ RCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	13	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.10	~~J~~ BRL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0271

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	21	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.0	J B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.16	J B BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

053101

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW01P-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0371

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.17	~~JB~~ B BL
75-01-4	Vinyl Chloride	3.9	
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	6.1	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	3.6	
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	2.0	
156-59-2	cis-1,2-Dichloroethene	21	
78-93-3	2-butanone	2.5	~~J~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	14	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.11	~~J~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0371

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	24	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0771

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	~~J~~ B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~J~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.21	~~J~~ B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VPS 040109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0771

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.15	J
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1671

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.21	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.7	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~J~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	~~J~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 053107

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1671

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2171

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.15	~~JB~~ B B2
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	2.2	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.2	B B2
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.82	
156-59-2	cis-1,2-Dichloroethene	3.7	
78-93-3	2-butanone	2.5	~~U~~ B CCL
67-66-3	Chloroform	0.54	B B2
71-55-6	1,1,1-Trichloroethane	0.28	J
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	6.0	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 053109

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2171

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	3.7	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
5BP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2271

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.24	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	2.2	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.2	~~JB~~ B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.76	
156-59-2	cis-1,2-Dichloroethene	3.8	
78-93-3	2-butanone	2.5	~~U~~ R CCL B, BL
67-66-3	Chloroform	0.50	
71-55-6	1,1,1-Trichloroethane	0.29	J
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	6.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

VM 05/04

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
5BP-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2271

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	3.7	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2071

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.10	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.10	J
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	1.1	
78-93-3	2-butanone	2.5	~~J~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.8	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-2071

Level: (low/med) LOW Date Received: 03/27/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	1.0	
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1771

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.18	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.7	~~J~~ B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.11	J
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.11	~~J~~ B,BL
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.87	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.12	~~J~~ B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1771

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.11	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1871

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.6	B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	~~U~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1871

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1171

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.30	~~JB~~ B B2
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ B, B2
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.14	~~J~~ B, B2
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1171

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1271

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.22	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.4	B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~B~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1271

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1071

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.23	~~JB~~ B BL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	~~J~~ B BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~J~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.15	~~J~~ B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 05/10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1071

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0671

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.25	~~J~~ JCCL
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.4	~~J~~ ICCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	0.63	~~J~~ JCCL
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-0671

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 03/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1371

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U VL,OT
74-87-3	Chloromethane	0.19	J VL,OT
75-01-4	Vinyl Chloride	0.50	U VL,OT
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.6	L,OT
79-20-9	Methyl acetate	0.50	U VL,OT
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RCCL
67-66-3	Chloroform	0.50	U VL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WW 053107

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-TB0
1-032409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-1371

Level: (low/med) LOW Date Received: 03/25/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	0.50	U	UL,0T
108-90-7	Chlorobenzene	0.50	U	
100-41-4	Ethylbenzene	0.50	U	
108-38-3	m,p-Xylene	1.0	U	
95-47-6	o-Xylene	0.50	U	
100-42-5	Styrene	0.50	U	
75-25-2	Bromoform	0.50	U	
98-82-8	Isopropyl Benzene	0.50	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	
541-73-1	1,3-Dichlorobenzene	0.50	U	
106-46-7	1,4-Dichlorobenzene	0.50	U	
95-50-1	1,2-Dichlorobenzene	0.50	U	
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U	
120-82-1	1,2,4-Trichlorobenzene	0.50	U	
540-59-0	1,2-Dichloroethene (total)	0.50	U	
1330-20-7	Xylene (total)	0.50	U	
110-82-7	Cyclohexane	0.50	U	
108-87-2	Methylcyclohexane	0.50	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-19R71

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U UL,OT
74-87-3	Chloromethane	0.22	JB L,OT
75-01-4	Vinyl Chloride	0.50	U UL,OT
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.3	JB L,OT
79-20-9	Methyl acetate	0.50	U UL,OT
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ ~~UL,OT~~ R,CCL
67-66-3	Chloroform	0.50	U UL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.46	J L,OT
10061-02-6	trans-1,3-Dichloropropene	0.50	U UL,OT
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

1 correction

WW 05307

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-032509

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 0903136-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0903136-19R71

Level: (low/med) LOW Date Received: 03/26/09

% Moisture: not dec. _____ Date Analyzed: 04/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U VL,OT
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.13	JB VL,OT
540-59-0	1,2-Dichloroethene (total)	0.50	U VL,OT
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

VM 05/10/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
1A-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MS171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	8.3	
74-87-3	Chloromethane	6.2	B
75-01-4	Vinyl Chloride	8.3	B
74-83-9	Bromomethane	6.5	
75-00-3	Chloroethane	7.7	
75-69-4	Trichlorofluoromethane	8.9	
75-35-4	1,1-Dichloroethene	6.2	
75-15-0	Carbon disulfide	7.0	
76-13-1	1,1,2-trichloro-1,2,2-triflu	7.2	
67-64-1	Acetone	33	
79-20-9	Methyl acetate	5.9	
75-09-2	Methylene Chloride	6.6	
156-60-5	trans-1,2-Dichloroethene	6.2	
1634-04-4	Methyl-tert-butyl ether	5.5	
75-34-3	1,1-Dichloroethane	7.0	
156-59-2	cis-1,2-Dichloroethene	6.1	
78-93-3	2-butanone	28	
67-66-3	Chloroform	7.2	
71-55-6	1,1,1-Trichloroethane	7.1	
56-23-5	Carbon Tetrachloride	7.1	B
71-43-2	Benzene	6.3	
107-06-2	1,2-Dichloroethane	7.5	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.5	
75-27-4	Bromodichloromethane	7.0	
10061-01-5	cis-1,3-Dichloropropene	6.2	
108-10-1	4-Methyl-2-pentanone	27	
108-88-3	Toluene	5.3	
10061-02-6	trans-1,3-Dichloropropene	6.1	
79-00-5	1,1,2-Trichloroethane	5.4	
127-18-4	Tetrachloroethene	4.9	
591-78-6	2-hexanone	27	
124-48-1	Dibromochloromethane	5.8	

FORM I VOA

VV 05/31/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW0
1A-0309MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MS171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.4	
108-90-7	Chlorobenzene	5.1	
100-41-4	Ethylbenzene	5.0	
108-38-3	m,p-Xylene	9.9	
95-47-6	o-Xylene	5.0	
100-42-5	Styrene	5.0	
75-25-2	Bromoform	5.5	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.4	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.5	
95-50-1	1,2-Dichlorobenzene	4.6	
96-12-8	1,2-Dibromo-3-Chloropropane	5.5	
120-82-1	1,2,4-Trichlorobenzene	4.3	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	5.6	
108-87-2	Methylcyclohexane	5.6	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW01
A-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MSD171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	7.7	
74-87-3	Chloromethane	5.2	B
75-01-4	Vinyl Chloride	7.3	B
74-83-9	Bromomethane	6.3	
75-00-3	Chloroethane	6.7	
75-69-4	Trichlorofluoromethane	8.0	
75-35-4	1,1-Dichloroethene	6.1	
75-15-0	Carbon disulfide	6.5	
76-13-1	1,1,2-trichloro-1,2,2-triflu	7.3	
67-64-1	Acetone	30	
79-20-9	Methyl acetate	5.6	
75-09-2	Methylene Chloride	6.0	
156-60-5	trans-1,2-Dichloroethene	5.9	
1634-04-4	Methyl-tert-butyl ether	5.7	
75-34-3	1,1-Dichloroethane	6.4	
156-59-2	cis-1,2-Dichloroethene	5.7	
78-93-3	2-butanone	26	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	6.8	
56-23-5	Carbon Tetrachloride	7.4	B
71-43-2	Benzene	5.9	
107-06-2	1,2-Dichloroethane	6.8	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	6.6	
10061-01-5	cis-1,3-Dichloropropene	5.9	
108-10-1	4-Methyl-2-pentanone	25	
108-88-3	Toluene	5.6	
10061-02-6	trans-1,3-Dichloropropene	6.0	
79-00-5	1,1,2-Trichloroethane	5.1	
127-18-4	Tetrachloroethene	5.5	
591-78-6	2-hexanone	25	
124-48-1	Dibromochloromethane	5.7	

FORM I VOA

WW 03/10

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01
A-0309MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix: (soil/water) WATER Lab Sample ID: 9040104-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9040104-MSD171

Level: (low/med) LOW Date Received: 03/24/09

% Moisture: not dec. _____ Date Analyzed: 04/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.3	
108-90-7	Chlorobenzene	5.5	
100-41-4	Ethylbenzene	5.6	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.5	
100-42-5	Styrene	4.9	
75-25-2	Bromoform	5.3	
98-82-8	Isopropyl Benzene	5.9	
79-34-5	1,1,2,2-Tetrachloroethane	5.3	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.3	
95-50-1	1,2-Dichlorobenzene	5.2	
96-12-8	1,2-Dibromo-3-Chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	5.1	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	17	
110-82-7	Cyclohexane	6.4	
108-87-2	Methylcyclohexane	6.5	

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW01A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-01

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	373			P
7440-36-0	Antimony	8.2	~~B~~	B BL	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	31.5	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74000			P
7440-47-3	Chromium	4.4	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~B~~	NL BL	P
7440-50-8	Copper	1.9	~~B~~	B BL	P
7439-89-6	Iron	1300			P
7439-92-1	Lead	2.1	~~B~~	J	P
7439-95-4	Magnesium	2650	~~B~~	J	P
7439-96-5	Manganese	30.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.6	~~B~~	B BL	P
7440-09-7	Potassium	3050	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	14100			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	2.2	~~B~~	B BL	P
7440-66-6	Zinc	9.1	~~B~~	J	P

6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW01-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-02

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	6.9	~~B~~	J	P
7440-38-2	Arsenic	9.2	~~B~~	J	P
7440-39-3	Barium	23.7	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	72600			P
7440-47-3	Chromium	1.2	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	23500			P
7439-92-1	Lead	1.9	~~B~~	J	P
7439-95-4	Magnesium	7690			P
7439-96-5	Manganese	583			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.79	~~B~~	J	P
7440-09-7	Potassium	3070	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	9430			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.4	~~B~~	J	P
7440-66-6	Zinc	5.5	~~B~~	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW01P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-03

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	5.2	~~B~~	J	P
7440-38-2	Arsenic	9.1	~~B~~	J	P
7440-39-3	Barium	22.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	74400			P
7440-47-3	Chromium	0.93	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	21600			P
7439-92-1	Lead	2.2	~~B~~	J	P
7439-95-4	Magnesium	7580			P
7439-96-5	Manganese	566			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.82	~~B~~	J	P
7440-09-7	Potassium	2990	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	9310			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.6	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JAC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW02-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-07

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1780			P
7440-36-0	Antimony	4.8	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	42.9	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	87900			P
7440-47-3	Chromium	8.3	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.88	B	J	P
7439-89-6	Iron	4150			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	2670	B	J	P
7439-96-5	Manganese	47.4			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	B	J	P
7440-09-7	Potassium	1940	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	4890	B	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	5.3	B	J	P
7440-66-6	Zinc	11.9	B	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-10

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	123	B	J	P
7440-36-0	Antimony	3.9	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	32.4	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	64600			P
7440-47-3	Chromium	1.6	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	3860			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	4430	B	J	P
7439-96-5	Manganese	120			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.1	B	J	P
7440-09-7	Potassium	2940	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7490			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-11

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1790			P
7440-36-0	Antimony	5.2	B	J	P
7440-38-2	Arsenic	2.3	B	J	P
7440-39-3	Barium	40.6	B	J	P
7440-41-7	Beryllium	0.57	B	B BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	138000			P
7440-47-3	Chromium	7.5	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	3050			P
7439-92-1	Lead	2.6	B	J	P
7439-95-4	Magnesium	6460			P
7439-96-5	Manganese	64.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	6.5	B	J	P
7440-09-7	Potassium	3310	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	38700			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	9.2	B	J	P
7440-66-6	Zinc	10.2	B	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW10A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-12

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	363			P
7440-36-0	Antimony	4.3	B	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	24.2	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	96600			P
7440-47-3	Chromium	2.5	B	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	2470			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	7040			P
7439-96-5	Manganese	17.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	B	J	P
7440-09-7	Potassium	3610	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	29800			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.7	B	J	P
7440-66-6	Zinc	11.8	B	J	P

JC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW03-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-16

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	710			P
7440-36-0	Antimony	10.5		B BL	P
7440-38-2	Arsenic	3.0	B	J	P
7440-39-3	Barium	30.1	B	J	P
7440-41-7	Beryllium	0.42	B	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	106000			P
7440-47-3	Chromium	5.2	B	B BL	P
7440-48-4	Cobalt	1.6	B	UL BL	P
7440-50-8	Copper	1.5	B	B BL	P
7439-89-6	Iron	3950			P
7439-92-1	Lead	3.0			P
7439-95-4	Magnesium	2940	B	J	P
7439-96-5	Manganese	21.1			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.8	B	B BL	P
7440-09-7	Potassium	4400	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6420			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.8	B	B BL	P
7440-66-6	Zinc	8.6	B	J	P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW09-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-17

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	54.2	~~B~~	J	P
7440-36-0	Antimony	9.6	~~B~~	B BL	P
7440-38-2	Arsenic	3.1	~~B~~	J	P
7440-39-3	Barium	59.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	226000			P
7440-47-3	Chromium	2.0	~~B~~	B BL	P
7440-48-4	Cobalt	2.5	~~B~~	L UL	P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	562			P
7439-92-1	Lead	3.3			P
7439-95-4	Magnesium	12700			P
7439-96-5	Manganese	125			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.7	~~B~~	B BL	P
7440-09-7	Potassium	3750	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	255000			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.3	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-18

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	131	~~B~~	J	P
7440-36-0	Antimony	8.8	~~B~~	B BL	P
7440-38-2	Arsenic	2.8	~~B~~	J	P
7440-39-3	Barium	96.5	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	63700			P
7440-47-3	Chromium	3.9	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~U~~	UL BL	P
7440-50-8	Copper	1.1	~~B~~	B BL	P
7439-89-6	Iron	298			P
7439-92-1	Lead	2.5	~~B~~	J	P
7439-95-4	Magnesium	1030	~~B~~	J	P
7439-96-5	Manganese	12.8			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.9	~~B~~	B BL	P
7440-09-7	Potassium	4430	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	67500			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.5	~~B~~	B BL	P
7440-66-6	Zinc	6.4	~~B~~	J	P

AC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW07-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-20

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1050			P
7440-36-0	Antimony	9.9	~~B~~	B BL	P
7440-38-2	Arsenic	5.4	~~B~~	J	P
7440-39-3	Barium	43.8	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	130000			P
7440-47-3	Chromium	6.3	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~U~~	UL BL	P
7440-50-8	Copper	2.1	~~B~~	B BL	P
7439-89-6	Iron	2360			P
7439-92-1	Lead	2.9	~~B~~	J	P
7439-95-4	Magnesium	5410			P
7439-96-5	Manganese	89.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.9	~~B~~	J	P
7440-09-7	Potassium	1540	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	38400			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	6.9	~~B~~	J	P
7440-66-6	Zinc	15.1	~~B~~	J	P

JMC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW05B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-21

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1770			P
7440-36-0	Antimony	11.4		B BL	P
7440-38-2	Arsenic	6.0	~~B~~	J	P
7440-39-3	Barium	32.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~B~~	ML BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	114000			P
7440-47-3	Chromium	9.7	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	~~B~~	ML BL	P
7440-50-8	Copper	2.6	~~B~~	B BL	P
7439-89-6	Iron	3890			P
7439-92-1	Lead	3.9			P
7439-95-4	Magnesium	3180	~~B~~	J	P
7439-96-5	Manganese	41.0			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	5.1	~~B~~	J	P
7440-09-7	Potassium	1530	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8920			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	15.5	~~B~~	J	P
7440-66-6	Zinc	13.4	~~B~~	J	P

JLC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW05BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-22

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1690			P
7440-36-0	Antimony	10.0	B	B BL	P
7440-38-2	Arsenic	5.0	B	J	P
7440-39-3	Barium	31.8	B	J	P
7440-41-7	Beryllium	0.42	B	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	115000			P
7440-47-3	Chromium	9.6	B	B BL	P
7440-48-4	Cobalt	1.6	B	UL BL	P
7440-50-8	Copper	2.6	B	B BL	P
7439-89-6	Iron	3540			P
7439-92-1	Lead	4.6			P
7439-95-4	Magnesium	3160	B	J	P
7439-96-5	Manganese	38.9			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	4.9	B	J	P
7440-09-7	Potassium	1460	B	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	8850			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	15.3	B	J	P
7440-66-6	Zinc	12.7	B	J	P

4/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-04

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	10.1	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	4.6	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-08

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-14

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 6/1009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-23

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.5	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.85	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.75	~~B~~	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JC 01409

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-05

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-09

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 4/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Matrix (soil/water): WATER Lab Sample ID: 0903136-15

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JJC 6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
XS06-GW01-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-02

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	13.3		~~N~~ L	P	MSL
7440-39-3	Barium	19.7	~~B~~	~~B~~ L	P	MSL
7440-41-7	Beryllium	0.42	~~B~~	B BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	69200			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	19900			P	
7439-92-1	Lead	1.4	~~N~~	~~N~~ UL	P	BL
7439-95-4	Magnesium	7980			P	
7439-96-5	Manganese	551			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	3450	~~B~~	~~B~~ J SD	P	
7782-49-2	Selenium	4.1	~~B~~	~~N~~ B BL	P	
7440-22-4	Silver	0.62	~~N~~	~~N~~ UL	P	MSL
7440-23-5	Sodium	9400			P	
7440-28-0	Thallium	3.3	~~N~~	~~N~~ UL	P	MSL
7440-62-2	Vanadium	1.2	~~B~~	~~B~~ J	P	L MSL
7440-66-6	Zinc	5.2	U		P	

x2 Corr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW01A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-01

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	379			P	
7440-36-0	Antimony	97.6			P	
7440-38-2	Arsenic	20.3		~~N~~ L	P	MSL
7440-39-3	Barium	387		L	P	
7440-41-7	Beryllium	9.1		L	P	
7440-43-9	Cadmium	8.5			P	
7440-70-2	Calcium	69600			P	
7440-47-3	Chromium	18.0			P	
7440-48-4	Cobalt	88.9			P	
7440-50-8	Copper	49.0			P	
7439-89-6	Iron	382			P	
7439-92-1	Lead	5.5		~~N~~ L	P	MSL
7439-95-4	Magnesium	3690	~~B~~	J	P	
7439-96-5	Manganese	49.5			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	74.5			P	
7440-09-7	Potassium	4430	~~B~~	~~N~~ J SD	P	
7782-49-2	Selenium	9.8		~~N~~ B BL	P	
7440-22-4	Silver	15.7		~~N~~ L	P	MSL
7440-23-5	Sodium	17200			P	
7440-28-0	Thallium	21.9		~~N~~ L	P	MSL
7440-62-2	Vanadium	90.8		L	P	MSL
7440-66-6	Zinc	41.7			P	

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW01P-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-03

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	12.4		L	P	MSL
7440-39-3	Barium	19.2		↓	P	↓
7440-41-7	Beryllium	0.42		UL	P	MSL
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	69300			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	19000			P	
7439-92-1	Lead	1.4		UL	P	MSL
7439-95-4	Magnesium	7750			P	
7439-96-5	Manganese	533			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	3380		J SD	P	
7782-49-2	Selenium	2.6		BL	P	
7440-22-4	Silver	0.62		UL	P	MSL
7440-23-5	Sodium	9370			P	
7440-28-0	Thallium	3.3		UL	P	MSL
7440-62-2	Vanadium	1.1		L	P	↓.
7440-66-6	Zinc	7.8		J	P	

JLC 6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
TS06-GW02-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-06

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.2	~~U~~	~~X~~ L	P	MSL
7440-39-3	Barium	32.2	~~U~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	↓
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	82000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	397			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	2210	~~U~~	J	P	
7439-96-5	Manganese	27.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.72	~~U~~	B BL	P	
7440-09-7	Potassium	1300	~~U~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	4530	~~U~~	J	P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	5.2	U		P	

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW03-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-14

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.3	B	L	P	MSL
7440-39-3	Barium	23.1	B	L	P	
7440-41-7	Beryllium	0.42	B	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	93100			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	236			P	
7439-92-1	Lead	1.4	B	UL	P	MSL
7439-95-4	Magnesium	2550	B	J	P	
7439-96-5	Manganese	9.4	B	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.94	B	B BL	P	
7440-09-7	Potassium	3900	B	J SD	P	
7782-49-2	Selenium	2.4	B	B BL	P	
7440-22-4	Silver	0.62	U	UL	P	MSL
7440-23-5	Sodium	5900			P	
7440-28-0	Thallium	4.1	B	L	P	MSL
7440-62-2	Vanadium	0.57	B	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW05B-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-18

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	4.0	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	24.4	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	112000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	2730	~~B~~	J	P	
7439-96-5	Manganese	8.5	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.5	~~B~~	B BL	P	
7440-09-7	Potassium	849	~~B~~	E J SD	P	
7782-49-2	Selenium	3.3	~~B~~	~~X~~ ~~B~~ BL	P	L MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	8290			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

MC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW05BP-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-19

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.6	~~B~~	~~B~~ L	P	MSL
7440-39-3	Barium	24.1	~~B~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	112000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~B~~ UL	P	MSL
7439-95-4	Magnesium	2670	~~B~~	J	P	
7439-96-5	Manganese	12.3			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	835	~~B~~	~~B~~ J SD	P	
7782-49-2	Selenium	4.0	~~B~~	~~B BL~~	P	L MSL
7440-22-4	Silver	0.62	~~U~~	~~B~~ UL	P	MSL
7440-23-5	Sodium	8160			P	
7440-28-0	Thallium	3.3	~~U~~	~~B~~ UL	P	MSL
7440-62-2	Vanadium	0.87	~~B~~	B BL	P	
7440-66-6	Zinc	5.2	U		P	

JC 6/4/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW07-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-17

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.3	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	37.4	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	↓
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	124000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	5100			P	
7439-96-5	Manganese	45.8			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.8	~~B~~	B BL	P	
7440-09-7	Potassium	1100	~~B~~	~~X~~ J SD	P	
7782-49-2	Selenium	3.0	~~B~~	~~X~~ L	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	↓
7440-23-5	Sodium	37000			P	
7440-28-0	Thallium	3.7	~~B~~	~~X~~ B BL	P	
7440-62-2	Vanadium	0.62	~~B~~	B BL	P	
7440-66-6	Zinc	6.0	~~B~~	J	P	

JC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS06-GW09-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-15

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.2	~~U~~	~~X~~ UL	P	MSL
7440-39-3	Barium	55.9	~~B~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	254			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	12600			P	
7439-96-5	Manganese	119			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.6	~~U~~	B BL	P	
7440-09-7	Potassium	4010	~~B~~	BJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ UL	P	R MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	260000			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.78	~~B~~	B BL	P	
7440-66-6	Zinc	5.2	U		P	

X1corr JAC 61009

JAC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW09A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-16

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	6.2	~~B~~	~~N~~ L	P	MSL
7440-39-3	Barium	63.4	~~B~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	46500			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	4.1	~~B~~	J	P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~N~~ UL	P	MSL
7439-95-4	Magnesium	1170	~~B~~	J	P	
7439-96-5	Manganese	8.7	~~B~~	J	P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	1.3	~~B~~	B BL	P	
7440-09-7	Potassium	4670	~~B~~	EJ SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~N~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~N~~ UL	P	MSL
7440-23-5	Sodium	59500			P	
7440-28-0	Thallium	3.3	~~U~~	~~N~~ UL	P	MSL
7440-62-2	Vanadium	0.90	~~B~~	B BL	P	
7440-66-6	Zinc	9.7	~~B~~	J	P	

6/4/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-10

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	4.5	~~B~~	~~W~~ L	P	MSL
7440-39-3	Barium	31.8	~~B~~	L	P	
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	130000			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	24.6	U		P	
7439-92-1	Lead	1.4	~~U~~	~~W~~ UL	P	MSL
7439-95-4	Magnesium	6330			P	
7439-96-5	Manganese	3.0	~~B~~	J	P	
7439-97-6	Mercury	0.14	~~U~~	J	CV	
7440-02-0	Nickel	0.67	U		P	
7440-09-7	Potassium	2830	~~B~~	~~B~~ JSD	P	
7782-49-2	Selenium	4.3	~~B~~	~~W~~ BJL	P	
7440-22-4	Silver	0.62	~~U~~	~~W~~ UL	P	MSL
7440-23-5	Sodium	39800			P	
7440-28-0	Thallium	3.3	~~U~~	~~W~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	MSL
7440-66-6	Zinc	5.2	U		P	

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-GW11-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-09

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	2.4	~~B~~	~~X~~ L	P	MSL
7440-39-3	Barium	30.7	~~B~~	L	P	↓
7440-41-7	Beryllium	0.92	~~B~~	B BL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	62600			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	3100			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	4700	~~B~~	J	P	
7439-96-5	Manganese	112			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.70	~~B~~	B BL	P	
7440-09-7	Potassium	3200	~~B~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	7650			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	5.2	U		P	

BC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW10A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-11

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	53.4	U		P	
7440-36-0	Antimony	2.4	U		P	
7440-38-2	Arsenic	3.4	~~U~~	~~X~~ L	P	MSL
7440-39-3	Barium	20.8	~~U~~	L	P	↓
7440-41-7	Beryllium	0.42	~~U~~	UL	P	
7440-43-9	Cadmium	0.64	U		P	
7440-70-2	Calcium	93900			P	
7440-47-3	Chromium	0.70	U		P	
7440-48-4	Cobalt	1.6	U		P	
7440-50-8	Copper	0.84	U		P	
7439-89-6	Iron	382			P	
7439-92-1	Lead	1.4	~~U~~	~~X~~ UL	P	MSL
7439-95-4	Magnesium	7300			P	
7439-96-5	Manganese	10.6			P	
7439-97-6	Mercury	0.10	U		CV	
7440-02-0	Nickel	0.96	~~U~~	B BL	P	
7440-09-7	Potassium	3700	~~U~~	~~X~~ J SD	P	
7782-49-2	Selenium	2.2	~~U~~	~~X~~ R	P	MSL
7440-22-4	Silver	0.62	~~U~~	~~X~~ UL	P	MSL
7440-23-5	Sodium	31500			P	
7440-28-0	Thallium	3.3	~~U~~	~~X~~ UL	P	MSL
7440-62-2	Vanadium	0.57	~~U~~	UL	P	↓
7440-66-6	Zinc	7.5	~~U~~	J	P	

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-04

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	~~W~~	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	~~W~~	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	25.2	~~B~~	~~E~~ J	P
7782-49-2	Selenium	2.2	U	~~W~~	P
7440-22-4	Silver	0.62	U	~~W~~	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	~~W~~	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-07

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	N	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	N	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	N	P
7440-22-4	Silver	0.62	U	N	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	N	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

KJC 61009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-12

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	W	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	W	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	W	P
7782-49-2	Selenium	2.2	U	W	P
7440-22-4	Silver	0.62	U	W	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	W	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-032609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-20

Level (low/med): LOW Date Received: 3/27/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	W	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	W	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	W	P
7440-22-4	Silver	0.62	U	W	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	W	P
7440-62-2	Vanadium	0.59	U	J	P
7440-66-6	Zinc	5.2	U		P

JAC 6/1/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-05

Level (low/med): LOW Date Received: 3/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	N	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	N	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	21.0	B	B J	P
7782-49-2	Selenium	2.2	U	N	P
7440-22-4	Silver	0.62	U	N	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.6	B	N J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JMC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-08

Level (low/med): LOW Date Received: 3/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	N	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	N	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	N	P
7440-22-4	Silver	0.62	U	N	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	4.6	B	N J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.3	B	J	P

JLC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-032509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Lab Sample ID: 0903137-13

Level (low/med): LOW Date Received: 3/26/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U	W	P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U	W	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	E	P
7782-49-2	Selenium	2.2	U	W	P
7440-22-4	Silver	0.62	U	W	P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	3.3	U	W	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

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15603

107

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 1 of 1

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER Contract
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40ml	Metals ILM05.3 100ml	F.Metals ILM05.3 100ml	Expl/PETN/3,5-DNA 8330 AL	Expl. SVB	pH / Sample Info (Lab Use): Metals	F. Metals
0903136-20 0903137-17	YSO6-GW07-0309	3/26/09	1005	GW	7	3		2				3	1	1	2	0903141-17	<2	<2
0903162-04	YSO6-TB01-032609	3/26/09	1045	TB	3	3						3						
0903136-21 0903137-18	YSO6-GW05B-0309	3/26/09	1400	GW	7	3		2				3	1	1	2	0903141-18	<2	<2
0903136-22 0903137-19	YSO6-GW05BP-0309	3/26/09	1405	GW	7	3		2				3	1	1	2	-19	<2	<2
0903136-23 0903137-20	YSO6-EB01-032609	3/26/09	1500	GW	7	3		2				3	1	1	2	-20	<2	<2
0903162-01 0903163-01	YSO6-FB01-032609	3/26/09	1510	GW	7	3		2				3	1	1	2(1)	0903168-01	<2	<2
0903162-02 0903163-02	YSO6-GW06-0309	3/26/09	1030	GW	7	3		2				3	1	1	2	0903168-02	<2	<2
0903162-03 0903163-03	YSO6-GW06A-0309	3/26/09	1415	GW	7	3		2				3	1	1	2	0903168-03	<2	<2
0903162-04 0903163-04	YSO6-EB02-032609	3/26/09	1515	GW	7	3		2				3	1	1	2(1)	0903168-04	<2	<2

Residual Chlorine Present? YES No ✓

Lab Use Only

Sample Unpacked By: K Burden
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain: FB01 and EB02 Al 'Rec'd Broken

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or N

Comments: Metals were field filtered larger than pea size air bubble in (1) one trip blank vial

Sample Custody

Relinquished by:		Date/Time: 3/26/09 1700	Received by: K Burden	Date/Time: 3/27/09 10:00	
Relinquished by:		Date/Time:	Received by:	Date/Time:	
Subcontract? (Y) or N If yes, where? EXPL. TO EMPIRICAL		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.1, 0.5, 0.6°C	

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab - Pink copy for customer

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CTO-166
3 coolers

15599

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CHAIN OF CUSTODY

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166		GW - Ground water
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6		WW - Waste water
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		SW - Surface water
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		SO - Soil/Sediment
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N		TB - Trip Blank
Sampler's Name: P. Murphy, M. Ost, C. Bennett	Are high concentrations expected? Y or N? If yes, which ID(s)?		RI - Rinsate
			WP - Wipe
			O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846	Metals ILMO5.3*	F Metals ILMO5.3*	Explo/PETN/1,3,5-DNA 8330	Expl. Sub	pH / Sample Info (Lab Use): Metals	F. Metals
0903136-01 (0903137-01)	YS06-GW01A-0309	3/23/09	1230	GW	21	9		6				9	3	3	6	0903141-01	<2	<2
0903136-02 (0903137-02)	YS06-GW01-0309	3/23/09	1205	GW	7	3		2				3	1	1	2	-02	<2	<2
0903136-03 (0903137-03)	YS06-GW01P-0309	3/23/09	1210	GW	7	3		2				3	1	1	2	-03	<2	<2
0903136-06	YS06-TB01-032309	3/23/09	1335	TB	3	3						3 (2)						
0903136-04 (0903137-04)	YS06-EB01-032309	3/23/09	1335	GW	7	3		2				3	1	1	2	0903141-04	<2	<2
0903136-05 (0903137-05)	YS06-EB02-032309	3/23/09	1330	GW	7	3		2				3	1	1	2	-05	<2	<2

Residual Chlorine Present?
No ✓
Yes ___

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain: (1) one trip blank broken in cooler

Cyanide samples checked for sulfide & chlorine? Y or N (NA)
625 & Phenol samples checked for chlorine? Y or N (NA)
608 samples checked for pH between 5.0-9.0? Y or N (NA)

Comments

Run QA/QC on GW01A (MS/MSD)
only (2) two trip blanks (1) Trip Blank has smaller than pea size air bubble
(KS) 3/24/09

Sample Custody

Relinquished by: [signature]	Date/Time: 3/23/09 1600	Received by: [signature]	Date/Time: 3/24/09 1030
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract (Y) or N If yes, where? Expl. 8330/PETN/3,5 DNA to Empirical (KS) 3/24/09	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.3, 1.3, 0.3 °C

Samples stored 60 days after date of report mailed at no extra charge.

White & Yellow copy to lab - Pink copy for customer

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CTO-166
3 coolers

15601

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CHAIN OF CUSTODY

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Courier
Airbill No.
Sampling Complete? Y or N

AL

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Robetcha Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 40ml	Metals ILM05.3 PL	Filtered Metals ILM05.3 PL	Explo (PETN/3,5-DNA 8330)	Expl.s/s	pH/Sample Info (Lab Use)
0903136-13	YS06-TB01-032409	3/24/09	0830	TB	3	3						3					metals / 3/25/09
0903136-06 / 0903137-06	YS06-GW02-0309	3/24/09	1030	GW	7	3		2				3	1	1	2	0903141-06	2 2 2
0903136-08 / 0903137-07	YS06-EB01-032409	3/24/09	1215	GW	7	3		2				3	1	1	2	0903141-07	2 2 2
0903136-04 / 0903137-08	YS06-EB02-032409	3/24/09	1220	GW	7	3		2				3	1	1	2	0903141-08	2 2 2
0903136-09 / 0903137-09	YS06-GW11-0309	3/24/09	0940	GW	7	3		2				3	1	1	2	0903141-09	2 2 2
0903136-11 / 0903137-10	YS06-GW10-0309	3/24/09	1335	GW	7	3		2				3	1	1	2	0903141-10	2 2 2
0903136-12 / 0903137-11	YS06-GW10A-0309	3/24/09	1515	GW	7	3		2				3	1	1	2	0903141-11	2 2 2

Residual Chlorine Present? Yes ___ No ✓

One AL for each YS06-EB01-032409 & YS06-GW10-0309 were broken upon receipt 3.25.09

Lab Use Only

Sample Unpacked By: C) - Rdp
Sample Order Entry By:
Samples Received in Good Condition? Y or (N)
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Metals were field filtered
2-40ml for TB have smaller than pea size air bubble & 1-40ml TB has larger than pea size air bubble 3.25.09

Sample Custody

Relinquished by:	Date/Time: 3/24/09 1700	Received by: C) - Rdp	Date/Time: 3.25.09 1025
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.6°C, 1.2°C, 1.1°C

Samples stored 60 days after date report mailed at no extra charge.

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CTO-166
2 coolers

15595

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CHAIN OF CUSTODY

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Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6279	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P. Murphy M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846	Metals ILMO5.3	F Metals ILMO5.3	Expl/PETN/1,3,5-DNB 8330	Explosive Sub	pH / Sample Info (Lab Use): Metals	FM
~~0903134-11~~ 0903137-12	YS06-EB01-032509	3/25/09	1415	GW	~~7~~ 3	3		2				3	1	1	2	0903141-12	<2	<2
~~0903135-13~~ 0903137-13	YS06-EB02-032509	3/25/09	1620	GW	7	3		2				3	1	1	2	0903141-13	<2	<2
0903136-19	YS06-TB01-032509	3/25/09	1630	TB	3	3						3				~~0903141-14~~ JK 3.26.09		
~~0903136-16~~ 0903137-14	YS06-GW03-0309	3/25/09	1040	GW	7	3		2				3	1	1	2	0903141-14	<2	<2
~~0903136-17~~ 0903137-15	YS06-GW09-0309	3/25/09	1145	GW	7	3		2				3	1	1	2	0903141-15	<2	<2
~~0903134-18~~ 0903137-16	YS06-GW09A-0309	3/25/09	1515	GW	7	3		2				3	1	1	2	0903141-16	<2	<2

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only	
Sample Unpacked By: CJ-RdP	Cyanide samples checked for sulfide & chlorine? Y or NA
Sample Order Entry By: CJ-RdP	625 & Phenol samples checked for chlorine? Y or NA
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or NA
If no, explain:	

Comments:
Metals were Field Filtered
3-40 ml for TB have pea size air bubbles.
1-40 ml for GW09 & GW09A have smaller than ~~the~~ pea size air bubbles. JK 3.26.09

Sample Custody			
Relinquished by:	Date/Time: 3/25/09 1800	Received by: CJ-RdP	Date/Time: 3.26.09 1026
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? (Y) or N If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 1.1°C, 0.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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Data Completeness

The data package was received complete and intact. Resubmissions were require to correct the case narrative—incorrect cooler temps. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/23-26/09
Received Date: 03/24-27/09
Analysis Dates: 03/31-04/02/09

Cooler Temps: 0.1-1.3°C

All holding time requirements were met. All sample vials for YS06-TB01-032409 and YS06-TB01-032509 contained headspace; therefore results were qualified as biased low (L/UL).

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS06-TB01-032309, YS06-TB01-032409 and YS06-TB01-032509- trip blanks; YS06-EB01-032309, YS06-EB02-032309, YS06-EB01-032409, YS06-EB02-032409, YS06-EB01-032509 and YS06-EB02-032509- equipment blanks; YS06-FB01-032609- field blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKHY	chloromethane	0.13J ug/L	0.50 ug/L	0.65
VBLKIB	chloromethane	0.17J	0.5	0.85
	acetone	0.16J	2.5	1.6
VBLKHV	chloromethane	0.16J	0.5	0.8
YS06-TB01-032309	chloromethane	0.25J	0.5	1.25
	acetone	1.4J	2.5	14
	2-hexanone	0.63J	0.5	3.15
YS06-TB01-032409	chloromethane	0.19J	0.5	0.95
	acetone	4.6	2.5	46
YS06-TB01-032509	chloromethane	0.22J	0.5	1.1
	acetone	1.3J	2.5	13
	toluene	0.46J	0.5	2.3
	1,2,4-trichlorobenzene	0.13J	0.5	0.65
YS06-EB01-032309	chloromethane	0.42J	0.5	2.1
	acetone	13	2.5	130
	methyl acetate	0.12J	0.5	0.6
	methylene chloride	3.1	0.5	31
	2-butanone	3.2	0.5	32
	chloroform	0.23J	0.5	1.15
	toluene	0.98	0.5	4.9
YS06-EB02-032309	chloromethane	0.7	0.5	3.5
	acetone	7.6	2.5	76
	methyl acetate	0.12J	0.5	0.6
	methylene chloride	5.6	0.5	56
	2-butanone	4.9	0.5	49
	chloroform	0.41J	0.5	2.05
	toluene	1.7	0.5	8.5
	chlorobenzene	0.14J	0.5	0.7
YS06-EB01-032409	chloromethane	1.1	0.5	5.5
	bromomethane	0.58	0.5	2.9
	acetone	5.2	2.5	52
	methyl acetate	0.17J	0.5	0.85
	methylene chloride	3.5	0.5	35
	2-butanone	11	0.5	110
	chloroform	0.27J	0.5	1.35
	toluene	1.0	0.5	5
YS06-EB02-032409	chloromethane	0.24J	0.5	1.2
	acetone	6.2	2.5	62
	methylene chloride	3.8	0.5	38
	2-butanone	2.5	0.5	25
	chloroform	0.26J	0.5	1.3
	toluene	1.0	0.5	5
YS06-EB01-032509	chloromethane	0.29J	0.5	1.45
	acetone	36	2.5	360

Blank ID	Compound	Concentration	Reporting Limit	Action Level
	methylene chloride	1.3	0.5	13
	2-butanone	5.4	0.5	54
	toluene	0.28J	0.5	1.4
YS06-EB02-032509	chloromethane	0.2J	0.5	1.0
	acetone	10	2.5	100
	methylene chloride	6.7	0.5	67
	2-butanone	3.3	0.5	33
	chloroform	0.48J	0.5	2.4
	toluene	0.45J	0.5	2.25
YS06-FB01-032609	chloromethane	0.3J	0.5	1.5
	acetone	3.2	2.5	32
	methylene chloride	7.5	0.5	75
	chloroform	0.52	0.5	2.6
	toluene	1.8	0.5	9
	chlorobenzene	0.13J	0.5	0.65

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all field samples	chloromethane	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-GW11-0309	acetone	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW02-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-GW10-0309, YS06-GW11-0309	toluene	B	BL
YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW09-0309	chloroform	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS06-GW01A-0309—several high recoveries however no qualifications required.

Field Duplicate Sample

A field duplicate was submitted for sample YS06-GW01-0309—no qualifications required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Masciandaro Date: 5/31/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA

All samples

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000
Chloromethane	AVRG		0.27044445	12.062	15.000
Vinyl Chloride	AVRG		0.23003478	8.624	30.000
Bromomethane	AVRG		0.15750282	9.483	15.000
Chloroethane	AVRG		0.09293606	4.050	15.000
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000
Carbon disulfide	AVRG		1.08532070	9.621	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000
Acetone	AVRG		0.04053702	10.407	15.000
Methyl acetate	AVRG		0.26289378	2.681	15.000
Methylene Chloride	AVRG		0.27597997	5.241	15.000
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000
-butanone	AVRG		0.05249255	6.112	15.000
Chloroform	AVRG		0.50756846	6.234	30.000
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000
Benzene	AVRG		1.00716400	6.418	15.000
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000
Trichloroethene	AVRG		0.33002699	6.711	15.000
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000
Bromodichloromethane	AVRG		0.33298211	7.620	15.000
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000
Toluene	AVRG		0.93480306	5.691	30.000
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000
Tetrachloroethene	AVRG		0.31078865	10.185	15.000
2-hexanone	AVRG		0.10893166	9.712	15.000
Dibromochloromethane	AVRG		0.31932787	6.449	15.000
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000
Chlorobenzene	AVRG		0.95964278	5.742	15.000
Ethylbenzene	AVRG		0.48273954	9.366	30.000
m,p-Xylene	AVRG		0.59028287	9.153	15.000
o-Xylene	AVRG		0.56958706	7.286	15.000
Styrene	AVRG		0.93611935	7.857	15.000
Bromoform	AVRG		0.16353005	7.565	15.000
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000

L/R

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9C31001-TUN171 BFB Injection Date: 03/31/09

Instrument ID: 5972HP71 BFB Injection Time: 0943

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.0
75	30.0 - 60.0% of mass 95	44.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.6
175	5.0 - 9.0% of mass 174	6.5 (7.8)1
176	95.0 - 101.0% of mass 174	79.6 (96.4)1
177	5.0 - 9.0% of mass 176	5.2 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9C31001-CCV	9C31001-CCV1R7	03/31/09	1111
02	VBLKHV	9033102-BLK	9033102-BLK171	03/31/09	1147
03	VHVLCS	9033102-BS1	9033102-BS171	03/31/09	1223
04	VHVLCSD	9033102-BSD	9033102-BSD171	03/31/09	1251
05	YS06-TB01-032309	0903136-06	0903136-0671	03/31/09	1858
06	YS06-GW01A-0309	0903136-01	0903136-0171	03/31/09	1927
07	YS06-GW01-0309	0903136-02	0903136-0271	03/31/09	1955
08	YS06-GW01P-0309	0903136-03	0903136-0371	03/31/09	2023
09	YS06-EB01-032309	0903136-04	0903136-0471	03/31/09	2051
10	YS06-EB02-032309	0903136-05	0903136-0571	03/31/09	2120
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date: 03/31/09 Time: 1111

Lab File ID: 9C31001-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4670012	0.4670012	0.001	26.32	90.00	AVRG	J
Chloromethane	0.2704400	0.1943766	0.1943766	0.1	-28.12	90.00	AVRG	
Vinyl Chloride	0.2300400	0.2473023	0.2473023	0.001	7.50	20.00	AVRG	
Bromomethane	0.1575000	0.1358013	0.1358013	0.001	-13.78	90.00	AVRG	
Chloroethane	0.0929400	0.0897082	0.0897082	0.001	-3.48	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3685704	0.3685704	0.001	22.00	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3411470	0.3411470	0.001	15.90	20.00	AVRG	
Carbon disulfide	1.0853200	1.1750394	1.1750394	0.001	8.27	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.2020064	0.2020064	0.001	33.68	90.00	AVRG	
Acetone	0.0405400	0.0363159	0.0363159	0.001	-10.42	90.00	AVRG	L/R
Methyl acetate	0.2628900	0.2223396	0.2223396	0.001	-15.42	90.00	AVRG	
Methylene Chloride	0.2759800	0.2831008	0.2831008	0.001	2.58	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3477114	0.3477114	0.001	12.60	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2230815	0.2230815	0.001	-17.11	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5484070	0.5484070	0.1	5.60	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3202205	0.3202205	0.001	6.23	90.00	AVRG	
2-butanone	0.0524900	0.0435348	0.0435348	0.001	-17.06	90.00	AVRG	L/R
Chloroform	0.5075700	0.5651640	0.5651640	0.001	11.35	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4624428	0.4624428	0.001	17.80	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3330174	0.3330174	0.001	27.52	90.00	AVRG	
Benzene	1.0071600	1.0800897	1.0800897	0.001	7.24	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2821877	0.2821877	0.001	6.01	90.00	AVRG	
Trichloroethene	0.3300200	0.3800479	0.3800479	0.001	15.16	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2489088	0.2489088	0.001	0.75	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3624158	0.3624158	0.001	8.84	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3381172	0.3381172	0.001	3.80	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1387438	0.1387438	0.001	-22.06	90.00	AVRG	
Toluene	0.9348000	0.9763982	0.9763982	0.001	4.45	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3391677	0.3391677	0.001	-7.82	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2100936	0.2100936	0.001	-9.98	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3837095	0.3837095	0.001	23.46	90.00	AVRG	
2-hexanone	0.1089300	0.0818447	0.0818447	0.001	-24.86	90.00	AVRG	J
Dibromochloromethane	0.3193300	0.3230499	0.3230499	0.001	1.16	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2244259	0.2244259	0.001	-4.60	90.00	AVRG	
Chlorobenzene	0.9596400	1.0352672	1.0352672	0.3	7.88	90.00	AVRG	
Ethylbenzene	0.4827400	0.5483445	0.5483445	0.001	13.59	20.00	AVRG	
m,p-Xylene	0.5902800	0.6843277	0.6843277	0.001	15.93	90.00	AVRG	
o-Xylene	0.5695900	0.6417057	0.6417057	0.001	12.66	90.00	AVRG	
Styrene	0.9361200	1.0300525	1.0300525	0.001	10.03	90.00	AVRG	
Bromoform	0.1635300	0.1653898	0.1653898	0.1	1.14	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.8279037	1.8279037	0.001	22.75	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.5861500	0.5036221	0.5036221	0.3	-14.08	90.00	AVRG	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9D01001-TUN171 BFB Injection Date: 04/01/09

Instrument ID: 5972HP71 BFB Injection Time: 1036

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.8
75	30.0 - 60.0% of mass 95	44.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	80.5
175	5.0 - 9.0% of mass 174	6.1 (7.6)1
176	95.0 - 101.0% of mass 174	78.8 (97.9)1
177	5.0 - 9.0% of mass 176	5.2 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D01001-CCV	9D01001-CCV1R7	04/01/09	1146
02	VBLKHY	9040104-BLK	9040104-BLK1R7	04/01/09	1258
03	VHYLCS	9040104-BSD	9040104-BSR171	04/01/09	1404
04	YS06-GW02-0309	0903136-07	0903136-0771	04/01/09	1442
05	YS06-EB01-032409	0903136-08	0903136-0871	04/01/09	1510
06	YS06-EB02-032409	0903136-09	0903136-0971	04/01/09	1539
07	YS06-GW11-0309	0903136-10	0903136-1071	04/01/09	1607
08	YS06-GW10-0309	0903136-11	0903136-1171	04/01/09	1635
09	YS06-GW10A-0309	0903136-12	0903136-1271	04/01/09	1703
10	YS06-TB01-032409	0903136-13	0903136-1371	04/01/09	1732
11	YS06-EB01-032509	0903136-14	0903136-1471	04/01/09	1800
12	YS06-EB02-032509	0903136-15	0903136-1571	04/01/09	1828
13	YS06-GW03-0309	0903136-16	0903136-1671	04/01/09	1856
14	YS06-GW09-0309	0903136-17	0903136-1771	04/01/09	1924
15	YS06-GW09A-0309	0903136-18	0903136-1871	04/01/09	1952
16	YS06-GW07-0309	0903136-20	0903136-2071	04/01/09	2049
17	YS06-GW05B-0309	0903136-21	0903136-2171	04/01/09	2117
18	YS06-GW01A-0309MS	9040104-MS1	9040104-MS171	04/01/09	2145
19	YS06-GW01A-0309MSD	9040104-MSD	9040104-MSD171	04/01/09	2214
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FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date: 04/01/09 Time: 1146

Lab File ID: 9D01001-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4226318	0.4226318	0.001	14.32	90.00	AVRG	
Chloromethane	0.2704400	0.1850019	0.1850019	0.1	-31.59	90.00	AVRG	J
Vinyl Chloride	0.2300400	0.2265492	0.2265492	0.001	-1.52	20.00	AVRG	
Bromomethane	0.1575000	0.1342778	0.1342778	0.001	-14.74	90.00	AVRG	
Chloroethane	0.0929400	0.0900631	0.0900631	0.001	-3.10	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3403234	0.3403234	0.001	12.65	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3238719	0.3238719	0.001	10.03	20.00	AVRG	
Carbon disulfide	1.0853200	1.1526931	1.1526931	0.001	6.21	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1854370	0.1854370	0.001	22.72	90.00	AVRG	
Acetone	0.0405400	0.0348869	0.0348869	0.001	-13.94	90.00	AVRG	L/R
Methyl acetate	0.2628900	0.2228346	0.2228346	0.001	-15.24	90.00	AVRG	
Methylene Chloride	0.2759800	0.2780925	0.2780925	0.001	0.76	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3301759	0.3301759	0.001	6.92	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2529217	0.2529217	0.001	-6.02	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5329915	0.5329915	0.1	2.63	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3103939	0.3103939	0.001	2.97	90.00	AVRG	
2-butanone	0.0524900	0.0443878	0.0443878	0.001	-15.44	90.00	AVRG	L/R
Chloroform	0.5075700	0.5449723	0.5449723	0.001	7.37	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4399249	0.4399249	0.001	12.06	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3287206	0.3287206	0.001	25.88	90.00	AVRG	
Benzene	1.0071600	1.0154688	1.0154688	0.001	0.82	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.2809384	0.2809384	0.001	5.54	90.00	AVRG	
Trichloroethene	0.3300200	0.3582421	0.3582421	0.001	8.55	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2387431	0.2387431	0.001	-3.37	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3522757	0.3522757	0.001	5.79	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3345910	0.3345910	0.001	2.71	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1326634	0.1326634	0.001	-25.47	90.00	AVRG	
Toluene	0.9348000	0.8897881	0.8897881	0.001	-4.82	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3456226	0.3456226	0.001	-6.06	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2051640	0.2051640	0.001	-12.09	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3375510	0.3375510	0.001	8.61	90.00	AVRG	
2-hexanone	0.1089300	0.0800537	0.0800537	0.001	-26.51	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3167813	0.3167813	0.001	-0.80	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2171359	0.2171359	0.001	-7.70	90.00	AVRG	
Chlorobenzene	0.9596400	0.9535007	0.9535007	0.3	-0.64	90.00	AVRG	
Ethylbenzene	0.4827400	0.4966949	0.4966949	0.001	2.89	20.00	AVRG	
m,p-Xylene	0.5902800	0.6169091	0.6169091	0.001	4.51	90.00	AVRG	
o-Xylene	0.5695900	0.5772188	0.5772188	0.001	1.34	90.00	AVRG	
Styrene	0.9361200	0.9320948	0.9320948	0.001	-0.43	90.00	AVRG	
Bromoform	0.1635300	0.1631259	0.1631259	0.1	-0.25	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.5436520	1.5436520	0.001	3.66	90.00	AVRG	
1,2,2-Tetrachloroethane	0.5861500	0.5203829	0.5203829	0.3	-11.22	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9D02004-TUN171 BFB Injection Date: 04/02/09

Instrument ID: 5972HP71 BFB Injection Time: 1135

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.1
75	30.0 - 60.0% of mass 95	43.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	82.4
175	5.0 - 9.0% of mass 174	6.0 (7.2)1
176	95.0 - 101.0% of mass 174	81.2 (98.5)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D02004-CCV	9D02004-CCV171	04/02/09	1208
02	VBLKIB	9040218-BLK	9040218-BLK171	04/02/09	1248
03	VIBLCS	9040218-BS1	9040218-BS171	04/02/09	1330
04	YS06-TB01-032509	0903136-19	0903136-19R71	04/02/09	1426
05	YS06-GW05BP-0309	0903136-22	0903136-2271	04/02/09	1454
06	YS06-EB01-032609	0903136-23	0903136-2371	04/02/09	1523
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Instrument ID: 5972HP71 Calibration Date: 04/02/09 Time: 1208

Lab File ID: 9D02004-CCV171 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.3696800	0.4424875	0.4424875	0.001	19.69	90.00	AVRG	
Chloromethane	0.2704400	0.1733480	0.1733480	0.1	-35.90	90.00	AVRG	J
Vinyl Chloride	0.2300400	0.2255233	0.2255233	0.001	-1.96	20.00	AVRG	
Bromomethane	0.1575000	0.1382329	0.1382329	0.001	-12.23	90.00	AVRG	
Chloroethane	0.0929400	0.0903022	0.0903022	0.001	-2.84	90.00	AVRG	
Trichlorofluoromethane	0.3021100	0.3414649	0.3414649	0.001	13.03	90.00	AVRG	
1,1-Dichloroethene	0.2943500	0.3156654	0.3156654	0.001	7.24	20.00	AVRG	
Carbon disulfide	1.0853200	1.0970883	1.0970883	0.001	1.08	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1904663	0.1904663	0.001	26.04	90.00	AVRG	L/R
Acetone	0.0405400	0.0354853	0.0354853	0.001	-12.47	90.00	AVRG	
Methyl acetate	0.2628900	0.2360476	0.2360476	0.001	-10.21	90.00	AVRG	
Methylene Chloride	0.2759800	0.2885451	0.2885451	0.001	4.55	90.00	AVRG	
rans-1,2-Dichloroethene	0.3088100	0.3352972	0.3352972	0.001	8.58	90.00	AVRG	
ethyl-tert-butyl ether	0.2691400	0.2936322	0.2936322	0.001	9.10	90.00	AVRG	
1,1-Dichloroethane	0.5193300	0.5328117	0.5328117	0.1	2.60	90.00	AVRG	
cis-1,2-Dichloroethene	0.3014500	0.3139684	0.3139684	0.001	4.15	90.00	AVRG	
2-butanone	0.0524900	0.0487573	0.0487573	0.001	-7.11	90.00	AVRG	L/R
Chloroform	0.5075700	0.5714269	0.5714269	0.001	12.58	20.00	AVRG	
1,1,1-Trichloroethane	0.3925800	0.4768581	0.4768581	0.001	21.47	90.00	AVRG	
Carbon Tetrachloride	0.2611400	0.3557134	0.3557134	0.001	36.22	90.00	AVRG	
Benzene	1.0071600	1.0540424	1.0540424	0.001	4.65	90.00	AVRG	
1,2-Dichloroethane	0.2661800	0.3031299	0.3031299	0.001	13.88	90.00	AVRG	
Trichloroethene	0.3300200	0.3835301	0.3835301	0.001	16.21	90.00	AVRG	
1,2-Dichloropropane	0.2470600	0.2488973	0.2488973	0.001	0.74	20.00	AVRG	
Bromodichloromethane	0.3329800	0.3758235	0.3758235	0.001	12.87	90.00	AVRG	
cis-1,3-Dichloropropene	0.3257500	0.3146848	0.3146848	0.001	-3.40	90.00	AVRG	
4-Methyl-2-pentanone	0.1780100	0.1488181	0.1488181	0.001	-16.40	90.00	AVRG	
Toluene	0.9348000	0.8917237	0.8917237	0.001	-4.61	20.00	AVRG	
trans-1,3-Dichloropropene	0.3679300	0.3147456	0.3147456	0.001	-14.46	90.00	AVRG	
1,1,2-Trichloroethane	0.2333800	0.2121127	0.2121127	0.001	-9.11	90.00	AVRG	
Tetrachloroethene	0.3107900	0.3479732	0.3479732	0.001	11.96	90.00	AVRG	
2-hexanone	0.1089300	0.0935930	0.0935930	0.001	-14.08	90.00	AVRG	
Dibromochloromethane	0.3193300	0.3471573	0.3471573	0.001	8.71	90.00	AVRG	
1,2-Dibromoethane	0.2352400	0.2352651	0.2352651	0.001	0.01	90.00	AVRG	
Chlorobenzene	0.9596400	0.9816287	0.9816287	0.3	2.29	90.00	AVRG	
Ethylbenzene	0.4827400	0.5030537	0.5030537	0.001	4.21	20.00	AVRG	
m,p-Xylene	0.5902800	0.6222704	0.6222704	0.001	5.42	90.00	AVRG	
o-Xylene	0.5695900	0.6063088	0.6063088	0.001	6.45	90.00	AVRG	
Styrene	0.9361200	0.9710050	0.9710050	0.001	3.73	90.00	AVRG	
Bromoform	0.1635300	0.1856201	0.1856201	0.1	13.51	90.00	AVRG	
Isopropyl Benzene	1.4891700	1.6521141	1.6521141	0.001	10.94	90.00	AVRG	
1,2,2-Tetrachloroethane	0.5861500	0.5064483	0.5064483	0.3	-13.60	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKIB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9040218-BLK171 Lab Sample ID: 9040218-BLK1

Date Analyzed: 04/02/09 Time Analyzed: 1248

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

Chl Acetone

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VIBLCS	9040218-BS1	9040218-BS17	1330
02	YS06-TB01-032509	0903136-19	0903136-19R7	1426
B B 03	YS06-GW05BP-0309	0903136-22	0903136-2271	1454
04	YS06-EB01-032609	0903136-23	0903136-2371	1523
05				
06				
07				
08				
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COMMENTS: Chloromethane 0.17J (0.50)
acetone 1.6J (2.5)
1,2,4-trichlorobenzene 0.14J

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9040104-BLK1R71 Lab Sample ID: 9040104-BLK1

Date Analyzed: 04/01/09 Time Analyzed: 1258

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHYLCS	9040104-BSD1	9040104-BSR1	1404
B-02	YS06-GW02-0309	0903136-07	0903136-0771	1442
03	YS06-EB01-032409	0903136-08	0903136-0871	1510
04	YS06-EB02-032409	0903136-09	0903136-0971	1539
B-05	YS06-GW11-0309	0903136-10	0903136-1071	1607
B-06	YS06-GW10-0309	0903136-11	0903136-1171	1635
B-07	YS06-GW10A-0309	0903136-12	0903136-1271	1703
08	YS06-TB01-032409	0903136-13	0903136-1371	1732
09	YS06-EB01-032509	0903136-14	0903136-1471	1800
10	YS06-EB02-032509	0903136-15	0903136-1571	1828
B-11	YS06-GW03-0309	0903136-16	0903136-1671	1856
B-12	YS06-GW09-0309	0903136-17	0903136-1771	1924
B-13	YS06-GW09A-0309	0903136-18	0903136-1871	1952
B-14	YS06-GW07-0309	0903136-20	0903136-2071	2049
B-15	YS06-GW05B-0309	0903136-21	0903136-2171	2117
16	YS06-GW01A-0309MS	9040104-MS1	9040104-MS17	2145
17	YS06-GW01A-0309MSD	9040104-MSD1	9040104-MSD1	2214
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COMMENTS: Chloromethane 0.13J
Vinyl chloride 0.12J
Carbon tet 0.12J

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKHV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Lab File ID: 9033102-BLK171 Lab Sample ID: 9033102-BLK1

Date Analyzed: 03/31/09 Time Analyzed: 1147

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VHVLCS	9033102-BS1	9033102-BS17	1223
02	VHVLCSD	9033102-BSD1	9033102-BSD1	1251
03	YS06-TB01-032309	0903136-06	0903136-0671	1858
04	YS06-GW01A-0309	0903136-01	0903136-0171	1927
05	YS06-GW01-0309	0903136-02	0903136-0271	1955
06	YS06-GW01P-0309	0903136-03	0903136-0371	2023
07	YS06-EB01-032309	0903136-04	0903136-0471	2051
08	YS06-EB02-032309	0903136-05	0903136-0571	2120
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COMMENTS: Chloromethane 0.16J ug/L (0.50)
1,2,4-trichlorobenzene 0.15J (0.50)

FORM IV VOA

DataQual **VOA**

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW01-0309
Duplicate Sample ID: YS06-GW01P-0309

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
vinyl chloride	4.1	3.9	5
chloroethane *	0.16		200
1,1-dichloroethene	5.3	6.1	14
trans-1,2-dichloroethene	3.3	3.6	9
1,1-dichloroethane	1.8	2	11
cis-1,2-dichloroethene	18	21	15
trichloroethene	13	14	7
1,2-dichloroethene (total)	21	24	13
			#DIV/0!
			#DIV/0!
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			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: No qualifications required.

* result below the CRQL

Initial Calibration Date: 3/28/2009

RRF and %RSD Calculations:

Compound Name: chloromethane

Lab Value: 0.325

Area of Compound	830175
Area of Internal STD	510420
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.325

Compound Name: 4-methyl-2-pentanone

Lab Value: 8.34

RRF of STD 1	0.1549
RRF of STD 2	0.1775
RRF of STD 3	0.1925
RRF of STD 4	0.1895
RRF of STD 5	0.1757
Calculated % RSD	8.34

Continuing Calibration File ID: 4/2/2009

RRF and %D Calculations:

Compound Name: carbon disulfide

Lab Value: 1.097

Area of Compound	548215
Area of Internal STD	499700
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.097

Compound Name: benzene

Lab Value: 4.7

Average RRF	1.007
Calibration Check RRF	1.054
Calculated % D	-4.7

SAMPLE CALCULATION

Sample ID: YS06-EB01-032509
Standard ID: 4/1/2009
Compound: chloromethane
Concnetration: 0.29 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	7820		
Area of Internal STD	499408		
Conc. of Internal (ng)	125	250	
RRF of Compound	0.27044		
Dilution Factor	1	1	
Weight of Sample	NA		
Volume of Sample	25	NA	
% Moisture	NA	0.83	
Aliquot of sample	NA	NA	
Concentration	0.29	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	10.119	4.483	0.443
Standard	10.124	4.478	0.442

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
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Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
REVISED
SDG # 0903136
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS06-GW01A-0309, YS06-GW01-0309, YS06-GW01P-0309, YS06-EB01-032309, YS06-EB02-032309, YS06-TB01-032309, YS06-GW02-0309, YS06-EB01-032409, YS06-EB02-032409, YS06-GW11-0309, YS06-GW10-0309, YS06-GW10A-0309, YS06-TB01-032409, YS06-EB01-032509, YS06-EB02-032509, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309, YS06-TB01-032509, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309 AND YS06-EB01-032609

The 23 aqueous samples listed above were received intact, refrigerated between 0.1°C and 1.3°C, with proper documentation, in sealed shipping containers, on March 24, 25, 26 and 27, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903136 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in sixteen/23 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9C28002-CAL171, 9C28002-CAL271 and 9C28002-CAL471, process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. YS06-GW01A-0309 was used as the original to prepare the duplicate matrix spikes as requested. The associated duplicate matrix spikes met most of the advisory accuracy and precision criteria.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 6, 2009

DataQual ES

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "DataQual" <dataqual@charter.net>
Cc: <Rebekha.Shaw@CH2M.com>; "Jacqueline Cleveland" <cleve137@charter.net>
Sent: Monday, June 01, 2009 1:57 PM
Attach: 0903184 VOC REVISED NARRATIVE.pdf; 0903136 VOC REVISED NARRATIVE.pdf
Subject: RE: cooler temp question

Hi Laura,

You are correct, the temperatures on the two Voc case narratives are not correct. From what I can tell, the reviewer must have accidently left the temps in from the previous case narrative she did in the template.

I asked her to please revise them. The revised case narratives are attached.

I apologize for the oversight.

Have a great day!

Cathy

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: DataQual [mailto:dataqual@charter.net]
Sent: Monday, June 01, 2009 10:59 AM
To: Cathy Dover
Cc: Rebekha.Shaw@CH2M.com; Jacqueline Cleveland
Subject: cooler temp question

Dear Cathy,

According to the case narrative for SDG#0903184 the coolers were received at 0.1-5.2 degrees C; however according to the COC the coolers were received at 0.4 and 0.7--could you please check that I am not missing something in the data package and if the COC is correct please change the case narrative. I have the same question with the case narrative for SDG#0903136, it lists temps at 0.1-0.8 and the COC lists the samples at 0.1-1.3C. Possibly I am not understanding the wording on the case narrative or is this also incorrect?

Thank you,
Laura

This SDG contains dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/23-3/26
Received Date: 3/24-3/27
Prep. Dates: no prep – dissolved; 4/1-4/2 ICP total; 4/1 Hg total, 3/30 Hg dissolved
Analysis Dates: 4/9, 4/10 dissolved ICP, 4/10&4/15 total ICP; 4/2 Hg total, 3/31 Hg dissolved

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW1 – total metals	beryllium	0.542B ug/L	2.71 ug/L	B	BL
PBW2 – total metals	antimony	2.662B ug/L	13.3 ug/L	B	BL
	chromium	1.253B ug/L	6.265 ug/L	B	BL
	copper	0.969B ug/L	4.845 ug/L	B	BL
	nickel	0.847B ug/L	4.235 ug/L	B	BL
	vanadium	0.669B ug/L	3.345 ug/L	B	BL
	beryllium	-0.672B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-1.953B	≤ 10X MDL (16 ug/L)	L/UL	BL
ICB/CCB Run #2	antimony	3.3B ug/L	16.5 ug/L	B	BL
	chromium	2.0B ug/L	10 ug/L	B	BL
	copper	1.9B ug/L	9.5 ug/L	B	BL
	nickel	0.9B ug/L	4.5 ug/L	B	BL
	vanadium	0.9B ug/L	4.5 ug/L	B	BL
	beryllium	-0.9B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
	cobalt	-2.0B	≤ 10X MDL (16 ug/L)	L/UL	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS06-GW10-0309	beryllium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	beryllium	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	chromium	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	cobalt	L/UL	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09A-0309	copper	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01A-0309, YS06-GW03-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	lead	-2.018B ug/L	≤ 10X MDL (14 ug/L)	L/UL	BL
	copper	-1.433B ug/L	≤ 10X MDL (8 ug/L)	L/UL	BL
	beryllium	0.647B ug/L	3.235 ug/L	B	BL
ICB/CCB – dissolved metals	nickel	1.0B ug/L	5.0 ug/L	B	BL
	selenium	2.3B ug/L	11.5 ug/L	B	BL
	vanadium	0.7B ug/L	3.5 ug/L	B	BL
	thallium	4.4B ug/L	22 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	lead	L/UL	BL
all dissolved metals field samples	copper	L/UL	BL
YS06-GW01-0309, YS06-GW11-0309	beryllium	B	BL
YS06-GW02-0309, YS06-GW03-0309, YS06-GW10A-0309, YS06-GW11-0309, YS06-GW05B-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	nickel	B	BL
YS06-GW01-0309, YS06-GW01A-0309, YS06-GW01P-0309, YS06-GW03-0309, YS06-GW10-0309	selenium	B	BL
YS06-GW05BP-0309, YS06-GW07-0309, YS06-GW09-0309, YS06-GW09A-0309	vanadium	B	BL
YS06-GW07-0309	thallium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The matrix spike of sample YS06-GW01A-0309 analyzed for total metals exhibited -compliant recovery for all analytes. No qualifications were required. The matrix duplicate RPDs were acceptable. The submitted LCS samples were acceptable.

The matrix spike of sample YS06-GW01A-0309 analyzed for the ICP dissolved metals exhibited non-compliant recoveries for several analytes. Samples are flagged L/UL for As, Ba, Be, Pb, Ag, Tl & V. Samples are flagged L/R for Se. All matrix duplicate results were acceptable. The submitted LCS samples were acceptable.
The MS/MSD pair analyzed for ammonia was acceptable.

SERIAL DILUTIONS

The serial dilution analyses of samples YS06-GW01A-0309 for total metals exhibited acceptable %Ds for all analytes.

The serial dilution analyses of samples YS06-GW01A-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (21.8%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Total Metals

Sample ID: YS06-GW01-0309 Duplicate Sample ID: YS06-GW01P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	72600	74400	2%
iron	23500	21600	8%
magnesium	7690	7580	1%
manganese	583	566	3%
sodium	9430	9310	1%

Comments: No qualifications were required.

Sample ID: YS06-GW05B-0309 Duplicate Sample ID: YS06-GW05BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1770	1690	5%
antimony	11.4	10	13%
calcium	114000	115000	1%
iron	3890	3540	9%
lead	3.9	4.6	16%
manganese	41	38.9	5%
sodium	8920	8850	1%

Comments: No qualifications were required.

Dissolved Metals

Sample ID: YS06-GW01-0309 Duplicate Sample ID: YS06-GW01P-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
arsenic	13.3	12.4	7%
calcium	69200	69300	0%
iron	19900	19000	5%
magnesium	7980	7750	3%
manganese	551	533	3%
sodium	9400	9370	0%

Comments: No qualifications were required.

Sample ID: YS06-GW05B-0309 Duplicate Sample ID: YS06-GW05BP-0309

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	112000	112000	0%
sodium	8290	8160	2%

Comments: No qualifications were required.

SAMPLE CALCULATION

Dissolved Metals
EPA SAMPLE ID: YS06-GW01-0409
COMPOUND: calcium
CONCENTRATION: 72600 ug/L
%Solids – na
50 ml
Raw Data result: 72601.71 ug/L
72601.71 ug/L * 0.05L/0.05L = 72601.71 ug/L

Total Metals
EPA SAMPLE ID: YS06-GW05B-0309
COMPOUND: arsenic
CONCENTRATION: 4.0B ug/L
%Solids – na
50 ml
Raw Data result: 4.003237 ug/L
4.003237 ug/L * 0.05L/0.05L = 4.003237 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer JCleveland **Date:** 6/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903136

The indicated Sample Delivery Group (SDG) consisting of twenty (20) water samples was received into the laboratory information management system (LIMS) on March 24, 25, 26, and 27, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.3°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903136-01 ID YS06-GW01A-0309S and YS06-GW01A-0309SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903136-01 ID YS06-GW01A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903136-01 ID YS06-GW01A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
April 16, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER Hg & ICP Run #1

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	U	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	0.4	U	0.4	U	0.542	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-211.9	B	-211.0	B	-189.1	B	-185.5	B	-205.339	B	P
Chromium	-0.7	B	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	-1.8	B	1.600	U	P
Copper	0.8	U	0.8	U	0.8	U	0.8	U	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	31.0	U	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	1 0.100	U	2 0.100	U	3 0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	17.8	B	9.9	U	14.076	B	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

PBW - all but GW01A assoc

GW01 GW02

GW01P 11

10A

10

Flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U							P
Antimony			2.4	U							P
Arsenic			2.2	U							P
Barium			0.3	U							P
Beryllium			0.5	B	see PBW						P
Cadmium			0.6	U							P
Calcium			198.3	B	NQ						P
Chromium			0.7	U							P
Cobalt			-1.9	B	NQ						P
Copper			0.8	U							P
Iron			24.6	U							P
Lead			1.4	U							P
Magnesium			31.0	U	(5)		(6)				P
Manganese			0.4	U							P
Mercury			(4) -0.120	B	NQ	0.100	U	0.100	U		CV
Nickel			0.7	U							P
Potassium			15.2	B	NQ						P
Selenium			2.2	U							P
Silver			0.6	U							P
Sodium			159.5	U							P
Thallium			4.2	B	NQ						P
Vanadium			0.6	U							P
Zinc			5.2	U							P

Hg GW01A GW02
GW01 GW11
GW01P GW10
GW0 GW10A

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 7	C	2 8	C	3	C	Preparation Blank	C	M
Mercury			0.147	B	NO 0.100	U					CV

GW02
GW11
GW10
GW10A

GW03
GW09
GW09A
GW07
GW05B
GW05BP

only 1 out of 5 assoc showed neg cont.

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903136

Preparation Blank Matrix (soil/water): WATER ICP Run #2

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank PBW2	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	4.5	B	2.4	U	3.3	B	2.4	U	2.662	B	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.4	B	0.3	B	0.300	U	P
Beryllium	0.4	U	0.4	U	-0.9	B	-1.9	B	-0.672	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-200.3	B	-167.5	B	-148.5	B	-171.4	B	-209.976	B	P
Chromium	1.5	B	2.0	B	2.0	B	1.7	B	1.253	B	P
Cobalt	1.6	U	1.6	U	-2.0	B	-1.7	B	-1.953	B	P
Copper	1.0	B	1.1	B	1.9	B	2.3	B	0.969	B	P
Iron	24.8	B	34.9	B	42.0	B	36.4	B	24.600	U	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	47.2	B	63.8	B	40.8	B	31.000	U	P
Manganese	0.4	U	0.4	B	0.4	B	0.4	B	0.370	U	P
Nickel	1.0	B	0.7	B	0.9	B	0.8	B	0.847	B	P
Potassium	9.9	U	10.2	B	13.4	B	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	4.5	B	3.3	U	3.7	B	3.300	U	P
Vanadium	0.7	B	1.0	B	0.9	B	0.8	B	0.669	B	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

GW01A only

GW03
GW09
GW09A
GW07
GW05B
GW05BP
GW01A

Jacqueline Cleveland

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "Jacqueline Cleveland" <cleve137@charter.net>
Cc: <Rebekha.Shaw@CH2M.com>
Sent: Monday, June 15, 2009 12:20 PM
Attach: 0903136 MTL MISSING FORM1.pdf
Subject: RE: CH2M HILL CTO-166

Hey Jackie,

I have attached the missing metals form 1 for YS06-EB01-032609.

Sorry for the omission!

Have a great day!

Cathy

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: Jacqueline Cleveland [mailto:cleve137@charter.net]
Sent: Monday, June 15, 2009 1:00 PM
To: Cathy Dover
Subject: Re: CH2M HILL CTO-166

Thanks so much Cathy, I appreciate you getting back to me so quickly!

Jackie

> ----- Original Message -----
> **From:** Cathy Dover
> **To:** Jacqueline Cleveland
> **Sent:** Monday, June 15, 2009 11:45 AM
> **Subject:** RE: CH2M HILL CTO-166
>
> Hey Jackie,
>
> I was calling you to find out if it was a metals or VOC form 1, but received your e-mail right after I dialed your #.
>
> The reviewer will get me the form 1 ASAP.
>
> Cathy
>
> Cathy Dover
> Supervisor of Project Management
> Compuchem

501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: Jacqueline Cleveland [mailto:cleve137@charter.net]
Sent: Monday, June 15, 2009 12:40 PM
To: Cathy Dover
Subject: CH2M HILL CTO-166

Hi Cathy,

I just left you a voice mail about 1 missing sample form 1 in SDG 0903136. I don't have a form 1 for sample YS06-EB01-032609 (lab ID 0903136-23) for the total metals package. If you could e-mail this form 1 to me that would be great. It is in the EDD. It just looks like it got missed when the package was copied or something like that! I am trying to send these reports out today so as soon as possible would be greatly appreciated:)
Thanks.
Jackie

Jacqueline Cleveland

Vice-President

DQES, LLC

636-352-9391

cleve137@charter.net

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903137

The indicated Sample Delivery Group (SDG) consisting of twenty (20) dissolved water samples was received into the laboratory information management system (LIMS) on March 24, 25, 26, and 27, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.1 to 1.3°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0903137-01 ID YS03-GW01A-0309S and YS03-GW01A-0309SD were inside control limits for the requested analytes except arsenic, lead, selenium, silver, and thallium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0903137-01 ID YS03-GW01A-0309D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0903137-01 ID YS03-GW01A-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forster for Susan Bass

Susan W. Bass
Senior Chemist
April 14, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	B	2.4	U	2.4	U	2.4	U	2.400	U	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	1.3	B	1.0	B	0.647	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-219.7	B	-179.8	B	-201.5	B	-193.5	B	-223.648	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.700	U	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	1.600	U	P
Copper	-0.9	B	0.8	U	-1.4	B	-1.6	B	-1.433	B	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	-1.4	B	1.4	U	-2.018	B	P
Magnesium	31.0	U	33.8	B	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	0.100	U	0.100	U	0.100	U	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

NQ

see peak

NQ

NQ

non-detect.

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (4)	C	2 (5)	C	3 (6)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.6	B	2.4	U	2.4	U			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.9	B	1.0	B	0.5	B	See PBlk		P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-186.6	B	-209.4	B	-219.1	B	NQ		P
Chromium			0.7	U	0.7	U	0.7	U			P
Cobalt			1.6	U	1.6	U	1.6	U			P
Copper			-1.4	B	-1.4	B	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	-1.6	B	-1.8	B	See PBlk		P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Mercury			0.100	U	0.100	U					CV
Nickel			1.1	B	0.7	U	0.7	U			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.2	U	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			5.2	B	3.3	B	3.3	U			P
Vanadium			0.6	B	0.6	U	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

Non-assoc

GW01A
GW01
GW01P

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1 (7)	C	2 (8)	C	3 (9)	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.1	B	3.7	B	2.5	B			P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-220.8	B	-216.2	B	-214.6	B			P
Chromium			0.7	U	1.3	B	1.0	B			P
Cobalt			1.6	U	-1.9	B	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Nickel			0.7	U	0.7	B	1.0	B			P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.3	B	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	3.3	U	4.4	B			P
Vanadium			0.6	U	0.7	B	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

NQ

NQ

NQ

No Quals

NQ

NQ

GW01A
GW01
GW01P

GW02
GW11
GW10
GW10A
GW03

GW09
GW09A
GW07
GW05B
GW05BP

✓ flag as noted in report

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-GW01A-0309S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Aluminum	75 - 125	1993.8200		379.1539		2000.00	80.7		P	
Antimony	75 - 125	494.7618		97.6272		500.00	79.4		P	NQ +/-1
Arsenic	75 - 125	41.8334		20.3373		40.00	53.7	N	P	J/UJ
Barium	75 - 125	1956.0760		387.1295		2000.00	78.4		P	
Beryllium	75 - 125	48.1145		9.0778		50.00	78.1		P	
Cadmium	75 - 125	48.5960		8.4612		50.00	80.3		P	
Chromium	75 - 125	192.8391		17.9528		200.00	87.4		P	
Cobalt	75 - 125	484.7636		88.8884		500.00	79.2		P	NQ +/-1%
Copper	75 - 125	252.6558		48.9937		250.00	81.5		P	
Iron	75 - 125	1305.4580		381.9856		1000.00	92.3		P	
Lead	75 - 125	19.2616		5.5113		20.00	68.8	N	P	J/UJ
Manganese	75 - 125	504.4893		49.4565		500.00	91.0		P	
Mercury	75 - 125	0.8190		0.1000	U	1.00	81.9		CV	
Nickel	75 - 125	489.5557		74.5112		500.00	83.0		P	
Selenium	75 - 125	10.7179		9.7745		10.00	9.4	N	P	J/R
Silver	75 - 125	44.7540		15.7158		50.00	58.1	N	P	J/UJ
Thallium	75 - 125	55.0781		21.8901		50.00	66.4	N	P	
Vanadium	75 - 125	479.8361		90.8096		500.00	77.8		P	
Zinc	75 - 125	497.5511		41.6948		500.00	91.2		P	

using QAPP 80-120 limit

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-GW01A-0309SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Aluminum	75 - 125	1982.0050		379.1539		2000.00	80.1		P	
Antimony	75 - 125	496.4791		97.6272		500.00	79.8		P	NQ +/- 1
Arsenic	75 - 125	41.2356		20.3373		40.00	52.2	N	P	J/UJ
Barium	75 - 125	1952.5970		387.1295		2000.00	78.3		P	
Beryllium	75 - 125	47.9340		9.0778		50.00	77.7		P	
Cadmium	75 - 125	48.8757		8.4612		50.00	80.8		P	
Chromium	75 - 125	192.7098		17.9528		200.00	87.4		P	
Cobalt	75 - 125	487.4893		88.8884		500.00	79.7		P	NQ +/- 1
Copper	75 - 125	253.7148		48.9937		250.00	81.9		P	
Iron	75 - 125	1304.2790		381.9856		1000.00	92.2		P	
Lead	75 - 125	18.3065		5.5113		20.00	64.0	N	P	J/UJ
Manganese	75 - 125	507.9515		49.4565		500.00	91.7		P	
Mercury	75 - 125	0.8090		0.1000	U	1.00	80.9		CV	
Nickel	75 - 125	487.3977		74.5112		500.00	82.6		P	
Selenium	75 - 125	9.9584		9.7745		10.00	1.8	N	P	J/R
Silver	75 - 125	44.8680		15.7158		50.00	58.3	N	P	J/UJ
Thallium	75 - 125	52.9896		21.8901		50.00	62.2	N	P	
Vanadium	75 - 125	478.5461		90.8096		500.00	77.5		P	
Zinc	75 - 125	499.8035		41.6948		500.00	91.6		P	

using QAPP 80-120 limit

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS06-GW01A-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903137

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	379.15		358.92	B	5.3		P
Antimony	97.63		161.97		65.9		P
Arsenic	20.34		20.41	B	0.3		P
Barium	387.13		393.72	B	1.7		P
Beryllium	9.08		10.39	B	14.4		P
Cadmium	8.46		7.20	B	14.9		P
Calcium	69604.50		68114.45		2.1		P
Chromium	17.95		20.19	B	12.5		P
Cobalt	88.89		86.40		2.8		P
Copper	48.99		44.09		10.0		P
Iron	381.99		519.89		36.1		P
Lead	5.51		7.00	U	100.0		P
Magnesium	3688.52	B	3579.54	B	3.0		P
Manganese	49.46		50.48		2.1		P
Mercury	0.10	U	0.50	U			CV
Nickel	74.51		74.59	B	0.1		P
Potassium	4431.76	B	3466.11	B	21.8	E	P
Selenium	9.77		12.14	B	24.3		P
Silver	15.72		19.38	B	23.3		P
Sodium	17154.07		16438.38	B	4.2		P
Thallium	21.89		22.34	B	2.1		P
Vanadium	90.81		92.62	B	2.0		P
Zinc	41.69		48.93	B	17.4		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 0903184 & 0903186, CompuChem
NWS Yorktown CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0903184 & 0903186. The data validation was performed in accordance with the SW-846 8260B for volatiles and SW-846 Method 6010B for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. The laboratory ID noted in the table below is the VOA and total metal ID.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS03-GW24-0309	0903184-01	water	X	X	X
YS03-GW29-0309	0903184-02	water	X	X	X
YS03-FB01-033009	0903184-03	water	X	X	X
YS03-EB01-033009	0903184-04	water	X	X	X
YS03-TB01-033009	0903184-05	water	X		
YS03-GW19A-0409	0903184-06	water	X	X	X
YS25-EB01-040609	0903184-07	water	X	X	
YS03-FB01-040609	0903184-08	water	X	X	
YS03-TB01-040609	0903184-09	water	X		

The following quality control samples were provided with this SDG: sample YS03-TB01-033009 and YS03-TB01-040609-trip blanks; samples YS03-EB01-033009 and YS25-EB01-040609-equipment blanks; and samples YS03-FB01-033009 and YS03-FB01-040609-field blanks.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *

• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	*
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	NA
• Matrix Duplicate RPDs	NA
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	NA
• Identification/Quantitation	*
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total and Dissolved Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The serial dilution analysis exhibited non-compliant %Ds in the dissolved analyses for the analyte potassium. All reported results for potassium were qualified as estimated J/UJ in the associated field samples.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were required for the VOA fraction. The case narrative that was submitted with the data package had the incorrect cooler temperatures listed. The laboratory was contacted and a corrected case narrative was submitted.

Technical Holding Times

According to chain of custody records, sampling was performed on 03/30/09 & 04/06/09 and samples were received at the laboratory 03/31/09 & 04/07/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 03/28/09	acetone	0.0405	YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	L/R	ICL
CC 04/03/09	acetone	0.0407	YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	L/R	CCL
IC 04/10/09	2-butanone	0.0315	YS03-GW24-0309	L/R	ICL
CC 04/13/09	acetone 2-butanone	0.0249 0.0336	YS03-GW24-0309	L/R	CCL
IC 04/15/09	2-butanone	0.0367	YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	L/R	ICL
CC 04/16/09	2-butanone	0.0348	YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	L/R	CCL
	acetone	21.70		J	CCH

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDS	acetone	1.4J ug/L	2.5 ug/L	14 ug/L
VBLKIE	chloromethane	0.14J ug/L	0.5 ug/L	0.7 ug/L
	methylene chloride	0.25J	0.5	2.5
VBLKDS	acetone	1.4J ug/L	2.5 ug/L	14 ug/L

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS03-TB01-040609	methylene chloride	0.2J ug/L	0.5 ug/L	2 ug/L
	toluene	0.59	0.5	3
YS03-TB01-033009	chloromethane	0.17J	0.5	0.85
	acetone	2.8	2.5	28
	methylene chloride	0.19J	0.5	1.9
	toluene	0.48J	0.5	2.4
YS25-EB01-040609	acetone	8.1	2.5	81
	methylene chloride	0.76	0.5	7.6
	chloroform	0.4J	0.5	2
	toluene	0.16J	0.5	0.8
YS03-EB01-033009	chloromethane	0.22	0.5	1.1
	acetone	17	2.5	170
	methylene chloride	3	0.5	30
	2-butanone	2.7	2.5	27
	chloroform	0.2J	0.5	1
	toluene	0.36J	0.5	1.8
YS03-FB01-040609	acetone	22	2.5	220
	methylene chloride	0.86	0.5	8.6
	chloroform	0.47J	0.5	2.4
	toluene	0.18J	0.5	0.9
YS03-FB01-033109	chloromethane	0.17J	0.5	0.85
	acetone	9	2.5	90
	methylene chloride	1.3	0.5	13
	2-butanone	8.2	2.5	82
	chloroform	0.94	0.5	4.7
	toluene	1.6	0.5	8

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW19A-0409, YS03-GW24-0309, YS03-GW29-0309	acetone	B	BL
YS03-GW29-0309	methylene chloride	B	BL
YS03-GW29-0309	chloromethane	B	BL
YS03-GW29-0309	2-butanone	B	BL
YS03-GW29-0309	chloroform	B	BL
YS03-GW29-0309, YS03-GW19A-0409	toluene	B	BL

Total and Dissolved Metals

Preparation, laboratory and field QC blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Note: The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	8.306B ug/L	41.53 ug/L	B	BL
YS03-FB01-033009	vanadium	0.69B ug/L	3.45 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
YS03-GW29-0309	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	chromium	1.527B ug/L	7.635 ug/L	B	BL
	copper	2.274B ug/L	11.37 ug/L	B	BL
	iron	37.885B ug/L	200.78 ug/L	B	BL
	vanadium	0.667B ug/L	3.335 ug/L	B	BL
	aluminum	-64.036B ug/L	≤ 10X MDL (534 ug/L)	L/UL	BL
	beryllium	-2.189B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
ICB	nickel	1.0B ug/L	5 ug/L	B	BL
	mercury	-0.103B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
YS03-EB01-033009	zinc	6.3B ug/L	31.5 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	chromium	B	BL
all dissolved metals field samples	copper	B	BL
YS03-GW24-0309, YS03-GW29-0309	iron	B	BL
YS03-GW24-0309, YS03-GW29-0309	vanadium	B	BL
YS03-GW24-0309, YS03-GW29-0309	aluminum	L/UL	BL
all dissolved metals field samples	beryllium	L/UL	BL
YS03-GW19A-0409, YS03-GW29-0309	nickel	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS03-GW24-0309	zinc	B	BL

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited a non-compliant %D for the analyte potassium in the dissolved metals analysis. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS03-GW24-0309	potassium	all dissolved metals field samples	20.5	J/UJ	SD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

Reporting Limits

Total and Dissolved Metals

The following analytes did not meet all of the QAPP established method detection limits (MDLs) as noted on page 95 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. No validation action was required. Reporting limits (QAPP QLs) were met.

Total & Dissolved Metals (Instrument P4)

Analyte	QAPP MDL (ug/L)	Lab MDL (ug/L)
cadmium	0.36	0.6
calcium	4.29	76.1
cobalt	1.01	1.6
mercury	0.07	0.1
zinc	2.14	5.2

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	acetone	+/-	L/R	ICL
YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009	acetone*	+/-	L/R	CCL
YS03-GW24-0309	2-butanone	+/-	L/R	ICL
YS03-GW24-0309	acetone 2-butanone*	+/-	L/R	CCL
YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	2-butanone	+/-	L/R	ICL
YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	2-butanone*	+/-	L/R	CCL
YS25-EB01-040609, YS03-FB01-040609, YS03-TB01-040609, YS03-GW19A-0409	acetone	+	J	CCH
YS03-GW19A-0409, YS03-GW24-0309, YS03-GW29-0309	acetone	+	B	BL
YS03-GW29-0309	methylene chloride	+	B	BL
YS03-GW29-0309	chloromethane	+	B	BL
YS03-GW29-0309	2-butanone	+	B	BL
YS03-GW29-0309	chloroform	+	B	BL
YS03-GW29-0309, YS03-GW19A-0409	toluene	+	B	BL

**qualified due to non-compliant initial calibration results*

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all total metals field samples	antimony	+ up to action level	B	BL
YS03-GW29-0309	vanadium	+ up to action level	B	BL
all samples	all analytes	+B	J	

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all dissolved metals field samples	chromium	+ up to action level	B	BL
all dissolved metals field samples	copper	+ up to action level	B	BL
YS03-GW24-0309, YS03-GW29-0309	iron	+ up to action level	B	BL
YS03-GW24-0309, YS03-GW29-0309	vanadium	+ up to action level	B	BL
YS03-GW24-0309, YS03-GW29-0309	aluminum	+/- up to action level	L/UL	BL
all dissolved metals field samples	beryllium	+/- up to action level	L/UL	BL
YS03-GW19A-0409, YS03-GW29-0309	nickel	+ up to action level	B	BL
all dissolved metals field samples	mercury	+/- up to action level	L/UL	BL
YS03-GW24-0309	zinc	+ up to action level	B	BL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW24-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-01D391
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/13/09
Dilution Factor: 71.4

Soil Extract Volume: _____(uL)
Method Blank: 9041307-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	7.1	36	ND	U
74-87-3	Chloromethane	7.1	36	ND	U
75-01-4	Vinyl Chloride	7.1	36	1200	
74-83-9	Bromomethane	34	36	ND	U
75-00-3	Chloroethane	9.3	36	ND	U
75-69-4	Trichlorofluoromethane	7.1	36	ND	U
75-35-4	1,1-Dichloroethene	7.1	36	12	J
75-15-0	Carbon disulfide	7.1	36	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	11	36	ND	U
67-64-1	Acetone	82	180	96	~~J~~ B BL
79-20-9	Methyl acetate	7.1	36	ND	U
75-09-2	Methylene Chloride	7.1	36	ND	U
156-60-5	trans-1,2-Dichloroethene	7.1	36	8.8	J
1634-04-4	Methyl-tert-butyl ether	7.1	36	ND	U
75-34-3	1,1-Dichloroethane	7.1	36	8.2	J
156-59-2	cis-1,2-Dichloroethene	7.1	36	1400	
78-93-3	2-butanone	36	180	ND	~~U~~ R ICL
67-66-3	Chloroform	7.1	36	ND	U
71-55-6	1,1,1-Trichloroethane	7.1	36	ND	U
56-23-5	Carbon Tetrachloride	7.1	36	ND	U
71-43-2	Benzene	7.1	36	ND	U
107-06-2	1,2-Dichloroethane	7.1	36	ND	U
79-01-6	Trichloroethene	7.1	36	400	
78-87-5	1,2-Dichloropropane	7.1	36	ND	U
75-27-4	Bromodichloromethane	7.1	36	ND	U
10061-01-5	cis-1,3-Dichloropropene	7.1	36	ND	U
108-10-1	4-Methyl-2-pentanone	36	180	ND	U
108-88-3	Toluene	7.1	36	ND	U
10061-02-6	trans-1,3-Dichloropropene	7.1	36	ND	U
79-00-5	1,1,2-Trichloroethane	7.1	36	ND	U
127-18-4	Tetrachloroethene	7.9	36	ND	U
591-78-6	2-hexanone	36	180	ND	U
124-48-1	Dibromochloromethane	7.1	36	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 053109

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW24-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-01
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-01D391
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/13/09
Dilution Factor: 71.4

Soil Extract Volume: _____(uL)
Method Blank: 9041307-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	7.1	36	ND	U
108-90-7	Chlorobenzene	7.1	36	ND	U
100-41-4	Ethylbenzene	7.1	36	ND	U
108-38-3	m,p-Xylene	14	71	ND	U
95-47-6	o-Xylene	7.1	36	ND	U
100-42-5	Styrene	7.1	36	ND	U
75-25-2	Bromoform	11	36	ND	U
98-82-8	Isopropyl Benzene	7.1	36	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	8.6	36	ND	U
541-73-1	1,3-Dichlorobenzene	7.1	36	ND	U
106-46-7	1,4-Dichlorobenzene	7.1	36	ND	U
95-50-1	1,2-Dichlorobenzene	7.1	36	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	13	36	ND	U
120-82-1	1,2,4-Trichlorobenzene	9.3	36	ND	U
540-59-0	1,2-Dichloroethene (total)	7.1	36	1400	
1330-20-7	Xylene (total)	7.1	36	ND	U
110-82-7	Cyclohexane	7.1	36	ND	U
108-87-2	Methylcyclohexane	7.1	36	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 053109

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW29-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.27	~~UB~~ B, BL
75-01-4	Vinyl Chloride	0.10	0.5	0.24	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	0.27	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	25	~~B~~ B BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.27	~~UB~~ B, BL
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	0.29	J
78-93-3	2-butanone	0.50	2.5	2.1	~~J~~ B BL
67-66-3	Chloroform	0.10	0.5	0.11	~~J~~ B BL
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	0.24	J
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.44	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WW 053109

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW29-0309

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-02
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0271
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.59	
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	0.29	J
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WS 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	J~~B~~
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	9	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	1.3	~~B~~
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	8.2	
67-66-3	Chloroform	0.10	0.5	0.94	
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	1.6	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-03
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0371
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05310

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-EB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.22	J~~B~~
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	17	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	3	~~B~~
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	2.7	
67-66-3	Chloroform	0.10	0.5	0.2	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.36	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

VM 033107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-EB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-04
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0471
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 05/21/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9040308-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	0.17	J~~B~~
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	2.8	~~B~~ L ICL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.19	J~~B~~
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	U
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.48	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

WM 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-033009

Lab Project Number:
Method: 8260B
Date Collected: 03/30/09

Lab Sample ID: 0903184-05
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 03/31/09
Lab File ID: 0903184-0571
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/03/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)

Soil Aliquot Volume: _____(uL)

Method Blank: 9040308-BLK1

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

05310?

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW19A-0409

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-06R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	0.26	J
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	0.13	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	3.3	~~B~~ B, BL
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	ND	U
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	6.5	
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	3.1	
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.32	~~J~~ B BL
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 053107

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-GW19A-0409

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-06
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-06R91
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	0.19	J
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	6.4	
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WW 053101

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS25-EB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0791
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	8.1	~~B~~ J CCH
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.76	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	0.4	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.16	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

05/04

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS25-EB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-07
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0791
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

WM 05/07

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	22	~~UJ~~ CCH
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.86	
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~UR~~ ICL
67-66-3	Chloroform	0.10	0.5	0.47	J
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.18	J
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05/6/09

1AWC

VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-FB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-08
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0891
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05/10/09

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0991
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
75-71-8	Dichlorodifluoromethane	0.10	0.5	ND	U
74-87-3	Chloromethane	0.10	0.5	ND	U
75-01-4	Vinyl Chloride	0.10	0.5	ND	U
74-83-9	Bromomethane	0.47	0.5	ND	U
75-00-3	Chloroethane	0.13	0.5	ND	U
75-69-4	Trichlorofluoromethane	0.10	0.5	ND	U
75-35-4	1,1-Dichloroethene	0.10	0.5	ND	U
75-15-0	Carbon disulfide	0.10	0.5	ND	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.15	0.5	ND	U
67-64-1	Acetone	1.2	2.5	ND	U
79-20-9	Methyl acetate	0.10	0.5	ND	U
75-09-2	Methylene Chloride	0.10	0.5	0.2	J
156-60-5	trans-1,2-Dichloroethene	0.10	0.5	ND	U
1634-04-4	Methyl-tert-butyl ether	0.10	0.5	ND	U
75-34-3	1,1-Dichloroethane	0.10	0.5	ND	U
156-59-2	cis-1,2-Dichloroethene	0.10	0.5	ND	U
78-93-3	2-butanone	0.50	2.5	ND	~~U~~ R ICL
67-66-3	Chloroform	0.10	0.5	ND	U
71-55-6	1,1,1-Trichloroethane	0.10	0.5	ND	U
56-23-5	Carbon Tetrachloride	0.10	0.5	ND	U
71-43-2	Benzene	0.10	0.5	ND	U
107-06-2	1,2-Dichloroethane	0.10	0.5	ND	U
79-01-6	Trichloroethene	0.10	0.5	ND	U
78-87-5	1,2-Dichloropropane	0.10	0.5	ND	U
75-27-4	Bromodichloromethane	0.10	0.5	ND	U
10061-01-5	cis-1,3-Dichloropropene	0.10	0.5	ND	U
108-10-1	4-Methyl-2-pentanone	0.50	2.5	ND	U
108-88-3	Toluene	0.10	0.5	0.59	
10061-02-6	trans-1,3-Dichloropropene	0.10	0.5	ND	U
79-00-5	1,1,2-Trichloroethane	0.10	0.5	ND	U
127-18-4	Tetrachloroethene	0.11	0.5	ND	U
591-78-6	2-hexanone	0.50	2.5	ND	U
124-48-1	Dibromochloromethane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05/10

1AWC
VOLATILE ORGANICS ANALYSIS DATA SHEET

Client Project ID:
Client SDG No: 0903184
Client Sample ID: YS03-TB01-040609

Lab Project Number:
Method: 8260B
Date Collected: 04/06/09

Lab Sample ID: 0903184-09
Sample wt/vol: 25 (g/ml) ML
Level: (low/med) LOW

Date Received: 04/07/09
Lab File ID: 0903184-0991
Analyst: JAO

% Moisture: not dec. _____
GC Column: SPB-624 ID: 0.32 (mm)

Date Analyzed: 04/16/09
Dilution Factor: 1.0

Soil Extract Volume: _____(uL)
Method Blank: 9041603-BLK1

Soil Aliquot Volume: _____(uL)

CAS NO.	COMPOUND	MDL	Reporting Limit UG/L	Results UG/L	Q
106-93-4	1,2-Dibromoethane	0.10	0.5	ND	U
108-90-7	Chlorobenzene	0.10	0.5	ND	U
100-41-4	Ethylbenzene	0.10	0.5	ND	U
108-38-3	m,p-Xylene	0.20	1	ND	U
95-47-6	o-Xylene	0.10	0.5	ND	U
100-42-5	Styrene	0.10	0.5	ND	U
75-25-2	Bromoform	0.15	0.5	ND	U
98-82-8	Isopropyl Benzene	0.10	0.5	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	0.12	0.5	ND	U
541-73-1	1,3-Dichlorobenzene	0.10	0.5	ND	U
106-46-7	1,4-Dichlorobenzene	0.10	0.5	ND	U
95-50-1	1,2-Dichlorobenzene	0.10	0.5	ND	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.18	0.5	ND	U
120-82-1	1,2,4-Trichlorobenzene	0.13	0.5	ND	U
540-59-0	1,2-Dichloroethene (total)	0.10	0.5	ND	U
1330-20-7	Xylene (total)	0.10	0.5	ND	U
110-82-7	Cyclohexane	0.10	0.5	ND	U
108-87-2	Methylcyclohexane	0.10	0.5	ND	U

ND = Not Detected
Q = Qualifier

FORM I VOA

05310

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19A-0409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-06

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19300			P
7440-36-0	Antimony	11.4		B BL	P
7440-38-2	Arsenic	60.7			P
7440-39-3	Barium	101	~~B~~	J	P
7440-41-7	Beryllium	0.69	~~B~~	J	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	201000			P
7440-47-3	Chromium	123			P
7440-48-4	Cobalt	6.2			P
7440-50-8	Copper	25.2			P
7439-89-6	Iron	49600			P
7439-92-1	Lead	17.0			P
7439-95-4	Magnesium	8180			P
7439-96-5	Manganese	1320			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	32.4	~~B~~	J	P
7440-09-7	Potassium	8350			P
7782-49-2	Selenium	3.5	~~B~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	6600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	77.6			P
7440-66-6	Zinc	2780			P

JC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-01

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13000			P
7440-36-0	Antimony	12.1		B BL	P
7440-38-2	Arsenic	32.3			P
7440-39-3	Barium	132	B	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	336000			P
7440-47-3	Chromium	524			P
7440-48-4	Cobalt	10.9			P
7440-50-8	Copper	28.9			P
7439-89-6	Iron	36000			P
7439-92-1	Lead	13.7			P
7439-95-4	Magnesium	11500			P
7439-96-5	Manganese	523			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	250			P
7440-09-7	Potassium	7000			P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	17500			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	62.0			P
7440-66-6	Zinc	64.6			P

JLC 6209

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLOUDY Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-GW29-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-02

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	369			P
7440-36-0	Antimony	8.2	~~B~~	B BL	P
7440-38-2	Arsenic	18.5			P
7440-39-3	Barium	17.6	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	72900			P
7440-47-3	Chromium	40.4			P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	2.0	~~B~~	J	P
7439-89-6	Iron	1310			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2300	~~B~~	J	P
7439-96-5	Manganese	42.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	19.4	~~B~~	J	P
7440-09-7	Potassium	1340	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7180			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	3.2	~~B~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JAC 6/30/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-04

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	7.2	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.81	~~B~~	J	P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	90.5	~~B~~	J	P
7440-47-3	Chromium	6.8	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	180			P
7439-92-1	Lead	1.8	~~B~~	J	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	2.4	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.7	~~B~~	J	P
7440-09-7	Potassium	22.0	~~B~~	J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	506	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

YS03-EB01-040609

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS25-EB01-040609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-07

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	8.1	~~U~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.77	~~U~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.5	~~U~~	J	P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	218	~~U~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-03

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	8.6	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	1.3	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	26.9	~~B~~	J	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.77	~~B~~	J	P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	271	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.69	~~B~~	J	P
7440-66-6	Zinc	5.2	U		P

JLC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-FB01-040609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Matrix (soil/water): WATER Lab Sample ID: 0903184-08

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	7.8	~~B~~	J	P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	0.84	U		P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U		P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	182	~~B~~	J	P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JAC 6/30/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-04

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	1.0	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.5	~~B~~	J	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.76	~~B~~	J	P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	1.4	~~B~~	J	P
7440-09-7	Potassium	13.1	~~B~~	~~E~~ J	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	5.9	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	6.3	~~B~~	J	P

JAC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-FB01-033009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-03

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	U		P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	2.2	U		P
7440-39-3	Barium	0.30	U		P
7440-41-7	Beryllium	0.42	U		P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	76.1	U		P
7440-47-3	Chromium	1.0	~~B~~	J	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.1	~~B~~	J	P
7439-89-6	Iron	24.6	U		P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	31.0	U		P
7439-96-5	Manganese	0.37	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	0.67	U		P
7440-09-7	Potassium	9.9	U	~~B~~	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	160	U		P
7440-28-0	Thallium	4.6	~~B~~	J	P
7440-62-2	Vanadium	0.57	U		P
7440-66-6	Zinc	5.2	U		P

JLC 6/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW19A-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-05

Level (low/med): LOW Date Received: 4/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2040			P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	5.6	~~B~~	J	P
7440-39-3	Barium	35.2	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	77500			P
7440-47-3	Chromium	6.9	~~B~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	4.3	~~B~~	B BL	P
7439-89-6	Iron	1540			P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	1500	~~B~~	J	P
7439-96-5	Manganese	448			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	2.6	~~B~~	B BL	P
7440-09-7	Potassium	2120	~~B~~	EJ SD	P
7782-49-2	Selenium	2.2	U		P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	5730			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	5.7	~~B~~	J	P
7440-66-6	Zinc	112			P

JC 6209

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW24-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-01

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	~~U~~	UL BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	6.4	~~U~~	J	P
7440-39-3	Barium	67.0	~~U~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	217000			P
7440-47-3	Chromium	7.2	~~U~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.7	~~U~~	B BL	P
7439-89-6	Iron	107		B BL	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	8040			P
7439-96-5	Manganese	225			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	15.0	~~U~~	J	P
7440-09-7	Potassium	1720	~~U~~	EJ SD	P
7782-49-2	Selenium	2.9	~~U~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	17600			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	1.0	~~U~~	B BL	P
7440-66-6	Zinc	9.0	~~U~~	B BL	P

JC 6/2009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-GW29-0309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Lab Sample ID: 0903186-02

Level (low/med): LOW Date Received: 3/31/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	~~U~~	UL BL	P
7440-36-0	Antimony	2.4	U		P
7440-38-2	Arsenic	25.8			P
7440-39-3	Barium	17.3	~~B~~	J	P
7440-41-7	Beryllium	0.42	~~U~~	UL BL	P
7440-43-9	Cadmium	0.64	U		P
7440-70-2	Calcium	78300			P
7440-47-3	Chromium	1.9	~~U~~	B BL	P
7440-48-4	Cobalt	1.6	U		P
7440-50-8	Copper	3.7	~~B~~	B BL	P
7439-89-6	Iron	171		B BL	P
7439-92-1	Lead	1.4	U		P
7439-95-4	Magnesium	2380	~~B~~	J	P
7439-96-5	Manganese	40.7			P
7439-97-6	Mercury	0.10	~~U~~	UL BL	CV
7440-02-0	Nickel	2.3	~~U~~	B BL	P
7440-09-7	Potassium	1370	~~B~~	EJ SD	P
7782-49-2	Selenium	4.4	~~B~~	J	P
7440-22-4	Silver	0.62	U		P
7440-23-5	Sodium	7890			P
7440-28-0	Thallium	3.3	U		P
7440-62-2	Vanadium	0.70	~~U~~	B BL	P
7440-66-6	Zinc	5.2	U		P

JC 4/2/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CTO-166
1 cooler

15604

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy, M. Ost	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs SW846	Metals ILM05.3 PL	F Metals ILM05.3 PL	Chloride, Sulfate 300.0 Alkalinity 310.1 250ml	MEE RSK-175	TOC 9060/LK					pH / Sample Info (Lab Use): Metals	F. Metals	TOC
0903184-03	YS03-FB01-033009	3/30/09	1520	GW	5	3		2				3	1	1								KZ	KZ	
0903184-04	YS03-EB01-033009	3/30/09	1725	GW	5	3		2				3	1	1								KZ	KZ	
0903184-05	YS03-TB01-033009	3/30/09	1730	TB	3	3						3												
0903184-01	YS03-GW24-0309	3/30/09	1430	GW	10	5		2	2			3	1	1	1 (540)	2	2	low volume filtered				KZ	KZ	KZ in Field
0903184-02	YS03-GW29-0309	3/30/09	1650	GW	10	5		2	2			3	1	1	1 (830)	2	2					KZ	KZ	KZ

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or N/A
625 & Phenol samples checked for chlorine? Y or N/A
608 samples checked for pH between 5.0-9.0? Y or N/A

Comments: Metals were field filtered

Sample Custody

Relinquished by:	Date/Time: 3/31/09 1900	Received by:	Date/Time: 3/31/09 1000
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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041

16111

Page 1 of 1

CTO 166 NWS Yorktown

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: CTO166 - NWS Yorktown
Address: 5700 Cleveland St Ste101	Sampling Location: Site 3/25
City: Va Beach State: VA Zip: 23462	Turnaround time: 28 cal day
Project Contact: R. Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757 518 9666	Are aqueous samples field filtered for metals? Y or (N) * *Lab to filter, not preserved
Sampler's Name: M. Ost, F. Amyo	Are high concentrations expected? (Y) or N? If yes, which ID(s)? YS03-GW019A-High Turbidity

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection 2009 Date	Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOC (OLM04.3)	MEE (RSK175)	Metals (ILM05.3)	*Filt. Metals (ILM05.3)	Cl, Alk, Sulfate (300.0, 310.1)	TOC (9060) / (Lloyd Kahn)	Perchlorate (6850)		Perchlorate S/O	pH: Sample Info (Lab Use): Sulfide	TOC
0903184-05	YS03-GW019A-0409 **	4/6	1250	GW	10	5		1	2			X	X	X	X	X	X			—	6	<2
0903184-08	YS03-FB01-040609	4/6	1335	FB-O	3	3						X		X						—	<2	
0903184-09	YS03-TB01-040609	4/6	1345	TB	3	3						X	X							—		
⊛	YS25-GW02-0409	4/6	1515	GW	3	-												X	⊛	0904034-01		
⊛	YS25-GW02P-0409	4/6	1540	GW	1													X	⊛	| 02		
0903184-07	YS25-EB01-040609	4/6	1600	EB-O	10	5		1	2			X	X	X		X	X	X		|	<2	<2
								**	Should be: YS03-GW19A-0409													

Lab Use Only:
Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:
* Lab please Filter metals/not field Filt.
GW019A - High turbidity sample
MS/MSD YS25-GW02-0409

Sample Custody

Relinquished by:	Date/Time: 4/6/09 1700	Received by:	Date/Time: 4/7/09 0945
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? (Y) or N If yes, where? Perchlorate
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.7 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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042

WORK ORDER

Printed: 4/23/2009 4:14:36PM

0903184

COMPUCHEM

Client:	CH2M HILL, INC.	Project Manager:	Cathy Dover
Project:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	Project Number:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-305
SDG:	0903184 CASE:	Status:	Batched

Report To:
CH2M HILL, INC.
REBEKHA SHAW
5700 CLEVELAND STREET, SUITE 101
VIRGINIA BEACH, VA 23462
Phone: 757-671-8311
Fax: -

Invoice To:
CH2M HILL, INC.
ACCOUNTS PAYABLE
P.O. BOX 241329
DENVER, CO 80224
Phone :757-671-8311
Fax: -

Date Due: 04/27/2009 00:00 (20 day TAT)

Received By: Cathy Dover — Date Received: 04/07/2009 09:45

Logged In By: Cathy Dover — Date Logged In: 03/31/2009 12:43

J & B Flags?: YES	TICS?:NO	Spike Level: FULL Spike	Deliverable: Style 9	EDD Format30) CH2 SNEDD

DOD CRITERIA*LCS/LCSD FOR QC*TCL4 VOC 8260B 25ML*TAL METALS 6010/7471*IC 300=CHL/SO4*TOC 9060 QUAD--RPT. ALL 4 RESULTS ON FORMS + AVG. ON FORMS AND ONLY AVG. ON EDD*RSK175=MEE

Analysis	Due	TAT	Expires	Received	Comments
0903184-01 YS03-GW24-0309 [Water] Sampled 03/30/2009 14:30 Eastern					
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 14:30	03/31/2009 10:00	
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
IC 300.0 Sulfate	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
IC 300.0 Chloride	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
GC-RSK-175	04/27/2009 16:00	20	04/13/2009 14:30	03/31/2009 10:00	
ALKALINITY 310.2	04/27/2009 16:00	20	04/13/2009 14:30	03/31/2009 10:00	
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 14:30	03/31/2009 10:00	
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 14:30	03/31/2009 10:00	
0903184-02 YS03-GW29-0309 [Water] Sampled 03/30/2009 16:50 Eastern					
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 16:50	03/31/2009 10:00	
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
ALKALINITY 310.2	04/27/2009 16:00	20	04/13/2009 16:50	03/31/2009 10:00	
IC 300.0 Chloride	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
IC 300.0 Sulfate	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 16:50	03/31/2009 10:00	
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	04/27/2009 16:50	03/31/2009 10:00	
GC-RSK-175	04/27/2009 16:00	20	04/13/2009 16:50	03/31/2009 10:00	

WORK ORDER

Printed: 4/23/2009 4:14:36PM

0903184

COMPUCHEM

Client: CH2M HILL, INC.
Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052
SDG: 0903184 CASE:

Project Manager: Cathy Dover
Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-305
Status: Reported

Analysis	Due	TAT	Expires	Comments
0903184-03 YS03-FB01-033009 [Water] Sampled 03/30/2009 15:20 Eastern				**FIELD BLK**
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 15:20	03/31/2009 10:00
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 15:20	03/31/2009 10:00
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 15:20	03/31/2009 10:00
0903184-04 YS03-EB01-033009 [Water] Sampled 03/30/2009 17:25 Eastern				**EQUIP. BLK**
7470A/7471A Mercury	04/27/2009 16:00	20	04/27/2009 17:25	03/31/2009 10:00
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 17:25	03/31/2009 10:00
6010B METALS TAL	04/27/2009 16:00	20	09/26/2009 17:25	03/31/2009 10:00
0903184-05 YS03-TB01-033009 [Water] Sampled 03/30/2009 17:30 Eastern				**TRIP BLK**
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/13/2009 17:30	03/31/2009 10:00
0903184-06 YS03-GW19A-0409 [Water] Sampled 04/06/2009 12:50 Eastern				
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
6010B METALS TAL	04/27/2009 16:00	20	10/03/2009 12:50	04/07/2009 09:45
7470A/7471A Mercury	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
ALKALINITY 310.2	04/27/2009 16:00	20	04/20/2009 12:50	04/07/2009 09:45
GC-RSK-175	04/27/2009 16:00	20	04/20/2009 12:50	04/07/2009 09:45
IC 300.0 Sulfate	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 12:50	04/07/2009 09:45
IC 300.0 Chloride	04/27/2009 16:00	20	05/04/2009 12:50	04/07/2009 09:45
0903184-07 YS25-EB01-040609 [Water] Sampled 04/06/2009 16:00 Eastern				**EQUIP.BLK**
6010B METALS TAL	04/27/2009 16:00	20	10/03/2009 16:00	04/07/2009 09:45
ALKALINITY 310.2	04/27/2009 16:00	20	04/20/2009 16:00	04/07/2009 09:45
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 16:00	04/07/2009 09:45
TTL ORGNC CRBN (TOC) 9060 QUA	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
IC 300.0 Sulfate	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
IC 300.0 Chloride	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
GC-RSK-175	04/27/2009 16:00	20	04/20/2009 16:00	04/07/2009 09:45
7470A/7471A Mercury	04/27/2009 16:00	20	05/04/2009 16:00	04/07/2009 09:45
0903184-08 YS03-FB01-040609 [Water] Sampled 04/06/2009 13:35 Eastern				**FIELD BLK**
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 13:35	04/07/2009 09:45
7470A/7471A Mercury	04/27/2009 16:00	20	05/04/2009 13:35	04/07/2009 09:45
6010B METALS TAL	04/27/2009 16:00	20	10/03/2009 13:35	04/07/2009 09:45

WORK ORDER

Printed: 4/23/2009 4:14:36PM

0903184

COMPUCHEM

Client:	CH2M HILL, INC.	Project Manager:	Cathy Dover
Project:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	Project Number:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-305
SDG:	0903184 CASE:	Status:	Batched

Analysis	Due	TAT	Expires	Comments
0903184-09 YS03-TB01-040609 [Water] Sampled 04/06/2009 13:45 Eastern				TRIP BLK
VOA-8260B 25ML-TCL4	04/27/2009 16:00	20	04/20/2009 13:45	04/07/2009 09:45

CompuChem
a division of Liberty Analytical Corporation

QUALITY ASSURANCE NOTICE

CompuChem ID # [redacted]
Client ID # YS03-GW-19A-0409
Case #
Type of Analysis Metals (Total)
Receipt Date 4/7/09

The pH reading for the sample above was 6 : the required pH level is <2

A CompuChem Project Manager contacted the client who instructed the laboratory to:

Preserve in-house ✓

Note: For samples preserved in house, certain clients require that the maximum amount of preservative added to a sample in an SDG also be added to the associated field or equipment blank. If neither blank is present, the appropriate laboratory must be notified so the proper amount of preservation can be added to the method blank.

Analyze - qualify with notice ✓ per Rebekha & Megan 4/7/09

Dispose - client will resample

Subcontract lab to preserve

Project Manager [signature] Date 4/7/09

Preservation Type 50% HNO_3 Preservative Lot Number 166-17-2

Preserved By [signature] Date 4/7/09

QAN-R-2
020529

QAN-R-2 052902.llc

Data Completeness

The data package was received complete and intact. Resubmissions were required—incorrect cooler temps on case narrative. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 03/30-04/06/09
Received Date: 03/31-04/07/09
Analysis Dates: 04/03-16/09

Cooler Temps: 0.4-0.7°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. The associated QC blanks for these samples were: YS03-TB01-040609 and YS03-TB01-033009- trip blanks; YS25-EB01-040609 and YS03-EB01-033009- equipment blanks; YS03-FB01-040609 and YS03-FB01-033109- field blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKDS	acetone	1.4J ug/L	2.5 ug/L	14 ug/L
VBLKIE	chloromethane	0.14J ug/L	0.5 ug/L	0.7 ug/L
	methylene chloride	0.25J	0.5	2.5
YS03-TB01-040609	methylene chloride	0.2J ug/L	0.5 ug/L	2 ug/L
	toluene	0.59	0.5	3
YS03-TB01-033009	chloromethane	0.17J	0.5	0.85
	acetone	2.8	2.5	28
	methylene chloride	0.19J	0.5	1.9
	toluene	0.48J	0.5	2.4
YS25-EB01-040609	acetone	8.1	2.5	81
	methylene chloride	0.76	0.5	7.6
	chloroform	0.4J	0.5	2
	toluene	0.16J	0.5	0.8
YS03-EB01-033009	chloromethane	0.22	0.5	1.1
	acetone	17	2.5	170
	methylene chloride	3	0.5	30
	2-butanone	2.7	2.5	27
	chloroform	0.2J	0.5	1
	toluene	0.36J	0.5	1.8
YS03-FB01-040609	acetone	22	2.5	220
	methylene chloride	0.86	0.5	8.6
	chloroform	0.47J	0.5	2.4
	toluene	0.18J	0.5	0.9
YS03-FB01-033109	chloromethane	0.17J	0.5	0.85
	acetone	9	2.5	90
	methylene chloride	1.3	0.5	13
	2-butanone	8.2	2.5	82
	chloroform	0.94	0.5	4.7
	toluene	1.6	0.5	8

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-GW19A-0409, YS03-GW24-0309, YS03-GW29-0309	acetone	B	BL
YS03-GW29-0309	methylene chloride	B	BL
YS03-GW29-0309	chloromethane	B	BL
YS03-GW29-0309	2-butanone	B	BL
YS03-GW29-0309	chloroform	B	BL
YS03-GW29-0309, YS03-GW19A-0409	toluene	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Lynn Mascelli **Date:** 5/31/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9C28002-TUN171 BFB Injection Date: 03/28/09

Instrument ID: 5972HP71 BFB Injection Time: 1720

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.0
75	30.0 - 60.0% of mass 95	43.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	81.5 (100.1)1
177	5.0 - 9.0% of mass 176	5.2 (6.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.5	9C28002-CAL	9C28002-CAL171	03/28/09	1812
02	VSTD001	9C28002-CAL	9C28002-CAL271	03/28/09	1841
03	VSTD025	9C28002-CAL	9C28002-CAL571	03/28/09	2034
04	VSTD010	9C28002-CAL	9C28002-CAL471	03/28/09	2102
05	VSTD005	9C28002-CAL	9C28002-CAL371	03/28/09	2130
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA

YS03-GW29-0309
YS03-FB01-033009
EB01
TB01

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5972HP71 Calibration Date(s): 03/28/09 03/28/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1812 2130

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.36968341	8.517	15.000	
Chloromethane	AVRG		0.27044445	12.062	15.000	
Vinyl Chloride	AVRG		0.23003478	8.624	30.000	
Bromomethane	AVRG		0.15750282	9.483	15.000	
Chloroethane	AVRG		0.09293606	4.050	15.000	
Trichlorofluoromethane	AVRG		0.30211306	7.492	15.000	
1,1-Dichloroethene	AVRG		0.29435162	9.203	30.000	
Carbon disulfide	AVRG		1.08532070	9.621	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.15111423	10.994	15.000	
Acetone	AVRG		0.04053702	10.407	15.000	L/R
Methyl acetate	AVRG		0.26289378	2.681	15.000	
Methylene Chloride	AVRG		0.27597997	5.241	15.000	
trans-1,2-Dichloroethene	AVRG		0.30880819	6.441	15.000	
Methyl-tert-butyl ether	AVRG		0.26913987	6.102	15.000	
1,1-Dichloroethane	AVRG		0.51933511	8.141	15.000	
is-1,2-Dichloroethene	AVRG		0.30144779	3.414	15.000	
2-butanone	AVRG		0.05249255	6.112	15.000	
Chloroform	AVRG		0.50756846	6.234	30.000	
1,1,1-Trichloroethane	AVRG		0.39257894	6.344	15.000	
Carbon Tetrachloride	AVRG		0.26114232	5.606	15.000	
Benzene	AVRG		1.00716400	6.418	15.000	
1,2-Dichloroethane	AVRG		0.26617702	5.609	15.000	
Trichloroethene	AVRG		0.33002699	6.711	15.000	
1,2-Dichloropropane	AVRG		0.24705906	5.055	30.000	
Bromodichloromethane	AVRG		0.33298211	7.620	15.000	
cis-1,3-Dichloropropene	AVRG		0.32575157	6.594	15.000	
4-Methyl-2-pentanone	AVRG		0.17800853	8.339	15.000	
Toluene	AVRG		0.93480306	5.691	30.000	
trans-1,3-Dichloropropene	AVRG		0.36793062	3.534	15.000	
1,1,2-Trichloroethane	AVRG		0.23337676	1.582	15.000	
Tetrachloroethene	AVRG		0.31078865	10.185	15.000	
2-hexanone	AVRG		0.10893166	9.712	15.000	
Dibromochloromethane	AVRG		0.31932787	6.449	15.000	
1,2-Dibromoethane	AVRG		0.23523512	5.882	15.000	
Chlorobenzene	AVRG		0.95964278	5.742	15.000	
Ethylbenzene	AVRG		0.48273954	9.366	30.000	
m,p-Xylene	AVRG		0.59028287	9.153	15.000	
o-Xylene	AVRG		0.56958706	7.286	15.000	
Styrene	AVRG		0.93611935	7.857	15.000	
Bromoform	AVRG		0.16353005	7.565	15.000	
Isopropyl Benzene	AVRG		1.48916751	12.238	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.58615438	4.228	15.000	
1,3-Dichlorobenzene	AVRG		1.51627780	9.537	15.000	
1,4-Dichlorobenzene	AVRG		1.51621915	9.334	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D03002-TUN171 BFB Injection Date: 04/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1004

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.4
75	30.0 - 60.0% of mass 95	47.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.5
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.5
175	5.0 - 9.0% of mass 174	5.7 (7.5)1
176	95.0 - 101.0% of mass 174	75.3 (98.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D03002-CCV	9D04002-CCV1R7	04/03/09	1117
02	VBLKIE	9040308-BLK	9040308-BLK1R7	04/03/09	1236
03	VIELCS	9040308-BS1	9040308-BS171	04/03/09	1316
04	VIELCSD	9040308-BSD	9040308-BSD171	04/03/09	1345
05	YS03-GW29-0309	0903184-02	0903184-0271	04/03/09	1730
06	YS03-FB01-033009	0903184-03	0903184-0371	04/03/09	1759
07	YS03-EB01-033009	0903184-04	0903184-0471	04/03/09	1827
08	YS03-TB01-033009	0903184-05	0903184-0571	04/03/09	1855
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5972HP71 Calibration Date: 04/03/09 Time: 1117

Lab File ID: 9D04002-CCV1R7 Init. Calib. Date(s): 03/28/09 03/28/09

Init. Calib. Times: 1812 2130

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.3696800	0.4445083	0.4445083	0.001	20.24	90.00	AVRG
Chloromethane	0.2704400	0.2605988	0.2605988	0.1	-3.64	90.00	AVRG
Vinyl Chloride	0.2300400	0.2570363	0.2570363	0.001	11.74	20.00	AVRG
Bromomethane	0.1575000	0.1549609	0.1549609	0.001	-1.61	90.00	AVRG
Chloroethane	0.0929400	0.1022950	0.1022950	0.001	10.06	90.00	AVRG
Trichlorofluoromethane	0.3021100	0.4070627	0.4070627	0.001	34.74	90.00	AVRG
1,1-Dichloroethene	0.2943500	0.3055466	0.3055466	0.001	3.80	20.00	AVRG
Carbon disulfide	1.0853200	1.1617105	1.1617105	0.001	7.04	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1511100	0.1833220	0.1833220	0.001	21.32	90.00	AVRG
Acetone	0.0405400	0.0407157	0.0407157	0.001	0.43	90.00	AVRG
Methyl acetate	0.2628900	0.2426343	0.2426343	0.001	-7.70	90.00	AVRG
Methylene Chloride	0.2759800	0.2818705	0.2818705	0.001	2.13	90.00	AVRG
trans-1,2-Dichloroethene	0.3088100	0.3202020	0.3202020	0.001	3.69	90.00	AVRG
Methyl-tert-butyl ether	0.2691400	0.2355056	0.2355056	0.001	-12.50	90.00	AVRG
1,1-Dichloroethane	0.5193300	0.5434829	0.5434829	0.1	4.65	90.00	AVRG
cis-1,2-Dichloroethene	0.3014500	0.3031610	0.3031610	0.001	0.57	90.00	AVRG
2-butanone	0.0524900	0.0453214	0.0453214	0.001	-13.66	90.00	AVRG
Chloroform	0.5075700	0.5714892	0.5714892	0.001	12.59	20.00	AVRG
1,1,1-Trichloroethane	0.3925800	0.4542404	0.4542404	0.001	15.71	90.00	AVRG
Carbon Tetrachloride	0.2611400	0.3175405	0.3175405	0.001	21.60	90.00	AVRG
Benzene	1.0071600	1.0300222	1.0300222	0.001	2.27	90.00	AVRG
1,2-Dichloroethane	0.2661800	0.3031160	0.3031160	0.001	13.88	90.00	AVRG
Trichloroethene	0.3300200	0.3413893	0.3413893	0.001	3.44	90.00	AVRG
1,2-Dichloropropane	0.2470600	0.2489071	0.2489071	0.001	0.75	20.00	AVRG
Bromodichloromethane	0.3329800	0.3679691	0.3679691	0.001	10.51	90.00	AVRG
cis-1,3-Dichloropropene	0.3257500	0.3370666	0.3370666	0.001	3.47	90.00	AVRG
4-Methyl-2-pentanone	0.1780100	0.1528002	0.1528002	0.001	-14.16	90.00	AVRG
Toluene	0.9348000	0.8907592	0.8907592	0.001	-4.71	20.00	AVRG
trans-1,3-Dichloropropene	0.3679300	0.3573770	0.3573770	0.001	-2.87	90.00	AVRG
1,1,2-Trichloroethane	0.2333800	0.2076990	0.2076990	0.001	-11.00	90.00	AVRG
Tetrachloroethene	0.3107900	0.3038644	0.3038644	0.001	-2.23	90.00	AVRG
2-hexanone	0.1089300	0.0918243	0.0918243	0.001	-15.70	90.00	AVRG
Dibromochloromethane	0.3193300	0.3153339	0.3153339	0.001	-1.25	90.00	AVRG
1,2-Dibromoethane	0.2352400	0.2203191	0.2203191	0.001	-6.34	90.00	AVRG
Chlorobenzene	0.9596400	0.9024716	0.9024716	0.3	-5.96	90.00	AVRG
Ethylbenzene	0.4827400	0.4590633	0.4590633	0.001	-4.90	20.00	AVRG
m,p-Xylene	0.5902800	0.5706838	0.5706838	0.001	-3.32	90.00	AVRG
o-Xylene	0.5695900	0.5344969	0.5344969	0.001	-6.16	90.00	AVRG
Styrene	0.9361200	0.8781088	0.8781088	0.001	-6.20	90.00	AVRG
Bromoform	0.1635300	0.1562309	0.1562309	0.1	-4.46	90.00	AVRG
Isopropyl Benzene	1.4891700	1.4423184	1.4423184	0.001	-3.15	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5861500	0.5300447	0.5300447	0.3	-9.57	90.00	AVRG

FORM VII VOA

052A

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D10010-TUN191 BFB Injection Date: 04/10/09

Instrument ID: 5975HPMS91 BFB Injection Time: 2219

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.1
75	30.0 - 60.0% of mass 95	54.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	73.0
175	5.0 - 9.0% of mass 174	5.5 (7.6)1
176	95.0 - 101.0% of mass 174	71.9 (98.5)1
177	5.0 - 9.0% of mass 176	4.5 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9D10010-CAL	9D10010-CAL291	04/10/09	2317
02	VSTD0.5	9D10010-CAL	9D10010-CAL191	04/10/09	2344
03	VSTD010	9D10010-CAL	9D10010-CAL491	04/11/09	0010
04	VSTD025	9D10010-CAL	9D10010-CAL591	04/11/09	0037
05	VSTD005	9D10010-CAL	9D10010-CAL3R9	04/11/09	0104
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FORM V VOA

YS03-GW24-0309

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date(s): 04/10/09 04/11/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 2317 0104

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.57026672	4.389	15.000	
Chloromethane	AVRG		0.32854137	4.385	15.000	
Vinyl Chloride	AVRG		0.41164869	3.658	30.000	
Bromomethane	AVRG		0.22537373	4.655	15.000	
Chloroethane	AVRG		0.22383446	2.786	15.000	
Trichlorofluoromethane	AVRG		0.81194139	1.708	15.000	
1,1-Dichloroethene	AVRG		0.36171202	7.594	30.000	
Carbon disulfide	AVRG		1.20051709	5.373	15.000	
1,1,2-trichloro-1,2,2-triflu	LINR	-0.1274962	5.25918442	0.9952014	0.9950000	
Acetone	LINR	-0.3831795	46.0959482	0.9997306	0.9950000	
Methyl acetate	AVRG		0.16244159	7.414	15.000	
Methylene Chloride	AVRG		0.22992561	10.893	15.000	
trans-1,2-Dichloroethene	AVRG		0.30209534	5.158	15.000	
Methyl-tert-butyl ether	AVRG		0.54248558	3.286	15.000	
1,1-Dichloroethane	AVRG		0.52814705	3.942	15.000	
cis-1,2-Dichloroethene	AVRG		0.29106037	4.199	15.000	
2-butanone	AVRG		0.03158005	1.016	15.000	4R
Chloroform	AVRG		0.63070822	1.978	30.000	
1,1,1-Trichloroethane	AVRG		0.78230254	6.056	15.000	
Carbon Tetrachloride	AVRG		0.73592671	8.832	15.000	
Benzene	AVRG		1.08261217	2.444	15.000	
1,2-Dichloroethane	AVRG		0.37026160	2.276	15.000	
Trichloroethene	AVRG		0.36326259	7.610	15.000	
1,2-Dichloropropane	AVRG		0.21615602	3.322	30.000	
Bromodichloromethane	AVRG		0.42043333	1.539	15.000	
cis-1,3-Dichloropropene	AVRG		0.39771715	3.046	15.000	
4-Methyl-2-pentanone	AVRG		0.11264688	5.826	15.000	
Toluene	AVRG		1.09746322	10.345	30.000	
trans-1,3-Dichloropropene	AVRG		0.50676418	7.528	15.000	
1,1,2-Trichloroethane	AVRG		0.19563700	10.443	15.000	
Tetrachloroethene	LINR	-0.1058478	2.68213448	0.9978702	0.9950000	
2-hexanone	AVRG		0.08110240	1.789	15.000	
Dibromochloromethane	AVRG		0.32763286	2.181	15.000	
1,2-Dibromoethane	AVRG		0.19814661	3.129	15.000	
Chlorobenzene	AVRG		1.19971941	8.685	15.000	
Ethylbenzene	AVRG		0.73063553	13.115	30.000	
m,p-Xylene	AVRG		0.91792292	13.255	15.000	
o-Xylene	AVRG		0.83780962	13.008	15.000	
Styrene	AVRG		1.31677732	8.937	15.000	
Bromoform	AVRG		0.16020427	3.516	15.000	
Isopropyl Benzene	AVRG		2.68134887	14.229	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.38694436	4.333	15.000	
1,3-Dichlorobenzene	AVRG		2.05705231	14.202	15.000	
1,4-Dichlorobenzene	AVRG		1.96179580	11.931	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D13001-TUN191 BFB Injection Date: 04/13/09

Instrument ID: 5975HPMS91 BFB Injection Time: 0935

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.2
75	30.0 - 60.0% of mass 95	57.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	77.5
175	5.0 - 9.0% of mass 174	5.9 (7.6)1
176	95.0 - 101.0% of mass 174	74.2 (95.8)1
177	5.0 - 9.0% of mass 176	5.3 (7.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D13001-CCV	9D13001-CCV191	04/13/09	1000
02	VBLKIX	9041307-BLK	9041307-BLK191	04/13/09	1047
03	VIXLCS	9041307-BS1	9041307-BS191	04/13/09	1134
04	VIXLCSD	9041307-BSD	9041307-BSD191	04/13/09	1201
05	YS03-GW24-0309	0903184-01	0903184-01D391	04/13/09	1617
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date: 04/13/09 Time: 1000

Lab File ID: 9D13001-CCV191 Init. Calib. Date(s): 04/10/09 04/11/09

Init. Calib. Times: 2317 0104

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.5702600	0.4959631	0.4959631	0.001	-13.03	90.00	AVRG	
Chloromethane	0.3285400	0.2849237	0.2849237	0.1	-13.28	90.00	AVRG	
Vinyl Chloride	0.4116500	0.3882763	0.3882763	0.001	-5.68	20.00	AVRG	
Bromomethane	0.2253700	0.2185383	0.2185383	0.001	-3.03	90.00	AVRG	
Chloroethane	0.2238400	0.2223590	0.2223590	0.001	-0.66	90.00	AVRG	
Trichlorofluoromethane	0.8119400	0.8370912	0.8370912	0.001	3.10	90.00	AVRG	
1,1-Dichloroethene	0.3617100	0.3596480	0.3596480	0.001	-0.57	20.00	AVRG	
Carbon disulfide	1.2005200	1.2215720	1.2215720	0.001	1.75	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	134.56017	125.00000	0.2289286	0.001	7.65	90.00	LINR	
Acetone	670.52458	625.00000	0.0249366	0.001	7.28	90.00	LINR	4R
Methyl acetate	0.1624400	0.1634586	0.1634586	0.001	0.63	90.00	AVRG	
Methylene Chloride	0.2299200	0.2789374	0.2789374	0.001	21.32	90.00	AVRG	
rans-1,2-Dichloroethene	0.3021000	0.3048809	0.3048809	0.001	0.92	90.00	AVRG	
Methyl-tert-butyl ether	0.5424900	0.5606879	0.5606879	0.001	3.35	90.00	AVRG	
1,1-Dichloroethane	0.5281500	0.5255430	0.5255430	0.1	-0.49	90.00	AVRG	
cis-1,2-Dichloroethene	0.2910600	0.2954758	0.2954758	0.001	1.52	90.00	AVRG	
2-butanone	0.0315800	0.0336350	0.0336350	0.001	6.51	90.00	AVRG	4R
Chloroform	0.6307100	0.6578309	0.6578309	0.001	4.30	20.00	AVRG	
1,1,1-Trichloroethane	0.7823000	0.7640748	0.7640748	0.001	-2.33	90.00	AVRG	
Carbon Tetrachloride	0.7359300	0.6506501	0.6506501	0.001	-11.59	90.00	AVRG	
Benzene	1.0826100	1.0710572	1.0710572	0.001	-1.07	90.00	AVRG	
1,2-Dichloroethane	0.3702600	0.3943268	0.3943268	0.001	6.50	90.00	AVRG	
Trichloroethene	0.3632600	0.3503964	0.3503964	0.001	-3.54	90.00	AVRG	
1,2-Dichloropropane	0.2161500	0.2081955	0.2081955	0.001	-3.68	20.00	AVRG	
Bromodichloromethane	0.4204300	0.4152496	0.4152496	0.001	-1.23	90.00	AVRG	
cis-1,3-Dichloropropene	0.3977200	0.3950971	0.3950971	0.001	-0.66	90.00	AVRG	
4-Methyl-2-pentanone	0.1126500	0.1145734	0.1145734	0.001	1.71	90.00	AVRG	
Toluene	1.0974600	1.0430761	1.0430761	0.001	-4.96	20.00	AVRG	
trans-1,3-Dichloropropene	0.5067600	0.4900647	0.4900647	0.001	-3.29	90.00	AVRG	
1,1,2-Trichloroethane	0.1956400	0.1906524	0.1906524	0.001	-2.55	90.00	AVRG	
Tetrachloroethene	131.41965	125.00000	0.4314493	0.001	5.14	90.00	LINR	
2-hexanone	0.0811000	0.0812171	0.0812171	0.001	0.14	90.00	AVRG	
Dibromochloromethane	0.3276300	0.3126769	0.3126769	0.001	-4.56	90.00	AVRG	
1,2-Dibromoethane	0.1981500	0.1920886	0.1920886	0.001	-3.06	90.00	AVRG	
Chlorobenzene	1.1997200	1.1409402	1.1409402	0.3	-4.90	90.00	AVRG	
Ethylbenzene	0.7306400	0.6966812	0.6966812	0.001	-4.65	20.00	AVRG	
m,p-Xylene	0.9179200	0.8760485	0.8760485	0.001	-4.56	90.00	AVRG	
o-Xylene	0.8378100	0.8036741	0.8036741	0.001	-4.07	90.00	AVRG	
Styrene	1.3167800	1.2606450	1.2606450	0.001	-4.26	90.00	AVRG	
Bromoform	0.1602000	0.1495351	0.1495351	0.1	-6.66	90.00	AVRG	
Isopropyl Benzene	2.6813500	2.5370924	2.5370924	0.001	-5.38	90.00	AVRG	
,1,2,2-Tetrachloroethane	0.3869400	0.3463508	0.3463508	0.3	-10.49	90.00	AVRG	

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D15007-TUN191 BFB Injection Date: 04/15/09

Instrument ID: 5975HPMS91 BFB Injection Time: 1456

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.0
75	30.0 - 60.0% of mass 95	54.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.4
173	Less than 2.0% of mass 174	0.9 (1.2)1
174	Greater than 50.0% of mass 95	76.3
175	5.0 - 9.0% of mass 174	5.9 (7.8)1
176	95.0 - 101.0% of mass 174	76.3 (100.0)1
177	5.0 - 9.0% of mass 176	4.8 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D15007-CAL	9D15007-CAL391	04/15/09	1522
02	VSTD001	9D15007-CAL	9D15007-CAL291	04/15/09	1548
03	VSTD0.5	9D15007-CAL	9D15007-CAL191	04/15/09	1615
04	VSTD010	9D15007-CAL	9D15007-CAL491	04/15/09	1642
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21					
22					

YS25-EB01-040609
YS03-FB01-
YS03-TB01-
YS03-GW19A-0409

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date(s): 04/15/09 04/15/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1522 1709

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.67587706	5.919	15.000	
Chloromethane	AVRG		0.35739885	8.638	15.000	
Vinyl Chloride	AVRG		0.43872704	5.308	30.000	
Bromomethane	AVRG		0.25265732	7.478	15.000	
Chloroethane	AVRG		0.24418667	5.723	15.000	
Trichlorofluoromethane	AVRG		0.91328439	5.238	15.000	
1,1-Dichloroethene	AVRG		0.37557911	8.533	30.000	
Carbon disulfide	AVRG		1.23479873	5.426	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.23359921	8.753	15.000	
Acetone	LINR	-0.2114964	36.1526453	0.9997724	0.9950000	
Methyl acetate	AVRG		0.20122431	7.613	15.000	
Methylene Chloride	AVRG		0.30242097	5.702	15.000	
trans-1,2-Dichloroethene	AVRG		0.30586196	4.106	15.000	
Methyl-tert-butyl ether	AVRG		0.60716765	1.114	15.000	
1,1-Dichloroethane	AVRG		0.53828758	4.100	15.000	
cis-1,2-Dichloroethene	AVRG		0.29907819	2.718	15.000	
2-butanone	AVRG		0.03670669	3.589	15.000	L/R
Chloroform	AVRG		0.66776474	3.203	30.000	
1,1,1-Trichloroethane	AVRG		0.78735233	4.751	15.000	
Carbon Tetrachloride	AVRG		0.74195529	3.174	15.000	
Benzene	AVRG		1.07870480	2.803	15.000	
1,2-Dichloroethane	AVRG		0.42823020	4.455	15.000	
Trichloroethene	AVRG		0.35645264	2.524	15.000	
1,2-Dichloropropane	AVRG		0.21902438	2.565	30.000	
Bromodichloromethane	AVRG		0.46485862	2.524	15.000	
cis-1,3-Dichloropropene	AVRG		0.40542135	4.726	15.000	
4-Methyl-2-pentanone	AVRG		0.11562543	2.481	15.000	
Toluene	AVRG		0.96631724	3.300	30.000	
trans-1,3-Dichloropropene	AVRG		0.49773660	1.576	15.000	
1,1,2-Trichloroethane	AVRG		0.20112126	6.351	15.000	
Tetrachloroethene	AVRG		0.41338540	6.134	15.000	
2-hexanone	AVRG		0.08248318	2.155	15.000	
Dibromochloromethane	AVRG		0.35826124	2.323	15.000	
1,2-Dibromoethane	AVRG		0.20775099	4.882	15.000	
Chlorobenzene	AVRG		1.12918059	3.616	15.000	
Ethylbenzene	AVRG		0.65589198	4.830	30.000	
m,p-Xylene	AVRG		0.81285937	4.137	15.000	
o-Xylene	AVRG		0.76669157	3.458	15.000	
Styrene	AVRG		1.20488921	4.383	15.000	
Bromoform	AVRG		0.18798755	4.980	15.000	
Isopropyl Benzene	AVRG		2.32864440	3.696	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.35961782	3.046	15.000	
1,3-Dichlorobenzene	AVRG		1.82072519	5.725	15.000	
1,4-Dichlorobenzene	AVRG		1.81787540	6.876	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9D16002-TUN191 BFB Injection Date: 04/16/09

Instrument ID: 5975HPMS91 BFB Injection Time: 0208

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.8
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.5 (0.6)1
174	Greater than 50.0% of mass 95	80.3
175	5.0 - 9.0% of mass 174	5.8 (7.2)1
176	95.0 - 101.0% of mass 174	79.0 (98.4)1
177	5.0 - 9.0% of mass 176	5.0 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9D16002-CCV	9D16002-CCV191	04/16/09	0221
02	VBLKDS	9041603-BLK	9041603-BLK191	04/16/09	0248
03	VDSLCS	9041603-BS1	9041603-BS1R91	04/16/09	0354
04	VDSLCSD	9041603-BSD	9041603-BSD191	04/16/09	0421
05	YS25-EB01-040609	0903184-07	0903184-0791	04/16/09	0958
06	YS03-FB01-040609	0903184-08	0903184-0891	04/16/09	1025
07	YS03-TB01-040609	0903184-09	0903184-0991	04/16/09	1052
08	YS03-GW19A-0409	0903184-06	0903184-06R91	04/16/09	1320
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Instrument ID: 5975HPMS91 Calibration Date: 04/16/09 Time: 0221

Lab File ID: 9D16002-CCV191 Init. Calib. Date(s): 04/15/09 04/15/09

Init. Calib. Times: 1522 1709

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.6758800	0.7207545	0.7207545	0.001	6.64	90.00	AVRG
Chloromethane	0.3574000	0.3926532	0.3926532	0.1	9.86	90.00	AVRG
Vinyl Chloride	0.4387300	0.4812179	0.4812179	0.001	9.68	20.00	AVRG
Bromomethane	0.2526600	0.2239531	0.2239531	0.001	-11.36	90.00	AVRG
Chloroethane	0.2441900	0.2709837	0.2709837	0.001	10.97	90.00	AVRG
Trichlorofluoromethane	0.9132900	1.0050854	1.0050854	0.001	10.05	90.00	AVRG
1,1-Dichloroethene	0.3755800	0.4051781	0.4051781	0.001	7.88	20.00	AVRG
Carbon disulfide	1.2348000	1.3494170	1.3494170	0.001	9.28	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2336000	0.2369075	0.2369075	0.001	1.42	90.00	AVRG
Acetone	760.64099	625.00000	0.0348335	0.001	-21.70	90.00	LINR J
Methyl acetate	0.2012200	0.2219656	0.2219656	0.001	10.31	90.00	AVRG
Methylene Chloride	0.3024200	0.3138821	0.3138821	0.001	3.79	90.00	AVRG
rans-1,2-Dichloroethene	0.3058600	0.3045703	0.3045703	0.001	-0.42	90.00	AVRG
ethyl-tert-butyl ether	0.6071700	0.5289058	0.5289058	0.001	-12.89	90.00	AVRG
1,1-Dichloroethane	0.5382900	0.5266511	0.5266511	0.1	-2.16	90.00	AVRG
cis-1,2-Dichloroethene	0.2990800	0.2864808	0.2864808	0.001	-4.21	90.00	AVRG
2-butanone	0.0367100	0.0348650	0.0348650	0.001	-5.02	90.00	AVRG 4R
Chloroform	0.6677600	0.6826744	0.6826744	0.001	2.23	20.00	AVRG
1,1,1-Trichloroethane	0.7873500	0.8064858	0.8064858	0.001	2.43	90.00	AVRG
Carbon Tetrachloride	0.7419500	0.7693327	0.7693327	0.001	3.69	90.00	AVRG
Benzene	1.0787000	1.0279984	1.0279984	0.001	-4.70	90.00	AVRG
1,2-Dichloroethane	0.4282300	0.4353657	0.4353657	0.001	1.67	90.00	AVRG
Trichloroethene	0.3564500	0.3305628	0.3305628	0.001	-7.26	90.00	AVRG
1,2-Dichloropropane	0.2190200	0.2208893	0.2208893	0.001	0.85	20.00	AVRG
Bromodichloromethane	0.4648600	0.4685044	0.4685044	0.001	0.78	90.00	AVRG
cis-1,3-Dichloropropene	0.4054200	0.3838336	0.3838336	0.001	-5.32	90.00	AVRG
4-Methyl-2-pentanone	0.1156200	0.1095872	0.1095872	0.001	-5.22	90.00	AVRG
Toluene	0.9663200	0.8809734	0.8809734	0.001	-8.83	20.00	AVRG
trans-1,3-Dichloropropene	0.4977400	0.4890213	0.4890213	0.001	-1.75	90.00	AVRG
1,1,2-Trichloroethane	0.2011200	0.1850202	0.1850202	0.001	-8.00	90.00	AVRG
Tetrachloroethene	0.4133900	0.3741710	0.3741710	0.001	-9.49	90.00	AVRG
2-hexanone	0.0824800	0.0786457	0.0786457	0.001	-4.65	90.00	AVRG
Dibromochloromethane	0.3582600	0.3284175	0.3284175	0.001	-8.33	90.00	AVRG
1,2-Dibromoethane	0.2077500	0.1852268	0.1852268	0.001	-10.84	90.00	AVRG
Chlorobenzene	1.1291800	1.0354010	1.0354010	0.3	-8.30	90.00	AVRG
Ethylbenzene	0.6558900	0.5852882	0.5852882	0.001	-10.76	20.00	AVRG
m,p-Xylene	0.8128600	0.7309484	0.7309484	0.001	-10.08	90.00	AVRG
o-Xylene	0.7666900	0.6953180	0.6953180	0.001	-9.31	90.00	AVRG
Styrene	1.2048900	1.0988930	1.0988930	0.001	-8.80	90.00	AVRG
Bromoform	0.1879900	0.1805582	0.1805582	0.1	-3.95	90.00	AVRG
Isopropyl Benzene	2.3286500	2.0626987	2.0626987	0.001	-11.42	90.00	AVRG
,1,2,2-Tetrachloroethane	0.3596200	0.3440557	0.3440557	0.3	-4.33	90.00	AVRG

FORM VII VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKDS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9041603-BLK191 Lab Sample ID: 9041603-BLK1

Date Analyzed: 04/16/09 Time Analyzed: 0248

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5975HPMS91

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VDSLCS	9041603-BS1	9041603-BS1R	0354
02	VDSLCSD	9041603-BSD1	9041603-BSD1	0421
03	YS25-EB01-040609	0903184-07	0903184-0791	0958
04	YS03-FB01-040609	0903184-08	0903184-0891	1025
05	YS03-TB01-040609	0903184-09	0903184-0991	1052
B 06	YS03-GW19A-0409	0903184-06	0903184-06R9	1320
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COMMENTS: Acetone 1.4 J ug/L (2.5)

FORM IV VOA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKIE

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Lab File ID: 9040308-BLK1R71 Lab Sample ID: 9040308-BLK1

Date Analyzed: 04/03/09 Time Analyzed: 1236

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

Chl A MC

B ma B

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VIELCS	9040308-BS1	9040308-BS17	1316
02	VIELCSD	9040308-BSD1	9040308-BSD1	1345
03	YS03-GW29-0309	0903184-02	0903184-0271	1730
04	YS03-FB01-033009	0903184-03	0903184-0371	1759
05	YS03-EB01-033009	0903184-04	0903184-0471	1827
06	YS03-TB01-033009	0903184-05	0903184-0571	1855
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COMMENTS: Chloromethane 0.14J ug/L (0.50)
Acetone 1.6J (2.5)
MC 0.25J (0.5)

FORM IV VOA

Initial Calibration Date: 3/28/2009

RRF and %RSD Calculations:

Compound Name: chloromethane

Lab Value: 0.325

Area of Compound	830175
Area of Internal STD	510420
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.325

Compound Name: 4-methyl-2-pentanone

Lab Value: 8.34

RRF of STD 1	0.1549
RRF of STD 2	0.1775
RRF of STD 3	0.1925
RRF of STD 4	0.1895
RRF of STD 5	0.1757
Calculated % RSD	8.34

Continuing Calibration File ID: 4/3/2009

RRF and %D Calculations:

Compound Name: carbon disulfide

Lab Value: 1.162

Area of Compound	618928
Area of Internal STD	532773
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.162

Compound Name: benzene

Lab Value: 2.3

Average RRF	1.007
Calibration Check RRF	1.030
Calculated % D	-2.3

SAMPLE CALCULATION

Sample ID: YS02-FB01-033009
Standard ID: 4/3/2009
Compound: chloromethane
Concnetration: 0.17ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	3824		
Area of Internal STD	408183		
Conc. of Internal (ng)	125	250	
RRF of Compound	0.27044		
Dilution Factor	1	1	
Weight of Sample	NA		
Volume of Sample	25	NA	
% Moisture	NA	0.83	
Aliquot of sample	NA	NA	
Concentration	0.17	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	10.122	4.486	0.443
Standard	10.121	4.485	0.443

CompuChem

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501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
REVISED
SDG # 0903184
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-GW24-0309, YS03-GW29-0309, YS03-FB01-033009, YS03-EB01-033009, YS03-TB01-033009, YS03-GW19A-0409, YS25-EB01-040609, YS03-FB01-040609 AND YS03-TB01-040609

The 9 aqueous samples listed above were received intact, refrigerated between 0.4°C and 0.7°C, with proper documentation, in sealed shipping containers, on March 31 and April 7, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0903184 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, sample YS03-GW24-0309 was initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 91 on 4/15/09 associated with the BFB injected at 1456. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VI. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard. Manual integrations were performed on 9C28002-CAL171, 9C28002-CAL271, 9C28002-CAL471, 9D10010-CAL191, 9D10010-CAL291, 9D15007-CAL191, 9D15007-CAL291, 9D04002-CCV1R71, 9040308-BS171 and 9040308-BLK1R71 process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
April 23, 2009

DataQual ES

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "DataQual" <dataqual@charter.net>
Cc: <Rebekha.Shaw@CH2M.com>; "Jacqueline Cleveland" <cleve137@charter.net>
Sent: Monday, June 01, 2009 1:57 PM
Attach: 0903184 VOC REVISED NARRATIVE.pdf; 0903136 VOC REVISED NARRATIVE.pdf
Subject: RE: cooler temp question

Hi Laura,

You are correct, the temperatures on the two Voc case narratives are not correct. From what I can tell, the reviewer must have accidently left the temps in from the previous case narrative she did in the template.

I asked her to please revise them. The revised case narratives are attached.

I apologize for the oversight.

Have a great day!

Cathy

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: DataQual [mailto:dataqual@charter.net]
Sent: Monday, June 01, 2009 10:59 AM
To: Cathy Dover
Cc: Rebekha.Shaw@CH2M.com; Jacqueline Cleveland
Subject: cooler temp question

Dear Cathy,

According to the case narrative for SDG#0903184 the coolers were received at 0.1-5.2 degrees C; however according to the COC the coolers were received at 0.4 and 0.7--could you please check that I am not missing something in the data package and if the COC is correct please change the case narrative. I have the same question with the case narrative for SDG#0903136, it lists temps at 0.1-0.8 and the COC lists the samples at 0.1-1.3C. Possibly I am not understanding the wording on the case narrative or is this also incorrect?

Thank you,
Laura

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 3/30, 4/6
Received Date: 3/31, 4/7
Prep. Dates: no prep – dissolved; 4/8 ICP total; 4/8 dissolved, 4/8 total Hg
Analysis Dates: 4/15 dissolved, 4/9-4/10 total ICP; 4/9 dissolved, 4/9 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	chromium	1.527B ug/L	7.635 ug/L	B	BL
	copper	2.274B ug/L	11.37 ug/L	B	BL
	iron	37.885B ug/L	200.78 ug/L	B	BL
	vanadium	0.667B ug/L	3.335 ug/L	B	BL
	aluminum	-64.036B ug/L	≤ 10X MDL (534 ug/L)	L/UL	BL
	beryllium	-2.189B ug/L	≤ 10X MDL (4 ug/L)	L/UL	BL
ICB	nickel	1.0B ug/L	5 ug/L	B	BL
	mercury	-0.103B ug/L	≤ 10X MDL (1.0 ug/L)	L/UL	BL
YS03-EB01-033009	zinc	6.3B ug/L	31.5 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all dissolved metals field samples	chromium	B	BL
all dissolved metals field samples	copper	B	BL
YS03-GW24-0309, YS03-GW29-0309	iron	B	BL
YS03-GW24-0309, YS03-GW29-0309	vanadium	B	BL
YS03-GW24-0309, YS03-GW29-0309	aluminum	L/UL	BL
all dissolved metals field samples	beryllium	L/UL	BL
YS03-GW19A-0409, YS03-GW29-0309	nickel	B	BL
all dissolved metals field samples	mercury	L/UL	BL
YS03-GW24-0309	zinc	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	antimony	8.306B ug/L	41.53 ug/L	B	BL
YS03-FB01-033009	vanadium	0.69B ug/L	3.45 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all total metals field samples	antimony	B	BL
YS03-GW29-0309	vanadium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

There was no matrix spike pair in this SDG.

SERIAL DILUTIONS

The serial dilution analyses of samples YS03-GW24-0309 for total metals exhibited acceptable %Ds for all analytes. No qualifications were required.

The serial dilution analyses of samples YS03-GW24-0309 for dissolved metals exhibited acceptable %Ds for all analytes except potassium (20.5%). All reported results for potassium in the dissolved metals field samples were qualified as estimated J/UJ.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!
			#DIV/0!
			#DIV/0!

Comments: No qualifications were required.

Total Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

Comments: Flag Fe, Mn, K and Na as estimated J.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS03-EB01-033009
COMPOUND: copper
CONCENTRATION: 3.5 ug/L
%Solids – na
50 ml

Raw Data result: 3.453747 ug/L

3.453747 ug/L * 0.05L/0.05L = 3.453747 ug/L

Total Metals

EPA SAMPLE ID: YS03-GW19A-0409
COMPOUND: vanadium
CONCENTRATION: 77.6 ug/L
%Solids – na
50 ml

Raw Data result: 77.58978 ug/L

77.58978 ug/L * 0.05L/0.05L = 77.58978 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J. The laboratory reported non-detect results to the MDL instead of the RL.

Reviewer A Cleveland **Date:** 6/4/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903184

The indicated Sample Delivery Group (SDG) consisting of seven (7) water samples was received into the laboratory information management system (LIMS) on March 31 and April 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 0.7°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0903184-01 ID YS03-GW24-0309L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2. Forneste for Susan Bass
Susan W. Bass
Senior Chemist
April 13, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	53.400	U	P
Antimony	2.4	B	2.4	U	2.4	U	2.4	U	8.306	B	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.3	U	0.3	U	0.300	U	P
Beryllium	0.4	U	0.4	U	1.3	B	1.0	B	-0.749	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	-0.645	B	P
Calcium	-219.7	B	-179.8	B	-201.5	B	-193.5	B	-218.407	B	P
Chromium	0.7	U	0.7	U	0.7	U	0.7	U	0.868	B	P
Cobalt	1.6	U	1.6	U	1.6	U	1.6	U	-1.945	B	P
Copper	-0.9	B	0.8	U	-1.4	B	-1.6	B	0.840	U	P
Iron	24.6	U	24.6	U	24.6	U	24.6	U	24.600	U	P
Lead	1.4	U	1.4	U	-1.4	B	1.4	U	1.400	U	P
Magnesium	31.0	U	33.8	B	31.0	U	31.0	U	31.000	U	P
Manganese	0.4	U	0.4	U	0.4	U	0.4	U	0.370	U	P
Mercury	-0.103	B	-0.134	B	-0.111	B	0.100	U	0.100	U	CV
Nickel	0.7	U	0.7	U	0.7	U	0.7	U	0.670	U	P
Potassium	9.9	U	9.9	U	9.9	U	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	234.478	B	P
Thallium	3.3	U	3.3	U	3.3	U	3.3	U	3.300	U	P
Vanadium	0.6	U	0.6	U	0.6	U	0.6	U	0.570	U	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

See PBBL

NQ

NQ

NQ

none assoc

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U	53.4	U			P
Antimony			3.1	B	3.7	B	2.5	B	See PB		P
Arsenic			2.2	U	2.2	U	2.2	U			P
Barium			0.3	U	0.3	U	0.3	U			P
Beryllium			0.4	U	0.4	U	0.4	U			P
Cadmium			0.6	U	0.6	U	0.6	U			P
Calcium			-220.8	B	-216.2	B	-214.6	B	NQ		P
Chromium			0.7	U	1.3	B	1.0	B	NQ		P
Cobalt			1.6	U	-1.9	B	1.6	U			P
Copper			0.8	U	0.8	U	0.8	U			P
Iron			24.6	U	24.6	U	24.6	U			P
Lead			1.4	U	1.4	U	1.4	U			P
Magnesium			31.0	U	31.0	U	31.0	U			P
Manganese			0.4	U	0.4	U	0.4	U			P
Nickel			0.7	U	0.7	B	1.0	B	NQ		P
Potassium			9.9	U	9.9	U	9.9	U			P
Selenium			2.3	B	2.2	U	2.2	U			P
Silver			0.6	U	0.6	U	0.6	U			P
Sodium			159.5	U	159.5	U	159.5	U			P
Thallium			3.3	U	3.3	U	4.4	B	NQ		P
Vanadium			0.6	U	0.7	B	0.6	U			P
Zinc			5.2	U	5.2	U	5.2	U			P

none assoc

YS03-GW24 29 19A

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U	53.4	U					P
Antimony			2.4	U	2.4	U					P
Arsenic			2.2	U	2.2	U					P
Barium			0.3	U	0.3	U					P
Beryllium			0.4	U	-0.8	B					P
Cadmium			0.6	U	-1.0	B					P
Calcium			-215.3	B	220.3	B					P
Chromium			0.8	B	0.7	U					P
Cobalt			-1.7	B	-3.6	B					P
Copper			0.8	U	0.8	U					P
Iron			24.6	U	24.6	U					P
Lead			1.4	U	1.4	U					P
Magnesium			31.0	U	31.0	U					P
Manganese			0.4	U	0.4	U					P
Nickel			0.7	U	0.7	U					P
Potassium			9.9	U	9.9	U					P
Selenium			2.2	U	2.2	U					P
Silver			0.6	U	0.6	U					P
Sodium			159.5	U	159.5	U					P
Thallium			3.3	U	4.6	B					P
Vanadium			0.6	U	0.6	U					P
Zinc			5.2	U	5.2	U					P

10 11

NQ NQ

Y503-GW24
29
19A

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0903186

The indicated Sample Delivery Group (SDG) consisting of five (5) dissolved water sample was received into the laboratory information management system (LIMS) on March 31 and April 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.4 to 0.7°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested dissolved TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0903186-01 ID YS03-GW24-0309L was performed in accordance with requirements for ICP analysis and ID YS03-GW19A-0309 was performed for mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2 Jonesters for Susan Bass

Susan W. Bass
Senior Chemist
April 16, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	53.4	U	53.4	U	53.4	U	53.4	U	-64.036	B	P
Antimony	4.5	B	2.4	U	3.3	B	2.4	U	2.653	B	P
Arsenic	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Barium	0.3	U	0.3	U	0.4	B	0.3	B	0.300	U	P
Beryllium	0.4	U	0.4	U	-0.9	B	1.9	B	-2.189	B	P
Cadmium	0.6	U	0.6	U	0.6	U	0.6	U	0.640	U	P
Calcium	-200.3	B	-167.5	B	-148.5	B	-171.4	B	-180.094	B	P
Chromium	1.5	B	2.0	B	2.0	B	1.7	B	1.527	B	P
Cobalt	1.6	U	1.6	U	-2.0	B	-1.7	B	1.600	U	P
Copper	1.0	B	1.1	B	1.9	B	2.3	B	2.274	B	P
Iron	24.8	B	34.9	B	42.0	B	36.4	B	37.882	B	P
Lead	1.4	U	1.4	U	1.4	U	1.4	U	1.400	U	P
Magnesium	31.0	U	47.2	B	63.8	B	40.8	B	31.000	U	P
Manganese	0.4	U	0.4	B	0.4	B	0.4	B	0.430	B	P
Mercury	-0.103	B	-0.134	B	-0.111	B	0.100	U	0.100	U	CV
Nickel	1.0	B	0.7	B	0.9	B	0.8	B	0.670	U	P
Potassium	9.9	U	10.2	B	13.4	B	9.9	U	9.900	U	P
Selenium	2.2	U	2.2	U	2.2	U	2.2	U	2.200	U	P
Silver	0.6	U	0.6	U	0.6	U	0.6	U	0.620	U	P
Sodium	159.5	U	159.5	U	159.5	U	159.5	U	159.500	U	P
Thallium	3.3	U	4.5	B	3.3	U	3.7	B	3.300	U	P
Vanadium	0.7	B	1.0	B	0.9	B	0.8	B	0.667	B	P
Zinc	5.2	U	5.2	U	5.2	U	5.2	U	5.200	U	P

none assoc.

GW24
GW29
GW19A

√ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			53.4	U							P
Antimony			3.8	B	NQ						P
Arsenic			2.2	U							P
Barium			0.6	B	NQ						P
Beryllium			2.1	B	see PB						P
Cadmium			0.6	U							P
Calcium			-163.5	B	NQ						P
Chromium			1.8	B	see PB						P
Cobalt			1.6	U							P
Copper			3.9	B	see PB						P
Iron			45.7	B	see PB						P
Lead			1.4	U							P
Magnesium			48.6	B	NQ						P
Manganese			0.6	B	NQ see ICB						P
Mercury			0.100	U	-0.119	B	0.100	U			CV
Nickel			1.4	B	see ICB						P
Potassium			21.5	B	NQ						P
Selenium			2.2	U							P
Silver			0.6	U							P
Sodium			159.5	U							P
Thallium			3.3	U							P
Vanadium			1.2	B	see PBLK						P
Zinc			5.2	U							P

GW24
29
19A

all Hg assoc

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Mercury			-0.117	B	See ICB						CV

all assoc

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-GW24-0309L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0903186

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	53.40	U	267.00	U			P
Antimony	2.40	U	38.52	B	100.0		P
Arsenic	6.43	B	20.72	B	222.2		P
Barium	67.03	B	68.49	B	2.2		P
Beryllium	0.42	U	2.10	U			P
Cadmium	0.64	U	3.20	U			P
Calcium	216513.00		221150.70		2.1		P
Chromium	7.17	B	14.54	B	102.8		P
Cobalt	1.60	U	8.00	U			P
Copper	3.66	B	18.11	B	394.8		P
Iron	107.33		292.79	B	172.8		P
Lead	1.40	U	7.00	U			P
Magnesium	8039.91		8136.72	B	1.2		P
Manganese	224.92		236.41		5.1		P
Nickel	15.04	B	21.52	B	43.1		P
Potassium	1716.00	B	1363.85	B	20.5	E	P
Selenium	2.86	B	11.00	U	100.0		P
Silver	0.62	U	3.10	U			P
Sodium	17558.97		17020.26	B	3.1		P
Thallium	3.30	U	20.07	B	100.0		P
Vanadium	1.02	B	4.81	B	371.6		P
Zinc	8.98	B	26.00	U	100.0		P

J/UJ

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

September 11, 2009

SDG #s 0907002, 0907003, 74008, R0903817
CompuChem, CT Labs, and Columbia Analytical Services, Inc.
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0907002, 0907003, 74008, R0903817. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles, 8270C semivolatiles (n-nitrosodiphenylamine only), 6850 for Perchlorate, 8330B for nitroguanidine, 8332 for nitroglycerine, 6010B for total and dissolved metals; and the EPA method 350.1 for ammonia. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable.

Sample ID	Lab ID	Matrix	VOA	SVOA	Perchlorate	Ammonia	TMetals	DMetals	NGL	NGU
YS06-EB01-063009	0907002-02	water	X				X	X	X	
YS06-FB01-063009	0907002-03	water	X				X		X	
YS06-GW16-0609	0907002-01	water	X				X	X	X	
YS06-TB01-063009	0907002-04	water	X							
YS07-EB01-070709	0907002-10	water	X	X	X	X			X	X
YS07-FB01-070809	0907002-12	water	X	X	X	X			X	X
YS07-EB01-070609	0907002-07	water							X	
YS07-GW01-0709	0907002-14	water							X	
YS07-GW02-0709	0907002-16	water							X	
YS07-GW03-0709	0907002-05	water							X	
YS07-GW04-0709	0907002-06	water							X	
YS07-GW05-0709	0907002-08	water	X	X	X	X			X	X
YS07-GW05P-0709	0907002-09	water	X	X	X	X			X	X
YS07-TB01-070709	0907002-11	water	X							
YS07-TB01-070809	0907002-13	water	X							
YS07-EB01-070809	0907002-15	water							X	
YS07-GW05-0709 MS	0907002-08MS	water	X						X	X
YS07-GW05-0709 MSD	0907002-08MSD	water	X						X	X

The following quality control samples were provided with this SDG: sample YS06-TB01-063009, YS07-TB01-070709 and YS07-TB01-070809-trip blanks; samples YS06-EB01-063009 and YS07-EB01-070709-equipment blanks; samples YS06-FB01-063309

and YS07-FB01-070809-field blanks; and sample YS07-GW05P-0709-field duplicate of sample YS07-GW05-0709.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

• Data Completeness	*
• Sample Condition	*
• Technical Holding Times	*
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	
• RL Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	*
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	*
• Identification/Quantitation	
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The initial calibrations exhibited low RRF values that required positive values to be estimated.

Blank contamination was noted in the QC blanks associated with samples in this batch. Qualifications were added to the data.

SVOA

No qualifications to the data were required.

Perchlorate

No qualifications to the data were required.

Nitroglycerin by 8332

No qualifications to the data were required.

Nitroguanidine by 8330B

No qualifications to the data were required.

Total & Dissolved Metals

Blank contamination was noted in the laboratory blanks associated with the samples in this SDG. Qualifications were added to the data.

The serial dilution analyses associated with the total and dissolved metals exhibited non-compliant %Ds for potassium. The analyte was flagged as estimated in all field samples.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Ammonia by 350.1

No qualifications to the data were required.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 6/30 and 7/6-8/09 and samples were received at the laboratory 7/1-13/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 7/01/09	acetone	0.028	all samples	L/R	ICL
	2-butanone	0.046			

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS06-TB01-063009	acetone	2.5 ug/L	2.5 ug/L	25 ug/L
YS06-FB01-063009	acetone	5.8	2.5	58
	chloroform	0.11J	0.5	0.55
	toluene	0.92	0.5	4.6
YS07-FB01-070809	acetone	22	2.5	220
	toluene	0.26J	0.5	1.3

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS06-EB01-063009	acetone	4.6	2.5	46
	chloroform	0.13J	0.5	0.65
	toluene	0.76	0.5	3.8
YS07-EB01-070709	acetone	18	2.5	180
	toluene	0.20J	0.5	1.0

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS06-GW16-0609, YS07-GW05-0709, YS07-GW05P-0709	acetone	B	BL
YS06-GW16-0609	toluene	B	BL
YS07-GW05-0709, YS07-GW05P-0709	chloroform	B	BL

Total and Dissolved Metals

Preparation blank contamination was noted. Qualification for some analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	arsenic	-5.003B ug/L	≤ 10X MDL (24 ug/L)	L/UL	BL
	cadmium	-0.766B ug/L	≤ 10X MDL (3 ug/L)	L/UL	BL
	copper	-1.101B ug/L	≤ 10X MDL (9 ug/L)	L/UL	BL
	lead	2.952B ug/L	14.76 ug/L	B	BL
	nickel	-3.238B ug/L	≤ 10X MDL (11 ug/L)	L/UL	BL
	silver	-0.708B ug/L	≤ 10X MDL (3 ug/L)	L/UL	BL
	thallium	-8.236 B ug/L	≤ 10X MDL (37 ug/L)	L/UL	BL
ICB/CCB – total metals	antimony	2.2B ug/L	11.0 ug/L	B	BL
YS06-EB01-063009	chromium	0.83B ug/L	4.15 ug/L	B	BL
	vanadium	0.56B ug/L	2.8 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS06-GW16-0609	arsenic	L/UL	BL
YS06-GW16-0609	cadmium	L/UL	BL
YS06-GW16-0609	copper	L/UL	BL
YS06-GW16-0609	lead	B	BL
YS06-GW16-0609	nickel	L/UL	BL
YS06-GW16-0609	silver	L/UL	BL
YS06-GW16-0609	thallium	L/UL	BL
YS06-GW16-0609	antimony	B	BL
YS06-GW16-0609	chromium	B	BL
YS06-GW16-0609	vanadium	B	BL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	lead	-1.9B	≤ 10X MDL (18 ug/L)	L/UL	BL
ICB/CCB – dissolved metals	arsenic	-3.0B ug/L	≤ 10X MDL (24 ug/L)	L/UL	BL
	cadmium	0.5B ug/L	2.5 ug/L	B	BL
YS06-EB01-063009 –dissolved	silver	0.41B ug/L	2.05 ug/L	B	BL
	zinc	12.3B ug/L	61.5 ug/L	B	BL
YS06-FB01-063009	vanadium	0.56B ug/L	2.8 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS06-GW16-0609	lead	L/UL	BL
YS06-GW16-0609	arsenic	L/UL	BL
YS06-GW16-0609	cadmium	B	BL
YS06-GW16-0609	silver	B	BL
YS06-GW16-0609	zinc	B	BL
YS06-GW16-0609	vanadium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

Serial Dilution

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's for the analyte potassium in both the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS06-GW16-0609	potassium	all field samples	12.9, 23.6	J/UJ	SD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
all samples	acetone 2-butanone	+/-	L/R	ICL
YS06-GW16-0609, YS07-GW05-0709, YS07-GW05P-0709	acetone	+	B	BL
YS06-GW16-0609	toluene	+	B	BL
YS07-GW05-0709, YS07-GW05P-0709	chloroform	+	B	BL

SVOA

Sample ID	Compound	Results	Q Flag	Q code
No qualifications				

Nitroguanidine

Sample ID	Compound	Results	Q Flag	Q code
No qualifications				

Nitroglycerine

Sample ID	Compound	Results	Q Flag	Q code
No qualifications				

Perchlorate

Sample ID	Compound	Results	Q Flag	Q code
No qualifications				

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-GW16-0609	arsenic	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	cadmium	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	copper	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	lead	+ up to action limit	B	BL
YS06-GW16-0609	nickel	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	silver	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	thallium	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	antimony	+ up to action limit	B	BL
YS06-GW16-0609	chromium	+ up to action limit	B	BL
YS06-GW16-0609	vanadium	+ up to action limit	B	BL
all total metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-GW16-0609	lead	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	arsenic	+/- up to 10X MDL	L/UL	BL
YS06-GW16-0609	cadmium	+ up to action limit	B	BL
YS06-GW16-0609	silver	+ up to action limit	B	BL
YS06-GW16-0609	zinc	+ up to action limit	B	BL
YS06-GW16-0609	vanadium	+ up to action limit	B	BL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Ammonia

Sample ID	Parameter	Results	Q Flag	Q code
No qualifications				

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
QL	Quantitation Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0271

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	4.6		L,ICL
79-20-9	Methyl acetate	0.65		
75-09-2	Methylene Chloride	0.86		
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	9.7		L,ICL
67-66-3	Chloroform	0.13	J	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	1.3		
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.76		
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

LM 090209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0271

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0371

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.8	LICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.1	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.5	LICL
67-66-3	Chloroform	0.11	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.5	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.92	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 07/02/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0371

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW16-0609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0171

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.25	J
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.16	~~J~~ B, BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WF 070209

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW16-0609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0171

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.25	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-04R71

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	~~J~~ L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

7/8/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-04R71

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1071

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	18	LJCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RJCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.91	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.20	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1071

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-FB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1271

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	22		LICL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.31	J	
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	4.3		LICL
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	1.1		
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.26	J	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-FB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1271

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0871

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.7	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.6	B, PR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.11	J
75-34-3	1,1-Dichloroethane	7.0	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ P, ICL
67-66-3	Chloroform	0.50	B, PR
71-55-6	1,1,1-Trichloroethane	3.4	
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.32	J
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.21	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.11	J

FORM I VOA

LW 07/20/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0871

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0971

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.9	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.8	B, PR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.11	J
75-34-3	1,1-Dichloroethane	7.5	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R, FCL
67-66-3	Chloroform	0.47	J B, PR
71-55-6	1,1,1-Trichloroethane	3.6	
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.32	J
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.17	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 090709

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0971

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	~~J~~ LICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

LM 090709

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1371

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	~~J~~ L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

AMENDED DATA

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030

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1371

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

AMENDED DATA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MS171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.2	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	6.1	
75-00-3	Chloroethane	6.3	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	6.8	
75-15-0	Carbon disulfide	6.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.1	
67-64-1	Acetone	28	
79-20-9	Methyl acetate	7.1	
75-09-2	Methylene Chloride	5.6	
156-60-5	trans-1,2-Dichloroethene	5.8	
1634-04-4	Methyl-tert-butyl ether	6.0	
75-34-3	1,1-Dichloroethane	13	
156-59-2	cis-1,2-Dichloroethene	6.0	
78-93-3	2-butanone	30	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	8.8	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	6.2	
107-06-2	1,2-Dichloroethane	6.5	
79-01-6	Trichloroethene	5.5	
78-87-5	1,2-Dichloropropane	7.1	
75-27-4	Bromodichloromethane	6.3	
10061-01-5	cis-1,3-Dichloropropene	6.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.5	
10061-02-6	trans-1,3-Dichloropropene	6.2	
79-00-5	1,1,2-Trichloroethane	5.8	
127-18-4	Tetrachloroethene	4.2	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MS171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.5	
108-90-7	Chlorobenzene	5.4	
100-41-4	Ethylbenzene	5.2	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.4	
100-42-5	Styrene	5.4	
75-25-2	Bromoform	4.6	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	6.2	
541-73-1	1,3-Dichlorobenzene	5.1	
106-46-7	1,4-Dichlorobenzene	5.0	
95-50-1	1,2-Dichlorobenzene	5.1	
96-12-8	1,2-Dibromo-3-Chloropropane	5.6	
120-82-1	1,2,4-Trichlorobenzene	4.2	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	17	
110-82-7	Cyclohexane	4.9	
108-87-2	Methylcyclohexane	4.9	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MSD171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.3	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	6.3	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	7.3	
75-15-0	Carbon disulfide	6.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.3	
67-64-1	Acetone	29	
79-20-9	Methyl acetate	6.7	
75-09-2	Methylene Chloride	5.7	
156-60-5	trans-1,2-Dichloroethene	5.9	
1634-04-4	Methyl-tert-butyl ether	6.2	
75-34-3	1,1-Dichloroethane	13	
156-59-2	cis-1,2-Dichloroethene	6.0	
78-93-3	2-butanone	30	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	8.9	
56-23-5	Carbon Tetrachloride	5.5	
71-43-2	Benzene	6.3	
107-06-2	1,2-Dichloroethane	6.5	
79-01-6	Trichloroethene	5.7	
78-87-5	1,2-Dichloropropane	7.1	
75-27-4	Bromodichloromethane	6.3	
10061-01-5	cis-1,3-Dichloropropene	6.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.7	
10061-02-6	trans-1,3-Dichloropropene	6.3	
79-00-5	1,1,2-Trichloroethane	5.8	
127-18-4	Tetrachloroethene	4.6	
591-78-6	2-hexanone	29	
124-48-1	Dibromochloromethane	5.6	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MSD171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.6	
108-90-7	Chlorobenzene	5.7	
100-41-4	Ethylbenzene	5.5	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.7	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	4.8	
98-82-8	Isopropyl Benzene	5.3	
79-34-5	1,1,2,2-Tetrachloroethane	6.3	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.3	
95-50-1	1,2-Dichlorobenzene	5.3	
96-12-8	1,2-Dibromo-3-Chloropropane	6.0	
120-82-1	1,2,4-Trichlorobenzene	4.5	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.3	

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0
1-070709

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 925 (g/mL) ML Lab File ID: 0907002-10A62

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:07/14/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/16/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-30-6	N-Nitrosodiphenylamine (1)	5.4	U

(1) - Cannot be separated from Diphenylamine

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-FB0 1-070809

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 950 (g/mL) ML Lab File ID: 0907002-12A62

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:07/14/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/16/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-30-6	N-Nitrosodiphenylamine (1)	5.3	U

(1) - Cannot be separated from Diphenylamine

09020901

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 975 (g/mL) ML Lab File ID: 0907002-08A62

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:07/14/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/16/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-30-6	N-Nitrosodiphenylamine_(1)__	5.1	U

(1) - Cannot be separated from Diphenylamine

09102

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 0907002-09A62

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:07/14/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/16/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-30-6	N-Nitrosodiphenylamine_(1)	5.0	U

(1) - Cannot be separated from Diphenylamine

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9071338-MS

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 9071338-MSA62

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:07/14/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/16/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-30-6	N-Nitrosodiphenylamine (1)	36	

(1) - Cannot be separated from Diphenylamine

FORM 1
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8270C

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9071338-MSD

Sample wt/vol: 1000 (g/mL) ML Lab File ID: 9071338-MSDA62

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: _____ decanted: (Y/N)___ Date Extracted:07/14/09

Concentrated Extract Volume: 1000(uL) Date Analyzed: 07/16/09

Injection Volume: 2.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
86-30-6	N-Nitrosodiphenylamine (1)	38	

(1) - Cannot be separated from Diphenylamine

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Compuchem	**Service Request:**	R0903817
Project:	CTO-166 Yorktown NWS	**Date Collected:**	7/ 7/09 1130
Sample Matrix:	Water	**Date Received:**	7/ 9/09
Sample Name:	YS07-GW05-0709	**Units:**	µg/L
Lab Code:	R0903817-001	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	73		10	1.3	50	7/14/09	7/15/09 11:47	91243	161390	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Compuchem	**Service Request:**	R0903817
Project:	CTO-166 Yorktown NWS	**Date Collected:**	7/ 7/09 1200
Sample Matrix:	Water	**Date Received:**	7/ 9/09
Sample Name:	YS07-GW05P-0709	**Units:**	µg/L
Lab Code:	R0903817-002	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	76		10	1.3	50	7/14/09	7/15/09 12:52	91243	161390	

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Compuchem	**Service Request:**	R0903817
Project:	CTO-166 Yorktown NWS	**Date Collected:**	7/ 7/09 1420
Sample Matrix:	Water	**Date Received:**	7/ 9/09
Sample Name:	YS07-EB01-070709	**Units:**	µg/L
Lab Code:	R0903817-003	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.20	U	0.20	0.027	1	7/14/09	7/14/09 19:52	91243	161390	

Comments:

Printed 8/18/09 11:07
\\nflow2\Starlims\LimsReps\AnalyticalReport.rpt

Form 1A

Amended Data

SuperSet Reference: 09-0909112522 rev 00

8/20/09

11

00044

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Compuchem	**Service Request:**	R0903817
Project:	CTO-166 Yorktown NWS	**Date Collected:**	7/ 8/09 1430
Sample Matrix:	Water	**Date Received:**	7/14/09
Sample Name:	YS07-FB01-070809	**Units:**	µg/L
Lab Code:	R0903817-004	**Basis:**	NA

Perchlorates in Water, Soils, Solid Wastes Using High Performance LC/Electrospray/Mass Spectrometry

Analytical Method: 6850
Prep Method: Method

Analyte Name	Result	Q	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Extraction Lot	Analysis Lot	Note
Perchlorate	0.20	U	0.20	0.027	1	7/17/09	7/17/09 13:42	91560	161901	

Comments:

Printed 8/18/09 11:07
\\Willow2\Starlims\LimsReps\AnalyticalReport.rpt

Form 1A

Amended Data

SuperSet Reference: 09-00001 r2522 rev 00

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS07-GW05-0709

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166 YORKTOWN NWS
Matrix:	GROUND WATER	SDG No.:	74008
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	694817
% Solids:		Date Received:	07/09/2009
Conc. Extract Vol:	5.00 (mL)	Date Extracted:	07/14/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	07/27/2009 13:27	84	U	26	84

JLC 9809

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS07-GW05P-0709

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166 YORKTOWN NWS
Matrix:	GROUND WATER	SDG No.:	74008
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	694818
% Solids:		Date Received:	07/09/2009
Conc. Extract Vol:	5.00 (mL)	Date Extracted:	07/14/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	07/27/2009 13:55	84	U	26	84

JLC 9809

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS07-EB01-070709

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166 YORKTOWN NWS
Matrix:	GROUND WATER	SDG No.:	74008
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	694819
% Solids:		Date Received:	07/09/2009
Conc. Extract Vol:	5.00 (mL)	Date Extracted:	07/14/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	07/27/2009 14:04	84	U	26	84

JAC 9809

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS07-FB01-070809

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166 YORKTOWN NWS
Matrix:	GROUND WATER	SDG No.:	74008
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	695685
% Solids:		Date Received:	07/10/2009
Conc. Extract Vol:	5.00 (mL)	Date Extracted:	07/14/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	07/27/2009 14:13	84	U	26	84

JLC 7809

CT Laboratories

3C

WATER SEMIVOLATILE MATRIX SPIKE RECOVERY

Sample Description: YS07-GW05-0709

Lab Name: CT Laboratories | Contract: COMPUCHEM-CTO-166 YORKTOWN NWS

Matrix: GROUND WATER | SDG No.: 74008

Analytical Method: EPA 8330 | Concentration Units: ug/L

Analysis Run #: 59617 | Sample No.: 696813 | Parent Sample No.: 694817

Analyte	Analysis Date/Time	Control Limit (%R)	Spike Result	Parent Result	Spike Amount	%R
Nitroguanidine	07/27/2009 13:36	50-150	992	0	1000	99

Spike Recovery: 0 out of 1 outside QC limits

CT Laboratories

3C

WATER SEMIVOLATILE MATRIX DUPLICATE SPIKE RECOVERY

Sample Description: **YS07-GW05-0709**

Lab Name: CT Laboratories | Contract: COMPUCHEM-CTO-166 YORKTOWN NWS

Matrix: GROUND WATER | SDG No.: 74008

Analytical Method: EPA 8330 | Concentration Units: ug/L

Analysis Run #: 59617 | Sample No.: 696814 | Parent Sample No.: 696813

Analyte	Analysis Date/Time	Spike Result	Spike Amount	%R	%RPD	Control Limits (%R)	Control Limits (%RPD)
Nitroguanidine	07/27/2009 13:45	956	1000	96	4	50-150	30

RPD or Spike Recovery: 0 out of 1 outside QC limits

7/28/09

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS06-EB0
1-063009

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/01/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/06/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS06-FB0
1-063009

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/01/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/06/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JLC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS06-GW16-0609

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/01/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/06/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

054

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-EB0
1-070609

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-07

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/07/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JMC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-EB0
1-070709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/08/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-EB0
1-070809

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-15

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/09/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-FB0
1-070809

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/09/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JMC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW01-0709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-14

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/09/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW02-0709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-16

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N) ___ Date Received: 07/09/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted: 07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW03-0709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-05

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/07/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JQC 9/8/09

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW04-0709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-06

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/07/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/08/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/08/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	U

JLC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9071307-MS1

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/08/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	18	

JAC 9809

FORM I PEST

1D

GC EXTRACTABLE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Contract: 8332

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9071307-MSD1

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: _____

% Moisture: _____ decanted: (Y/N)___ Date Received: 07/08/09

Extraction: (SepF/Cont/Sonc) SOLIDPHASE Date Extracted:07/13/09

Concentrated Extract Volume: 10000(ul) Date Analyzed: 07/17/09

Injection Volume: 10.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: ___ Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
55-63-0	Nitroglycerin	16	

JBC 9809

FORM I PEST

066

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-063009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix (soil/water): WATER Lab Sample ID: 0907002-02

Level (low/med): LOW Date Received: 7/1/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	73.5	~~B~~	J	P
7440-36-0	Antimony	2.2	~~B~~	J	P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	58.5	~~B~~	J	P
7440-47-3	Chromium	0.83	~~B~~	J	P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	3.6	~~B~~	J	P
7439-89-6	Iron	167			P
7439-92-1	Lead	5.8			P
7439-95-4	Magnesium	48.6	~~B~~	J	P
7439-96-5	Manganese	1.9	~~B~~	J	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	25.8	~~B~~	~~E~~ J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	4420	~~B~~	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	0.56	~~B~~	J	P
7440-66-6	Zinc	157			P

JAC 9809

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-FB01-063009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix (soil/water): WATER Lab Sample ID: 0907002-03

Level (low/med): LOW Date Received: 7/1/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	1.9	~~B~~	J	P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	2.6	~~B~~	J	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U	~~E~~	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	614	~~B~~	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	20.0	U		P

JAC 9805

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW16-0609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix (soil/water): WATER Lab Sample ID: 0907002-01

Level (low/med): LOW Date Received: 7/1/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	500			P
7440-36-0	Antimony	2.3	~~U~~	B BL	P
7440-38-2	Arsenic	10.0	~~U~~	UL BL	P
7440-39-3	Barium	49.6	~~U~~	~~B~~ BL	P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	~~U~~	UL BL	P
7440-70-2	Calcium	126000			P
7440-47-3	Chromium	1.4	~~U~~	B BL	P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	~~U~~	UL BL	P
7439-89-6	Iron	1110			P
7439-92-1	Lead	5.2		B BL	P
7439-95-4	Magnesium	4710	~~U~~	J	P
7439-96-5	Manganese	148			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	~~U~~	UL BL	P
7440-09-7	Potassium	1160	~~U~~	~~E~~ J SD	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	~~U~~	UL BL	P
7440-23-5	Sodium	25200			P
7440-28-0	Thallium	10.0	~~U~~	UL BL	P
7440-62-2	Vanadium	1.9	~~U~~	B BL	P
7440-66-6	Zinc	48.3			P

XICOM JHC 9809

JHC 9809

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-GW16-0609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907003

Matrix (soil/water): WATER Lab Sample ID: 0907003-01

Level (low/med): LOW Date Received: 7/1/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	133	~~B~~	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	~~U~~	UL BL	P
7440-39-3	Barium	41.4	~~B~~	J	P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	0.56	~~B~~	B BL	P
7440-70-2	Calcium	113000			P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	0.89	~~B~~	J	P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	299			P
7439-92-1	Lead	3.0	~~U~~	UL BL	P
7439-95-4	Magnesium	4600	~~B~~	J	P
7439-96-5	Manganese	133			P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	2.7	~~B~~	J	P
7440-09-7	Potassium	1300	~~B~~	J SD	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	0.38	~~B~~	B BL	P
7440-23-5	Sodium	25000			P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	1.1	~~B~~	B BL	P
7440-66-6	Zinc	7.0	~~B~~	B BL	P

9/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-063009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907003

Matrix (soil/water): WATER Lab Sample ID: 0907003-02

Level (low/med): LOW Date Received: 7/1/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	96.9	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	0.77	~~B~~	J	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	~~U~~	U	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	0.41	~~B~~	J	P
7440-23-5	Sodium	191	~~B~~	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	12.3	~~B~~	~~B~~ BU	P

X1 corr JAC 91009

J X1 corr JAC 91009

JAC 91009

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

AMENDED DATA

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	07/28/2009 11:47

YS07-GW05-0709

0907002-08 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Ammonia as N	ND	0.10	mg/L	1	9071331	07/13/2009 16:24	07/22/2009 16:00	EPA 350.1 U

JAC 9809

CompuChem

A Division Of

Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	07/28/2009 11:47

YS07-GW05P-0709

0907002-09 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	
COMPUCHEM									
WET CHEMISTRY PARAMETERS									
Ammonia as N	ND	0.10	mg/L	1	9071331	07/13/2009 16:24	07/22/2009 16:01	EPA 350.1	U

7/28/09

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	07/28/2009 11:47

YS07-EB01-070709

0907002-10 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Ammonia as N	0.07	0.10	mg/L	1	9071331	07/13/2009 16:24	07/22/2009 16:02	EPA 350.1 J

JAC 9809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	07/28/2009 11:47

YS07-FB01-070809
0907002-12 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	
COMPUCHEM									
WET CHEMISTRY PARAMETERS									
Ammonia as N	ND	0.10	mg/L	1	9071331	07/13/2009 16:24	07/22/2009 16:03	EPA 350.1	U

JAC 9809

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 6/30, 7/6-8/09/09
Received Date: 7/1-9/09
Analysis Dates: 7/2-9/09

Cooler Temps: 0.6-4.3°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

No contamination was exhibited in the method blanks. The associated QC blanks for these samples were: YS06-TB01-063009- trip blank; YS06-FB01-063009 and YS07-FB01-070809- field blanks; YS06-EB01-063009 and YS07-EB01-070709- equipment blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS06-TB01-063009	acetone	2.5	2.5	25
YS06-FB01-063009	acetone	5.8	2.5	58
	methylene chloride	1.1	0.5	11
	2-butanone	4.5	2.5	45
	chloroform	0.11J	0.5	0.55
	1,2-dichloroethane	1.5	0.5	7.5
	toluene	0.92	0.5	4.6
YS07-FB01-070809	acetone	22	2.5	220
	methylene chloride	0.31J	0.5	3.1
	2-butanone	4.3	2.5	43
	1,2-dichloroethane	1.1	0.5	5.5
	toluene	0.26J	0.5	1.3
YS06-EB01-063009	acetone	4.6	2.5	46
	methyl acetate	0.65	0.5	3.25
	methylene chloride	0.86	0.5	8.6
	2-butanone	9.7	2.5	97
	chloroform	0.13J	0.5	0.65
	1,2-dichloroethane	1.3	0.5	6.5
	toluene	0.76	0.5	3.8
YS07-EB01-070709	acetone	18	2.5	180
	methylene chloride	0.12J	0.5	1.2
	1,2-dichloroethane	0.91	0.5	4.55
	toluene	0.20J	0.5	1.0

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS06-GW16-0609, YS07-GW05-0709, YS07-GW05P-0709	acetone	B	BL
YS06-GW16-0609	toluene	B	BL
YS07-GW05-0709, YS07-GW05P-0709	chloroform	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS07-GW05-0709—the MS and MSD exhibited high recoveries for several compounds however no positive results were exhibited for these compounds therefore no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for sample YS07-GW05-0709—no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascitti **Date:** 9/2/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G01002-TUN171 BFB Injection Date: 07/01/09

Instrument ID: 5972HP71 BFB Injection Time: 1624

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.6
75	30.0 - 60.0% of mass 95	49.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	78.4
175	5.0 - 9.0% of mass 174	3.9 (5.0)1
176	95.0 - 101.0% of mass 174	77.1 (98.3)1
177	5.0 - 9.0% of mass 176	5.2 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9G01002-CAL	9G01002-CAL271	07/01/09	1725
02	VSTD0.5	9G01002-CAL	9G01002-CAL171	07/01/09	1753
03	VSTD040	9G01002-CAL	9G01002-CAL671	07/01/09	1821
04	VSTD020	9G01002-CAL	9G01002-CAL571	07/01/09	1850
05	VSTD010	9G01002-CAL	9G01002-CAL471	07/01/09	1918
06	VSTD005	9G01002-CAL	9G01002-CAL3R7	07/01/09	1946
07					
08					
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18					
19					
20					
21					
22					

FORM V VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date(s): 07/01/09 07/01/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1725 1946

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.46708133	5.524	15.000	
Chloromethane	AVRG		0.36266535	4.378	15.000	
Vinyl Chloride	AVRG		0.26983208	5.069	30.000	
Bromomethane	LINR	0.06930498	6.47599064	0.9998809	0.9900000	
Chloroethane	AVRG		0.11371841	6.438	15.000	
Trichlorofluoromethane	AVRG		0.45420203	7.806	15.000	
1,1-Dichloroethene	AVRG		0.25161283	6.442	30.000	
Carbon disulfide	AVRG		1.13339028	6.147	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.18315099	9.162	15.000	
Acetone	AVRG		0.02849264	13.574	15.000	L/R
Methyl acetate	AVRG		0.20275063	6.440	15.000	
Methylene Chloride	LINR	-0.1289158	3.86592269	0.9996020	0.9900000	
trans-1,2-Dichloroethene	AVRG		0.28730886	6.946	15.000	
Methyl-tert-butyl ether	AVRG		0.43245580	8.128	15.000	
1,1-Dichloroethane	AVRG		0.53626542	6.007	15.000	
cis-1,2-Dichloroethene	AVRG		0.28787180	5.845	15.000	
2-Butanone	AVRG		0.04600564	7.992	15.000	L/R
Chloroform	AVRG		0.53849334	5.875	30.000	
1,1,1-Trichloroethane	AVRG		0.46097292	6.314	15.000	
Carbon Tetrachloride	AVRG		0.40592645	6.543	15.000	
Benzene	AVRG		1.07369734	5.481	15.000	
1,2-Dichloroethane	AVRG		0.26862758	7.794	15.000	
Trichloroethene	AVRG		0.27784211	6.260	15.000	
1,2-Dichloropropane	AVRG		0.24113722	10.239	30.000	
Bromodichloromethane	AVRG		0.35652425	6.344	15.000	
cis-1,3-Dichloropropene	AVRG		0.38361742	7.228	15.000	
4-Methyl-2-pentanone	AVRG		0.16928751	8.139	15.000	
Toluene	AVRG		0.98056953	6.173	30.000	
trans-1,3-Dichloropropene	AVRG		0.47884551	7.297	15.000	
1,1,2-Trichloroethane	AVRG		0.20206939	6.199	15.000	
Tetrachloroethene	AVRG		0.33834092	5.404	15.000	
2-hexanone	AVRG		0.11387851	7.885	15.000	
Dibromochloromethane	AVRG		0.30631119	5.097	15.000	
1,2-Dibromoethane	AVRG		0.22123848	5.862	15.000	
Chlorobenzene	AVRG		0.95246995	5.072	15.000	
Ethylbenzene	AVRG		0.52132228	5.555	30.000	
m,p-Xylene	AVRG		0.65322997	5.794	15.000	
o-Xylene	AVRG		0.60401191	5.350	15.000	
Styrene	AVRG		0.99485057	4.768	15.000	
Bromoform	AVRG		0.15661938	7.725	15.000	
Isopropyl Benzene	AVRG		1.76131640	5.217	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.55378769	7.462	15.000	
1,3-Dichlorobenzene	AVRG		1.58583546	5.400	15.000	
1,4-Dichlorobenzene	AVRG		1.56221749	5.572	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G02001-TUN171 BFB Injection Date: 07/02/09

Instrument ID: 5972HP71 BFB Injection Time: 0931

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.6
75	30.0 - 60.0% of mass 95	50.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.1
175	5.0 - 9.0% of mass 174	4.1 (5.2)1
176	95.0 - 101.0% of mass 174	77.4 (97.8)1
177	5.0 - 9.0% of mass 176	4.7 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G02002-CCV	9G02001-CCV1R7	07/02/09	1047
02	VBLKJH	9070206-BLK	9070206-BLK171	07/02/09	1125
03	VJHLCS	9070206-BS1	9070206-BS171	07/02/09	1208
04	VJHLCSD	9070206-BSD	9070206-BSD171	07/02/09	1236
05	YS06-FB01-063009	0907002-03	0907002-0371	07/02/09	1332
06	YS06-EB01-063009	0907002-02	0907002-0271	07/02/09	1400
07	YS06-GW16-0609	0907002-01	0907002-0171	07/02/09	1429
08					
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22					

FORM V VOA

AMENDED DATA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/02/09 Time: 1047

Lab File ID: 9G02001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.4670800	0.4614802	0.4614802	0.001	-1.20	90.00	AVRG
Chloromethane	0.3626600	0.3181102	0.3181102	0.1	-12.28	90.00	AVRG
Vinyl Chloride	0.2698300	0.2679180	0.2679180	0.001	-0.71	20.00	AVRG
Bromomethane	124.93865	125.00000	0.1436389	0.001	-0.05	90.00	LINR
Chloroethane	0.1137200	0.1183110	0.1183110	0.001	4.04	90.00	AVRG
Trichlorofluoromethane	0.4542000	0.4753109	0.4753109	0.001	4.65	90.00	AVRG
1,1-Dichloroethene	0.2516100	0.2665132	0.2665132	0.001	5.92	20.00	AVRG
Carbon disulfide	1.1333900	1.1870477	1.1870477	0.001	4.73	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1831500	0.1937731	0.1937731	0.001	5.80	90.00	AVRG
Acetone	0.0284900	0.0285470	0.0285470	0.001	0.20	90.00	AVRG
Methyl acetate	0.2027500	0.2380218	0.2380218	0.001	17.40	90.00	AVRG
Methylene Chloride	122.64002	125.00000	0.2871335	0.001	-1.89	90.00	LINR
ns-1,2-Dichloroethene	0.2873100	0.2944275	0.2944275	0.001	2.48	90.00	AVRG
thyl-tert-butyl ether	0.4324500	0.4941503	0.4941503	0.001	14.27	90.00	AVRG
1,1-Dichloroethane	0.5362600	0.5549381	0.5549381	0.1	3.48	90.00	AVRG
cis-1,2-Dichloroethene	0.2878700	0.2989058	0.2989058	0.001	3.83	90.00	AVRG
2-butanone	0.0460000	0.0520030	0.0520030	0.001	13.05	90.00	AVRG
Chloroform	0.5384900	0.5560974	0.5560974	0.001	3.27	20.00	AVRG
1,1,1-Trichloroethane	0.4609700	0.4759572	0.4759572	0.001	3.25	90.00	AVRG
Carbon Tetrachloride	0.4059300	0.4210093	0.4210093	0.001	3.71	90.00	AVRG
Benzene	1.0737000	1.1211378	1.1211378	0.001	4.42	90.00	AVRG
1,2-Dichloroethane	0.2686300	0.2883817	0.2883817	0.001	7.35	90.00	AVRG
Trichloroethene	0.2778400	0.2933150	0.2933150	0.001	5.57	90.00	AVRG
1,2-Dichloropropane	0.2411400	0.2651467	0.2651467	0.001	9.96	20.00	AVRG
Bromodichloromethane	0.3565200	0.3807320	0.3807320	0.001	6.79	90.00	AVRG
cis-1,3-Dichloropropene	0.3836200	0.4179629	0.4179629	0.001	8.95	90.00	AVRG
4-Methyl-2-pentanone	0.1692900	0.1920213	0.1920213	0.001	13.43	90.00	AVRG
Toluene	0.9805700	0.9744065	0.9744065	0.001	-0.63	20.00	AVRG
trans-1,3-Dichloropropene	0.4788400	0.5202369	0.5202369	0.001	8.64	90.00	AVRG
1,1,2-Trichloroethane	0.2020700	0.2212931	0.2212931	0.001	9.51	90.00	AVRG
Tetrachloroethene	0.3383400	0.3359341	0.3359341	0.001	-0.71	90.00	AVRG
2-hexanone	0.1138800	0.1296438	0.1296438	0.001	13.84	90.00	AVRG
Dibromochloromethane	0.3063100	0.3251970	0.3251970	0.001	6.16	90.00	AVRG
1,2-Dibromoethane	0.2212400	0.2381472	0.2381472	0.001	7.64	90.00	AVRG
Chlorobenzene	0.9524700	0.9767850	0.9767850	0.3	2.55	90.00	AVRG
Ethylbenzene	0.5213200	0.5262966	0.5262966	0.001	0.95	20.00	AVRG
m,p-Xylene	0.6532300	0.6595862	0.6595862	0.001	0.97	90.00	AVRG
o-Xylene	0.6040100	0.6230579	0.6230579	0.001	3.15	90.00	AVRG
Styrene	0.9948500	1.0487918	1.0487918	0.001	5.42	90.00	AVRG
Bromoform	0.1566200	0.1696737	0.1696737	0.1	8.33	90.00	AVRG
Isopropyl Benzene	1.7613200	1.7841993	1.7841993	0.001	1.30	90.00	AVRG
2,2-Tetrachloroethane	0.5537900	0.5874602	0.5874602	0.3	6.08	90.00	AVRG

L/R

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G06001-TUN171 BFB Injection Date: 07/06/09

Instrument ID: 5972HP71 BFB Injection Time: 1049

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.9
75	30.0 - 60.0% of mass 95	53.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	72.1
175	5.0 - 9.0% of mass 174	5.6 (7.8)1
176	95.0 - 101.0% of mass 174	71.5 (99.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G06001-CCV	9G06001-CCV1R7	07/06/09	1152
02	VBLKJI	9070612-BLK	9070612-BLK171	07/06/09	1228
03	VJILCS	9070612-BS1	9070612-BS171	07/06/09	1307
04	VJILCSD	9070612-BSD	9070612-BSD171	07/06/09	1335
05	YS06-TB01-063009	0907002-04	0907002-04R71	07/06/09	1403
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FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/06/09 Time: 1152

Lab File ID: 9G06001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.4670800	0.3684902	0.3684902	0.001	-21.11	90.00	AVRG	
Chloromethane	0.3626600	0.2829618	0.2829618	0.1	-21.98	90.00	AVRG	
Vinyl Chloride	0.2698300	0.2351095	0.2351095	0.001	-12.87	20.00	AVRG	
Bromomethane	120.18410	125.00000	0.1377655	0.001	-3.85	90.00	LINR	
Chloroethane	0.1137200	0.1058385	0.1058385	0.001	-6.93	90.00	AVRG	
Trichlorofluoromethane	0.4542000	0.4332877	0.4332877	0.001	-4.60	90.00	AVRG	
1,1-Dichloroethene	0.2516100	0.2318219	0.2318219	0.001	-7.86	20.00	AVRG	
Carbon disulfide	1.1333900	1.0732132	1.0732132	0.001	-5.31	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1831500	0.1679331	0.1679331	0.001	-8.31	90.00	AVRG	
Acetone	0.0284900	0.0243326	0.0243326	0.001	-14.59	90.00	AVRG	4R
Methyl acetate	0.2027500	0.2095150	0.2095150	0.001	3.34	90.00	AVRG	
Methylene Chloride	105.11337	125.00000	0.2508645	0.001	-15.91	90.00	LINR	
ns-1,2-Dichloroethene	0.2873100	0.2621677	0.2621677	0.001	-8.75	90.00	AVRG	
thyl-tert-butyl ether	0.4324500	0.4087787	0.4087787	0.001	-5.47	90.00	AVRG	
1,1-Dichloroethane	0.5362600	0.5298482	0.5298482	0.1	-1.20	90.00	AVRG	
cis-1,2-Dichloroethene	0.2878700	0.2650422	0.2650422	0.001	-7.93	90.00	AVRG	
2-butanone	0.0460000	0.0439571	0.0439571	0.001	-4.44	90.00	AVRG	4R
Chloroform	0.5384900	0.5015173	0.5015173	0.001	-6.86	20.00	AVRG	
1,1,1-Trichloroethane	0.4609700	0.4195811	0.4195811	0.001	-8.98	90.00	AVRG	
Carbon Tetrachloride	0.4059300	0.3717907	0.3717907	0.001	-8.41	90.00	AVRG	
Benzene	1.0737000	1.0235654	1.0235654	0.001	-4.67	90.00	AVRG	
1,2-Dichloroethane	0.2686300	0.2632661	0.2632661	0.001	-2.00	90.00	AVRG	
Trichloroethene	0.2778400	0.2491271	0.2491271	0.001	-10.33	90.00	AVRG	
1,2-Dichloropropane	0.2411400	0.2491116	0.2491116	0.001	3.30	20.00	AVRG	
Bromodichloromethane	0.3565200	0.3307432	0.3307432	0.001	-7.23	90.00	AVRG	
cis-1,3-Dichloropropene	0.3836200	0.3632859	0.3632859	0.001	-5.30	90.00	AVRG	
4-Methyl-2-pentanone	0.1692900	0.1623093	0.1623093	0.001	-4.12	90.00	AVRG	
Toluene	0.9805700	0.8610876	0.8610876	0.001	-12.18	20.00	AVRG	
trans-1,3-Dichloropropene	0.4788400	0.4392386	0.4392386	0.001	-8.27	90.00	AVRG	
1,1,2-Trichloroethane	0.2020700	0.1788519	0.1788519	0.001	-11.49	90.00	AVRG	
Tetrachloroethene	0.3383400	0.2676247	0.2676247	0.001	-20.90	90.00	AVRG	
2-hexanone	0.1138800	0.1073679	0.1073679	0.001	-5.72	90.00	AVRG	
Dibromochloromethane	0.3063100	0.2704119	0.2704119	0.001	-11.72	90.00	AVRG	
1,2-Dibromoethane	0.2212400	0.1936642	0.1936642	0.001	-12.46	90.00	AVRG	
Chlorobenzene	0.9524700	0.8191287	0.8191287	0.3	-14.00	90.00	AVRG	
Ethylbenzene	0.5213200	0.4440898	0.4440898	0.001	-14.81	20.00	AVRG	
m,p-Xylene	0.6532300	0.5599344	0.5599344	0.001	-14.28	90.00	AVRG	
o-Xylene	0.6040100	0.5210066	0.5210066	0.001	-13.74	90.00	AVRG	
Styrene	0.9948500	0.8564112	0.8564112	0.001	-13.92	90.00	AVRG	
Bromoform	0.1566200	0.1263722	0.1263722	0.1	-19.31	90.00	AVRG	
Isopropyl Benzene	1.7613200	1.4895453	1.4895453	0.001	-15.43	90.00	AVRG	
2,2-Tetrachloroethane	0.5537900	0.5312359	0.5312359	0.3	-4.07	90.00	AVRG	

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

ab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/06/09 Time: 1152

Lab File ID: 9G06001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.5858400	1.3585828	1.3585828	0.001	-14.33	90.00	AVRG
1,4-Dichlorobenzene	1.5622200	1.3202880	1.3202880	0.001	-15.49	90.00	AVRG
1,2-Dichlorobenzene	1.2610600	1.0939336	1.0939336	0.001	-13.25	90.00	AVRG
1,2-Dibromo-3-Chloropropane	0.0811800	0.0746788	0.0746788	0.001	-8.01	90.00	AVRG
1,2,4-Trichlorobenzene	0.8443400	0.6634374	0.6634374	0.001	-21.42	90.00	AVRG
1,2-Dichloroethene (total)	0.2875900	0.2636049	0.2636049	0.001	-8.34	90.00	AVRG
Xylene (total)	0.6040100	0.5210066	0.5210066	0.001	-13.74	90.00	AVRG
Cyclohexane	0.4152000	0.3656002	0.3656002	0.001	-11.95	90.00	AVRG
Methylcyclohexane	0.4591200	0.4319634	0.4319634	0.001	-5.91	90.00	AVRG
Dibromofluoromethane	110.00681	125.00000	0.2427056	0.001	-11.99	90.00	LINR
1,2-Dichloroethane-d4	118.48385	125.00000	0.2030521	0.001	-5.21	90.00	LINR
uene-d8	107.46827	125.00000	1.1950267	0.001	-14.02	90.00	LINR
Bromofluorobenzene	114.22944	125.00000	0.9975165	0.001	-8.62	90.00	LINR

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G09007-TUN171 BFB Injection Date: 07/09/09

Instrument ID: 5972HP71 BFB Injection Time: 1612

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.2
75	30.0 - 60.0% of mass 95	50.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.8
175	5.0 - 9.0% of mass 174	4.0 (5.2)1
176	95.0 - 101.0% of mass 174	74.1 (96.5)1
177	5.0 - 9.0% of mass 176	4.5 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G09007-CCV	9G09007-CCV1R7	07/09/09	1738
02	VBLKJX	9070915-BLK	9070915-BLK171	07/09/09	1819
03	VJXLCS	9070915-BS1	9070915-BS171	07/09/09	1907
04	YS07-GW05-0709	0907002-08	0907002-0871	07/09/09	2003
05	YS07-GW05P-0709	0907002-09	0907002-0971	07/09/09	2031
06	YS07-EB01-070709	0907002-10	0907002-1071	07/09/09	2112
07	YS07-TB01-070709	0907002-11	0907002-1171	07/09/09	2140
08	YS07-FB01-070809	0907002-12	0907002-1271	07/09/09	2208
09	YS07-TB01-070809	0907002-13	0907002-1371	07/09/09	2237
10	YS07-GW05-0709MS	9070915-MS1	9070915-MS171	07/09/09	2305
11	YS07-GW05-0709MSD	9070915-MSD	9070915-MSD171	07/09/09	2333
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AMENDED DATA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/09/09 Time: 1738

Lab File ID: 9G09007-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.4670800	0.3583786	0.3583786	0.001	-23.27	90.00	AVRG	
Chloromethane	0.3626600	0.3192697	0.3192697	0.1	-11.96	90.00	AVRG	
Vinyl Chloride	0.2698300	0.2776359	0.2776359	0.001	2.89	20.00	AVRG	
Bromomethane	144.48280	125.00000	0.1677824	0.001	15.59	90.00	LINR	
Chloroethane	0.1137200	0.1284666	0.1284666	0.001	12.97	90.00	AVRG	
Trichlorofluoromethane	0.4542000	0.4841016	0.4841016	0.001	6.58	90.00	AVRG	
1,1-Dichloroethene	0.2516100	0.2470707	0.2470707	0.001	-1.80	20.00	AVRG	
Carbon disulfide	1.1333900	1.1425433	1.1425433	0.001	0.81	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.1831500	0.1740956	0.1740956	0.001	-4.94	90.00	AVRG	
Acetone	0.0284900	0.0264999	0.0264999	0.001	-6.98	90.00	AVRG	L/R
Methyl acetate	0.2027500	0.2397114	0.2397114	0.001	18.23	90.00	AVRG	
Methylene Chloride	120.21924	125.00000	0.2821240	0.001	-3.82	90.00	LINR	
trans-1,2-Dichloroethene	0.2873100	0.2824826	0.2824826	0.001	-1.68	90.00	AVRG	
Methyl-tert-butyl ether	0.4324500	0.4558315	0.4558315	0.001	5.41	90.00	AVRG	
1,1-Dichloroethane	0.5362600	0.5684904	0.5684904	0.1	6.01	90.00	AVRG	
cis-1,2-Dichloroethene	0.2878700	0.2960301	0.2960301	0.001	2.83	90.00	AVRG	
2-butanone	0.0460000	0.0483086	0.0483086	0.001	5.02	90.00	AVRG	L/R
Chloroform	0.5384900	0.5585487	0.5585487	0.001	3.72	20.00	AVRG	
1,1,1-Trichloroethane	0.4609700	0.4484856	0.4484856	0.001	-2.71	90.00	AVRG	
Carbon Tetrachloride	0.4059300	0.3965436	0.3965436	0.001	-2.31	90.00	AVRG	
Benzene	1.0737000	1.1319448	1.1319448	0.001	5.42	90.00	AVRG	
1,2-Dichloroethane	0.2686300	0.2841304	0.2841304	0.001	5.77	90.00	AVRG	
Trichloroethene	0.2778400	0.2725986	0.2725986	0.001	-1.89	90.00	AVRG	
1,2-Dichloropropane	0.2411400	0.2750387	0.2750387	0.001	14.06	20.00	AVRG	
Bromodichloromethane	0.3565200	0.3739903	0.3739903	0.001	4.90	90.00	AVRG	
cis-1,3-Dichloropropene	0.3836200	0.4062275	0.4062275	0.001	5.89	90.00	AVRG	
4-Methyl-2-pentanone	0.1692900	0.1754108	0.1754108	0.001	3.62	90.00	AVRG	
Toluene	0.9805700	0.9316298	0.9316298	0.001	-4.99	20.00	AVRG	
trans-1,3-Dichloropropene	0.4788400	0.4835271	0.4835271	0.001	0.98	90.00	AVRG	
1,1,2-Trichloroethane	0.2020700	0.2001455	0.2001455	0.001	-0.95	90.00	AVRG	
Tetrachloroethene	0.3383400	0.2848147	0.2848147	0.001	-15.82	90.00	AVRG	
2-hexanone	0.1138800	0.1169631	0.1169631	0.001	2.71	90.00	AVRG	
Dibromochloromethane	0.3063100	0.2975617	0.2975617	0.001	-2.86	90.00	AVRG	
1,2-Dibromoethane	0.2212400	0.2181245	0.2181245	0.001	-1.41	90.00	AVRG	
Chlorobenzene	0.9524700	0.9104467	0.9104467	0.3	-4.41	90.00	AVRG	
Ethylbenzene	0.5213200	0.4834342	0.4834342	0.001	-7.27	20.00	AVRG	
m,p-Xylene	0.6532300	0.6032353	0.6032353	0.001	-7.65	90.00	AVRG	
o-Xylene	0.6040100	0.5713786	0.5713786	0.001	-5.40	90.00	AVRG	
Styrene	0.9948500	0.9471915	0.9471915	0.001	-4.79	90.00	AVRG	
Bromoform	0.1566200	0.1371575	0.1371575	0.1	-12.43	90.00	AVRG	
Isopropyl Benzene	1.7613200	1.5686786	1.5686786	0.001	-10.94	90.00	AVRG	
1,2,2-Tetrachloroethane	0.5537900	0.6022653	0.6022653	0.3	8.75	90.00	AVRG	

FORM VII VOA

Initial Calibration Date: 7/1/2009
RRF and %RSD Calculations:

Compound Name: chloromethane
Lab Value: 0.383

Area of Compound	2681706
Area of Internal STD	876080
Conc. of Internal STD	125
Conc. of Compound	1000
Calculated RRF	0.383

Compound Name: 4-methyl-2-pentanone
Lab Value: 8.14

RRF of STD 1	0.1513
RRF of STD 2	0.1901
RRF of STD 3	0.1765
RRF of STD 4	0.1684
RRF of STD 5	0.1577
RRF of STD 6	0.1718
Calculated % RSD	8.14

Continuing Calibration File ID: 7/2/2009
RRF and %D Calculations:

Compound Name: carbon disulfide
Lab Value: 1.187

Area of Compound	962463
Area of Internal STD	810804
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	1.187

Compound Name: benzene
Lab Value: 4.4

Average RRF	1.074
Calibration Check RRF	1.121
Calculated % D	-4.4

SAMPLE CALCULATION

Sample ID: YS06-EB01-063009
Standard ID: 7/2/2009
Compound: acetone
Concnetration: 4.6 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	19801		
Area of Internal STD	758420		
Conc. of Internal (ng)	125		
RRF of Compound	0.0284		
Dilution Factor	1		
Weight of Sample	NA	25	
Volume of Sample	25	NA	
% Moisture	NA	0.79	
Aliquot of sample	NA	NA	
Concentration	4.60	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	6.636	6.632	0.999
Standard	9.878	9.884	1.001

DataQual VOA

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS07-GW05-0709
Duplicate Sample ID: YS07-GW05P-0709

Water: RPD>50%
Soil: RPD>75%

Compound	Sample Conc.	Dup. Sample Conc.	%RPD
1,1-dichloroethene	1.7	1.9	11
methyl-tert-butyl ether **	0.11	0.11	0
1,1-dichloroethane	7	7.5	7
1,1,1-trichloroethane	3.4	3.6	6
bromodichloromethane**	0.21	0.17	21
dibromochloromethane*	0.11		200
trichloroethene*		0.32	200
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

COMMENTS: No qualifications required

* result below the CRQL

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0907002
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS06-GW16-0609, YS06-EB01-063009, YS06-FB01-063009, YS06-TB01-063009, TS07-GW05-0709, YS07-GW05P-0709, YS07-EB01-070709, YS07-TB01-070709, YS07-FB01-070809, and YS07-TB01-070709

The 10 aqueous samples listed above were received intact, refrigerated between 0.6°C and 4.3°C, with proper documentation, in sealed shipping containers, on July 1, 8, and 9, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0907002 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples were equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) in eight/10 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration files 9G01002-CAL171 and 9G01002-CAL271 and continuing calibration file 9G02001-CCV1R71. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (VJHLCS/VJHLCSD), (VJILCS/VJILCSD), and (VJXLCS) met overall accuracy criteria. Sample YS07-GW05-0709 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
July 28, 2009

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 6/30, 7/6-8/09
Received Date: 7/1-9/09
Extraction Date: 7/14/09
Analysis Dates: 7/2-9/09

Cooler Temps: 0.6-4.3°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of DFTPP.

No qualifications were required for the initial and continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

No contamination was exhibited in the method blanks. The associated QC blanks for these samples were: YS07-EB01-070709 (no positive results), - equipment blank; YS07-FB01-070709 (no positive results) - field blank.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS07-GW05-0709—all criteria met.

Field Duplicate Sample

A field duplicate was submitted for sample YS07-GW05-0709—no positive results exhibited.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascilotti **Date:** 9,2,09

Initial Calibration Date: 6/29/2009

RRF and %RSD Calculations:

Compound Name: n-nitrosodiphenylamine

Lab Value: 0.379

Area of Compound	3780751
Area of Internal STD	2490684
Conc. of Internal STD	40
Conc. of Compound	160
Calculated RRF	0.379

Compound Name: n-nitrosodiphenylamine

Lab Value: 5.2

RRF of STD 1	0.434
RRF of STD 2	0.424
RRF of STD 3	0.399
RRF of STD 4	0.41
RRF of STD 5	0.386
RRF of STD 6	0.379
Calculated % RSD	5.29

Continuing Calibration File ID: 7/16/2009

RRF and %D Calculations:

Compound Name: n-nitrosodiphenylamine

Lab Value: 0.401

Area of Compound	1520592
Area of Internal STD	1895494
Conc. of Internal STD	40
Conc. of Compound	80
Calculated RRF	0.401

Compound Name: n-nitrosodiphenylamine

Lab Value: 1.0

Average RRF	0.405
Calibration Check RRF	0.401
Calculated % D	1.0

CompuChem
A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0907002
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: YS07-EB01-070709, YS07-FB01-070809, YS07-GW05-0709, YS07-GW05P-0709.

The four water samples listed above were received intact, properly refrigerated between 0.6-4.3°C, with proper documentation, in sealed shipping containers, on July 8 through July 9, 2009. The samples were scheduled for the requested analyses of the semivolatile fraction. SW-846, 3rd Edition, Update 3, Separatory Funnel extraction (Method 3510C), and Method 8270C were used to prepare and analyze these samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance Notices are included in the narrative section and all pertinent Laboratory Notices for SDG # 0907002 are included in the sample data sections. Extraction and analysis holding time requirements were met for all of these samples.

There were no semivolatile project analytes identified above the quantitation limit in any of these samples. Manual quantitations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

Between 925 mL and 975 mL of raw sample were used to extract YS07-EB01-070709, YS07-FB01-070809, YS07-GW05-0709, rather than the method-specified amount of 1000 mL. Low sample volume was received for these samples. The use of this lower volume of raw sample resulted in slightly higher detection limits.

All decafluorotriphenylphosphine (DFTPP) abundance criteria were met for tunes associated with this SDG. Tailing factor criteria were met for pentachlorophenol and benzidine. The breakdown criterion was met for DDT. These three compounds have been added to the DFTPP solution and analyzed together. Quality control criteria were met for all initial and continuing calibration standards associated to this SDG. All of the surrogates met recovery criteria in the analyses of these samples. All of the internal standards met response and retention time criteria in the analyses of these samples. The associated method blank met all quality control criteria. The associated Laboratory Control Sample (LCS) met all accuracy criteria. YS07-GW05-0709 was used as the original to prepare the duplicate matrix spikes as requested. The matrix spike duplicates met all accuracy and precision criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Rebecca K Mead

Rebecca K. Mead, Ph.D.
Senior Scientist
July 27, 2009

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (Method 6850 with DOD Perchlorate handbook modifications)

Holding Times

Sampling Date: 7/7-8/09
Received Date: 7/9-13/09
Extraction Date: 7/14-17/09
Analysis Dates: 7/14-17/09

Cooler Temp: 1-3.5°C

All extraction and analysis holding time requirements were met.

Calibrations

Mass assignments were verified. The submitted calibrations/verifications were within criteria.

Internal Standards

All criteria meet.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

There was no method blank contamination. The associated field QC for this data package was: YS07-EB01-070709 (no positive results)- equipment blank; YS07-FB01-070809 (no positive results)- field blank.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS07-GW05-0709—no qualifications, high results in sample.

Field Duplicate Sample

A field duplicate was submitted for sample YS07-GW05-0709—no qualifications.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

We have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications were required.

Reviewer Theresa Marchetti **Date:** 9/2/09

CASE NARRATIVE
COMPANY: Compuchem
CTO-166 Yorktown NWS
SUBMISSION #: R0903817

Four samples were collected on 7/7-7/8/09 and received at CAS on 7/9-7/14/09 with cooler temperatures of 1° and 3.5°C.

PERCHLORATES

Four water samples were analyzed for Perchlorates by method 6850.

All samples were analyzed on instrument: Agilent LC/MS Model #1100 using a 250 mm x 4.6 mm K' Prime column.

All the initial and continuing calibration criteria were met for all analytes.

All Internal Standards were within QC limits.

Site-specific QC was requested on sample YS07-GW05-0709. The Matrix Spike/ Matrix Spike Duplicate for were not applicable. The analyte concentrations in the sample were more than four times higher than the added spike concentration preventing accurate evaluation of the spike recovery. These have been flagged with "#". All Laboratory Control Sample/ Laboratory Control Sample Duplicates (LCS/LCSD) recoveries were within limits. The Relative Percent Difference (RPD) calculations were within limits.

The Laboratory Blanks associated with these samples were free of contamination.

All hits between the MRL and MDL have been flagged with a "J" as estimated.

The samples were analyzed within the method specified extraction and analysis holding times.

No other QC or analytical problems were encountered.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the details conditioned above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

DOD CRITERIA

(more samples to come to swinto SDG 1)

S 13314

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS
TAT: 20 calendar day TAT
Report style: level IV
Disk requirement: ChemHill LabSpec 7

Samples shipped to: CAS
Contact: Deb Patton
Address: 1 Mustard Street
Rochester, NY 14609-0854
Phone: (585) 288-5380
Project Locale (state): VA

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379- 4050
Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC?

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S - SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: perchlorate 6850	CCN	Remarks / Comments (see Notes 2 & 3)
YS07-GW05-070709	7/7	1130	2	F	U			6	X	✓	0907028-01	USE FOR "SDG1" MS/MSD
YS07-GW05P-070709	"	1200	2	F	U			2		✓	" -02	
YS07-EB01-070709	✓	1420	4	F	U			2		✓	✓ -03	

7/8/09

Clients ~~Special~~ Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) K. Manning	Date: 7.08.09	#2 Relinquished by:(sig) Shayna Sutton	Date: 7/9/09	Relinquished by:(sig)	Date:
Company Name:	Time: 1425	Company Name: CAS	Time: 10:15	Company Name:	
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	
Company Name:	Time:	Company Name:	Time:	Company Name:	

R0903817
Compuchem
CTO-166 Yorktown NWS

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

090

DOD CRITERIA put in "SDG" please with S 13317

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

hold open for ~~TIC~~ last results

COMPUCHEM
a division of Liberty Analytical Corp

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-11da YORKTOWN NWS
TAT: 20 calendar days
Report style: level IV
Disk requirement: CHEM HILL (Lab Spec)

Samples shipped to: CAS
Contact: Deb Patton
Address: 1 Mustard St. Rochester, NY 14609
Phone: (585) 288-5380
Project Locale (state): VA

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050

Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? QC sent for 7/8 rec

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other Field blk

BOX #2
A. HGl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP
T- TCLP
S - SW-846
W- CWA 600-series
O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: perchlorate 6850	CCN	Remarks / Comments (see Notes 2 & 3)
YS07-FB01-070809	7/8/2009	1430	9	F	U			1		✓	0907628-04	
										7/10/09		

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig)	Date: 7/13/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1340	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date: 7/14/09	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name: CAS	Time: 1015	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

100

Revision 0 2-10-99

Holding Times

Sampling Date: 6/30, 7/6, 7/7, 7/8
Received Date: 7/1, 7/7, 7/8, 7/9
Extraction Dates: 7/6, 7/13
Analysis Dates: 7/17

Sample receipt documentation was in order. Cooler temps were acceptable.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8332. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory or field blanks.

SURROGATE RECOVERIES

All surrogate recovery criteria were met. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS07-GW05-0709 exhibited acceptable recoveries for nitroglycerine in both the MS & MSD. The RPD was also good. The LCS samples provided were good.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: **YS07-GW05-0709** **Duplicate ID:** **YS07-GW05P-0709**
Comments: No positive results for the target compound were reported in the samples.

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. Raw data was verified.

Reviewer: JCleveland **Date:** 91109

Initial Calibration Date: 7/16/2009
RRF and %RSD Calculations: Std RF10
Compound Name: nitroglycerin
Lab Value: 883.8000

Area of Compound	35353
Conc. Of Compund	40
Calculated CF	883.8250

Compound Name: nitroglycerin
Lab Value: 8.2

CF 1	1039.3750
CF 2	883.8000
CF 3	874.9250
CF 4	867.8600
CF 5	866.1580
CF 6	
Calculated % RSD	8.24

Continuing Calibration File ID:
RRF and %D Calculations:
Compound Name: nitroglycerin
Lab Value: 898.46500

Area of Compound	179693
Conc. Of Compund	200
Calculated CF	898.4650

Compound Name: nitroglycerin
Lab Value: 0.6

Average RRF	906.42350
Calibration Check RRF	898.46500
Calculated % D	0.9

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0907002
PROTOCOL: SW-846 8332

SAMPLE IDENTIFICATIONS: YS06-EB01-063009, YS06-FB01-063009, YS06-GW16-0609, YS07-EB01-070609, YS07-EB01-070709, YS07-EB01-070809, YS07-FB01-070809, YS07-G01-0709, YS07-GW02-0709, YS07-GW03-0709, YS07-GW04-0709, YS07-GW05-0709, YS07-GW05P-0709

GW01

The thirteen water samples listed above were received intact, refrigerated between 0.6 and 4.3°C, with proper documentation, in sealed shipping containers, on July 1, 7, 8, and 9, 2009. The samples were scheduled for the requested analyses of the explosives fraction. Method 8332 for Nitroglycerin was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. This portion of the SDG narrative deals with the explosives analysis only. All pertinent Quality Assurance notices are included in the narrative section and all pertinent Laboratory notices for SDG # 0907002 are included in the sample data sections.

Explosives

Extraction and analysis holding time requirements were met for the sample.

No target analytes confirmed above Quantitation Limit (QL) in the samples.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the surrogates met recovery and retention time criteria in the analysis of the sample.

The associated method blank met all quality control criteria.

Duplicate matrix spikes (MS/MSD) were performed with sample YS07-GW05-0709, and met all precision and recovery criteria. The associated Laboratory Control Samples (LCS/LCSD) prepared and analyzed along with the samples met recovery and precision criteria.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Teresa Amentt Jennings
GC/HPLC Data Review
July 24, 2009

Holding Times

Sampling Date: 7/7, 7/8
Received Date: 7/8-9/09 at Compouchem
7/9-7/10 at subcontractor (CT Laboratories)
Extraction Dates: 7/14
Analysis Dates: 7/27

Sample receipt documentation was in order. Temp on one cooler was slightly high (<1°), no qualifications were required.

Calibrations

The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard six-point curve for the target compound and surrogate. Linear regression curves were plotted. Correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. Peak quality for nitroguanidine was not great but integration appeared consistent throughout the sequence. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory or field blanks.

SURROGATE RECOVERIES

All surrogate recovery criteria were met. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS07-GW05-0709 exhibited acceptable recoveries for nitroguanidine in both the MS & MSD. The RPD was also good. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compound. No qualifications were required.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: **YS07-GW05-0709** **Duplicate ID:** **YS07-GW05P-0709**
Comments: No positive results for the target compound were reported in the samples.

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. Raw data was verified.

Reviewer: J Cleveland **Date:** 91209

Case Narrative

Client: CompuChem
Project: CTO-YORKTOWN NWS
Sample Receipt Date: 07/09/2009
SDG #: 74008

Four water samples were received for Nitroguanidine analysis. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

Sample Analysis and Quality Control

Explosives Analysis:

The samples were analyzed using US EPA Method 8330. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Surrogate Recovery Data
Matrix Spike/Matrix Spike Duplicate Recovery Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log
Chromatograms

All analysis results met the method specified quality control criteria.

DOD CRITERIA

please start "SDG 1" S 13315 and leave open for more samples

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SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS
TAT: 20 calendar day
Report style: level IV
Disk requirement: CH2M HILL LabSpec

Samples shipped to: CT Labs
Contact: Pat Letterer
Address: 1230 Lange Court
Baraboo, WI 53913
Phone: (608) 356-2760
Project Locale (state): VA

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 x4089
Fax: (919) 379-4057
Sampling complete? Y or N (see Note 1)
Project-specific (PS) or Batch (B) QC?

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP T- TCLP
S - SW-846
W- CWA 600-series
O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: 8330 Nitroguanidine	CCN	Remarks / Comments (see Notes 2 & 3)
YS07-GW05-0709	7/7	1130	2	F	U			6		✓	0907029-01	694817
YS07-GW05P-0709	↓	1200	2	↓	↓			2		✓	-02	~~694818~~ 694818
YS07-EB01-070709	↓	1420	4	↓	↓			2		✓	-03	694819

All Done

Folder #: 74008
Company: COMPUCHEM
Project: CTO-166 YORKTOWN NWS
Logged By: LAW PM: PM

Clients Special Instructions: Temperature _____ °C

Lab: Received in good condition? Y or N **Describe any problems:**

#1 Relenquished by:(sig) K. Manning	Date: 7-08-09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name:	Time: 1455	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig) L. Werth	Date: 1014	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Cooler - Theirs
ice/melt - 5.2
7.9.09 1000

Revision 0 2-10-99

DOD CRITERIA

S 13318

107

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS
TAT: 20 calendar days
Report style: Level IV
Disk requirement: CHEMHILL LabSpec7

Samples shipped to: CT Labs
Contact: Pat Lefleser
Address: 1230 Large Ct.
Baraboo, WI 53913
Phone: (800) 228-3012
Project Locale (state): VA

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050
Sampling complete? Y or N (see Note 1)
Project-specific (PS) or Batch (B) QC? designate QC in 7/8 rect

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other field blk

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S - SW-846, W- CWA 600-series, O- Other _____

8330

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Nitroguanidine	CCN	Remarks / Comments (see Notes 2 & 3)
YS07-FB01-070809	7/8	1430	9	F	U			2		✓	0907029-04	695685

7/9/09

Folder #: 74043
Company: COMPUCHEM
Project: CTO-166 YORKTOWN N
Logged By: JLS PM: PM

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N **Describe any problems:**

#1 Relenquished by:(sig) K. Manning	Date: 7.09.09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name:	Time: 1155	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Shiv cooler melt water NO ice 6.9°
7/10/09 1010 JS

Revision 0 2-10-99

LR Curve		HPLC1
	7/28/2009	
INTERCEPT	-1047.292316	
SLOPE	113275.7171	
correlation coefficient	0.999694836	

CCV 7/28/09, 11:00:15

Y-	56588
x = (56588 + 1047.292316)/113275.7171	
x =	0.5088
Lab Value	0.511
%D =	-1.76%
Lab Value	2.25%

SLIGHT ROUNDING DIFFERENCES NOTED

Sample Calculation: 59617,696811,,LCSW

Compound:	nitroguanidine
Lab Value:	0.490 ug/ml
y =	54160
x = (54160 + 1047.292316)/113275.7171	
x in ug/ml	0.48737
Reported value in ug/L	980.00

rounding differences noted (0.5%D) - no impact - likely due to differences in curve plot

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 6/30/09
Received Date: 7/1/09
Prep. Dates: no prep – dissolved; 7/15 ICP total; 7/15 dissolved, 7/15 total Hg
Analysis Dates: 7/27 dissolved, 7/16-7/17 total ICP; 7/16 dissolved, 7/16 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria in all sequences. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as ~~non-detect at the RL~~. B. JAC 91109

  L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	lead	-1.9B	≤ 10X MDL (18 ug/L)	L/UL	BL
ICB/CCB – dissolved metals	arsenic	-3.0B ug/L	≤ 10X MDL (24 ug/L)	L/UL	BL
	cadmium	0.5B ug/L	2.5 ug/L	B	BL
YS06-EB01-063009 –dissolved	silver	0.41B ug/L	2.05 ug/L	B	BL
	zinc	12.3B ug/L	61.5 ug/L	B	BL
YS06-FB01-063009	vanadium	0.56B ug/L	2.8 ug/L	B	BL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS06-GW16-0609	lead	L/UL	BL
YS06-GW16-0609	arsenic	L/UL	BL
YS06-GW16-0609	cadmium	B	BL
YS06-GW16-0609	silver	B	BL
YS06-GW16-0609	zinc	B	BL
YS06-GW16-0609	vanadium	B	BL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	arsenic	-5.003B ug/L	≤ 10X MDL (24 ug/L)	L/UL	BL
	cadmium	-0.766B ug/L	≤ 10X MDL (3 ug/L)	L/UL	BL
	copper	-1.101B ug/L	≤ 10X MDL (9 ug/L)	L/UL	BL
	lead	2.952B ug/L	14.76 ug/L	B	BL
	nickel	-3.238B ug/L	≤ 10X MDL (11 ug/L)	L/UL	BL
	silver	-0.708B ug/L	≤ 10X MDL (3 ug/L)	L/UL	BL
	thallium	-8.236 B ug/L	≤ 10X MDL (37 ug/L)	L/UL	BL
ICB/CCB – total metals	antimony	2.2b ug/L	11.0 ug/L	B	BL
YS06-EB01-063009	chromium	0.83B ug/L	4.15 ug/L	B	BL
	vanadium	0.56B ug/L	2.8 ug/L	B	BL

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS06-GW16-0609	arsenic	L/UL	BL
YS06-GW16-0609	cadmium	L/UL	BL
YS06-GW16-0609	copper	L/UL	BL
YS06-GW16-0609	lead	B	BL
YS06-GW16-0609	nickel	L/UL	BL
YS06-GW16-0609	silver	L/UL	BL
YS06-GW16-0609	thallium	L/UL	BL
YS06-GW16-0609	antimony	B	BL
YS06-GW16-0609	chromium	B	BL
YS06-GW16-0609	vanadium	B	BL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

There was no MS for this SDG. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses for both the total and dissolved fractions exhibited acceptable %Ds for all analytes except potassium. This analyte was flagged as estimated J in both samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium			#DIV/0!
manganese			#DIV/0!
sodium			#DIV/0!

Comments: No qualifications were required.

Total Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum			#DIV/0!
calcium			#DIV/0!
iron			#DIV/0!
manganese			#DIV/0!
potassium			#DIV/0!
sodium			#DIV/0!

Comments: Flag Fe, Mn, K and Na as estimated J.

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS06-GW16-0609
COMPOUND: sodium
CONCENTRATION: 25000 ug/L
%Solids – na
50 ml

Raw Data result: 25048.83 ug/L

25048.83 ug/L * 0.05L/0.05L = 25048.83 ug/L

Total Metals

EPA SAMPLE ID: YS06-GW16-0609
COMPOUND: magnesium
CONCENTRATION: 4710 ug/L
%Solids – na
50 ml

Raw Data result: 4710.162 ug/L

4710.162 ug/L * 0.05L/0.05L = 4710.162 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer J A Cleveland **Date:** 9/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907002

The indicated Sample Delivery Group (SDG) consisting of three (3) water samples was received into the laboratory information management system (LIMS) on July 1, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 2.6 to 4.3°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared and analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0907002-01 ID YS06-GW16-0609L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forster for Susan Bass

Susan W. Bass
Senior Chemist
July 18, 2009

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907002

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	204.41	102.2		
Antimony				60.0	64.19	107.0		
Arsenic				10.0	8.69	86.9		
Barium				200.0	199.76	99.9		
Beryllium				5.0	5.28	105.6		
Cadmium				5.0	5.27	105.4		
Calcium				2000.0	2123.03	106.2		
Chromium				10.0	10.65	106.5		
Cobalt				50.0	51.63	103.3		
Copper				25.0	23.74	95.0		
Iron				100.0	104.80	104.8		
Lead				3.0	3.13	104.3		
Magnesium				2000.0	2148.98	107.4		
Manganese				15.0	15.14	100.9		
Mercury	0.2	0.18	90.0					
Nickel				40.0	43.49	108.7		
Potassium				2000.0	1778.01	88.9		
Selenium				5.0	9.39	187.8		
Silver				10.0	9.45	94.5		
Sodium				2000.0	2125.18	106.3		
Thallium				10.0	9.38	93.8		
Vanadium				50.0	51.77	103.5		
Zinc				20.0	20.83	104.2		

Control Limits: no limits have been established by EPA at this time

K+ up to 2X RL

No Quals Rqd - all Se - non-detect.
JLC 9809

U

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	36.1	B	200.0	U	200.0	U	200.000	U	P
Antimony	10.0	U	2.8	B	2.0	B	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	-5.003	B	P
Barium	-0.7	B	see PBlk -0.4	B	-0.7	B	-0.5	B	-0.825	B	P
Beryllium	5.0	U	0.4	B	5.0	U	5.0	U	5.000	U	P
Cadmium	5.0	U	0.4	B	5.0	U	5.0	U	-0.766	B	P
Calcium	5000.0	U	67.0	B	5000.0	U	5000.0	U	5000.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	0.7	B	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	-1.101	B	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	3.0	U	3.0	U	3.0	U	3.0	U	2.952	B	P
Magnesium	5000.0	U	75.6	B	26.8	B	5000.0	U	5000.000	U	P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV
Nickel	-2.3	B	see PBlk -1.5	B	-2.4	B	-2.1	B	-3.238	B	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	5.0	U	5.0	U	5.0	U	5.0	U	-0.708	B	P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	514.603	B	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	-8.236	B	P
Vanadium	20.0	U	0.6	B	0.6	B	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P

more assoc.

JAC 9805

AMENDED DATA

U

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 4	C	5	C	6	C	Preparation Blank	C	M
Aluminum			200.0	U	200.0	U	200.0	U	✓		P
Antimony			3.1	B	1.9	B	2.2	B	✓		P
Arsenic			10.0	U	10.0	U	10.0	U			P
Barium			-0.6	B	-0.7	B	-0.7	B	ND		P
Beryllium			5.0	U	5.0	U	5.0	U			P
Cadmium			5.0	U	5.0	U	5.0	U			P
Calcium			5000.0	U	5000.0	U	46.3	B	ND		P
Chromium			10.0	U	10.0	U	10.0	U			P
Cobalt			5.0	U	5.0	U	5.0	U			P
Copper			5.0	U	-1.1	B	5.0	U	See PBLK		P
Iron			100.0	U	100.0	U	100.0	U			P
Lead			3.0	U	3.0	U	3.0	U			P
Magnesium			5000.0	U	5000.0	U	5000.0	U			P
Manganese			10.0	U	10.0	U	10.0	U			P
Mercury			0.200	U	0.200	U	0.200	U			CV
Nickel			-1.8	B	-2.6	B	-2.7	B	See PBLK		P
Potassium			5000.0	U	5000.0	U	5000.0	U			P
Selenium			5.0	U	2.9	B	5.0	U	ND		P
Silver			5.0	U	-0.5	B	5.0	U	See PBLK		P
Sodium			5000.0	U	5000.0	U	5000.0	U			P
Thallium			10.0	U	10.0	U	10.0	U			P
Vanadium			0.5	B	20.0	U	20.0	U			P
Zinc			20.0	U	20.0	U	20.0	U			P

✓

none assoc.

JAC 9809

AMENDED DATA

U

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS06-GW16-0609L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	500.39		387.75	B	22.5		P
Antimony	2.25	B	50.00	U	100.0		P
Arsenic	10.00	U	50.00	U			P
Barium	49.60	B	47.14	B	5.0		P
Beryllium	5.00	U	25.00	U			P
Cadmium	5.00	U	25.00	U			P
Calcium	126436.80		125428.60		0.8		P
Chromium	1.37	B	50.00	U	100.0		P
Cobalt	5.00	U	25.00	U			P
Copper	5.00	U	25.00	U			P
Iron	1105.59		1145.81		3.6		P
Lead	5.22		15.00	U	100.0		P
Magnesium	4710.16	B	4815.42	B	2.2		P
Manganese	147.69		146.17		1.0		P
Mercury	0.20	U	1.00	U			CV
Nickel	40.00	U	200.00	U			P
Potassium	1159.42	B	1009.95	B	12.9	E	P
Selenium	5.00	U	25.00	U			P
Silver	5.00	U	25.00	U			P
Sodium	25152.68		25508.43		1.4		P
Thallium	10.00	U	50.00	U			P
Vanadium	1.95	B	3.58	B	83.6		P
Zinc	48.26		49.97	B	3.5		P

J/UJ

9809

AMENDED DATA

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907003

The indicated Sample Delivery Group (SDG) consisting of two (2) dissolved water samples was received into the laboratory information management system (LIMS) on July 1, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 2.6 to 4.3°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared and analyzed in accordance with SW846 methodology for the requested dissolved TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0907003-01 ID YS06-GW16-0609L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

Susan W. Bass
Senior Chemist
July 27, 2009

№ 03856

Page 1 of 1

CTO-166

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekkah Shaw
Phone #: (757)671-8311
Sampler's Name: P Murphy ; M. Cist

Project Information

Project Name: CTO-166 Yorktown NWS
Sampling Location: Yorktown NWS - Site 6
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? (Y) or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3 40ml VOA	Metals ILM05.3 100ml HDPE	F Metals ILM05.3 100ml HDPE	Explo/PETN/TNT/DNA 8330 AL	Nitroglycerin 8332 AL	pH - Sample Info (Lab Use)
0907002-01 0907003-01	YS06-GW16-0609	6/30/09	0950	AQ	9	3		2				3	1	1	2	2	0907004-01 22 22
0907002-04	YS06-TB01-063009	6/30/09	1000	TB	3	3						3				0	—
0907002-01 0907003-02	YS06-EB01-063009	6/30/09	1400	AQ	9	3		2				3	1	1	2	2	0907004-02 22 22
0907002-03	YS06-FB01-063009	6/30/09	1415	AQ	8	3		2				3	1		2	2	0907004-03 22

all parameters are now SW8460 DOD Criteria

Residual Chlorine Present?
Yes ___ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or N (NA)
625 & Phenol samples checked for chlorine? Y or N (NA)
608 samples checked for pH between 5.0-9.0? Y or N (NA)

Comments

F Metals were field filtered

Sample Custody

Relinquished by:	Date/Time: 6/30/09 1600	Received by:	Date/Time: 7/1/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice (Y) or N
Cooler Temp 2.6, 4.3°C

Samples held 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907003

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	200.0	U	200.000	U	P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	-3.0	B	10.000	U	P
Barium	-0.5	B NQ	-0.4	B	200.0	U	200.0	U	-0.382	B	P NQ
Beryllium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Cadmium	5.0	U	5.0	U	0.5	B V	0.5	B V	5.000	U	P
Calcium	5000.0	U	5000.0	U	5000.0	U	48.0	B	5000.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	50.307	B	P NQ
Lead	-1.9	B	3.0 HUL	U	3.0	U	3.0	U	3.000	U	P
Magnesium	5000.0	U	5000.0	U	44.3	B NQ	38.4	B NQ	5000.000	U	P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U	1.023	B	P NQ
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV
Nickel	40.0	U	40.0	U	40.0	U	40.0	U	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	5.0	U	0.4	B	5.0	U	5.0	U	5.000	U	P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P

none assoc

GW16

✓ flag as noted in report

AMENDED DATA

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SW846 - METALS

9
ICP SERIAL DILUTIONS

SAMPLE NO.

YS06-GW16-0609L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907003

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	132.72	B	1000.00	U	100.0		P
Antimony	10.00	U	50.00	U			P
Arsenic	10.00	U	50.00	U			P
Barium	41.41	B	39.32	B	5.0		P
Beryllium	5.00	U	25.00	U			P
Cadmium	0.56	B	25.00	U	100.0		P
Calcium	112803.20		110810.00		1.8		P
Chromium	10.00	U	50.00	U			P
Cobalt	0.89	B	25.00	U	100.0		P
Copper	5.00	U	25.00	U			P
Iron	298.66		324.83	B	8.8		P
Lead	3.00	U	15.00	U			P
Magnesium	4597.59	B	4536.13	B	1.3		P
Manganese	132.59		131.56		0.8		P
Mercury	0.20	U	1.00	U			CV
Nickel	2.75	B	200.00	U	100.0		P
Potassium	1297.02	B	991.11	B	23.6	E	P
Selenium	5.00	U	25.00	U			P
Silver	0.38	B	25.00	U	100.0		P
Sodium	25048.83		24105.34	B	3.8		P
Thallium	10.00	U	50.00	U			P
Vanadium	1.11	B	100.00	U	100.0		P
Zinc	7.00	B	8.38	B	19.7		P

JWJ

AMENDED DATA

This SDG contains ammonia results using EPA method 350.1.

HOLDING TIMES

Sampling Date: 6/30-7/14
Received Date: 7/1-7/16
Prep. Dates:
Analysis Dates:

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as B.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code

Sample ID	analyte	Q Flag	Q Code

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS was acceptable. The submitted LCS samples were acceptable.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Sample ID: YS07-GW05-0709 Duplicate Sample ID: YS07-GW05P-0709

Parameter	Sample Conc.	Duplicate Conc.	RPD
ammonia			#DIV/0!

Comments: No qualifications were required.

SAMPLE CALCULATION

Ammonia
EPA SAMPLE ID: YS07-EB01-070709
COMPOUND: NH_3
CONCENTRATION: 0.07 mg/L
%Solids – na
Raw Data result: 0.07 mg/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instrument. Raw data was verified.

Reviewer JCleveland **Date:** 9/12/09

CompuChem

A Division Of

Liberty Analytical Corp

SDG NARRATIVE
SDG # 0907002

The 4 water samples were received intact, refrigerated with proper documentation, in sealed shipping containers, on July 8th 2009. The samples were scheduled for the requested analysis of the Wet Chemistry fraction. The samples were analyzed, in accordance with current EPA methods, for the analytes requested as per the COC, with the exceptions and/or additions requested by the client.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS/& Blank) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
YS07-EB01-070709 was used as the original to prepare the matrix spike and matrix spike duplicate. Both fell outside our recovery limits of 90-110 %REC at 114 & 116 %.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Joseph Mohn
Wet Chemistry Supervisor
July 28th 2009

CTO-166

CHAIN OF CUSTODY

№ 03856

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekkah Shaw
Phone #: (757)671-8311
Sampler's Name: P. Murphy ; M. Cost

Project Information

Project Name: CTO-166 Yorktown NWS
Sampling Location: Yorktown NWS - Site 6
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

VOCs OLM04.3 40ml VOA
Metals ILM05.3 160ml
F Metals ILM05.3 100ml
Explo/PETN/3,5-DNA 8330 AL
Nitroglycerin 8332 AL
4 all parameters are now SW846/ DOD Criteria

Matrices

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

CompuChem NG (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs	Metals	F Metals	Explo/PETN/3,5-DNA 8330	Nitroglycerin 8332	pH (Sample Info Lab Use)
0907002-01 0907003-01	YS06-GW16-0609	6/30/09	0950	AQ	9	3		2				3	1	1	2	2	0907004-01
0907002-04	YS06-TB01-063009	6/30/09	1000	TB	3	3						3				0	
0907002-02 0907003-02	YS06-EB01-063009	6/30/09	1400	AQ	9	3		2				3	1	1	2	2	0907004-02
0907002-03	YS06-FB01-063009	6/30/09	1415	AQ	8	3		2				3	1		2	2	0907004-03

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

F Metals were field filtered

Sample Custody

Relinquished by:	Date/Time: 6/30/09 1600	Received by:	Date/Time: 7/1/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 2.6, 4.3 °C

Samples held 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for custo

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CTO-166

№ 03857

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: 757-671-4650
Sampler's Name: P. Murphy C. Bowman

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Site 7
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Expl PETN 3,5-DNA 8330 AL
Nitroglycerin 8332 AL

Matrices

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

pH Sample Info (Lab Use)

Container/Content No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Expl PETN 3,5-DNA 8330 AL	Nitroglycerin 8332 AL
0907002-05 0907004-01	YS07-GW03-0709	7/6/09	1255	AQ	4							2	2
0907002-06 0907004-02	YS07-GW04-0709	7/6/09	1500	AQ	4							2	2
0907002-07 0907004-03	YS07-EB01-070609	7/6/09	1515	AQ	4							2	2

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 7/6/09 1730	Received by:	Date/Time: 7/7/09 0930
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where? Expl. PETN 3,5-DNA to ~~CAS~~ Empirical
Custody Seal(s) intact? Y or N
On Ice Y or N
Cooler Temp: 1.9 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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№ 03858

CTO-166

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: 757-671-8311
Sampler's Name: P. Murphy C. Bowman

Project Information

Project Name: CTO-166 Site 7
Sampling Location: Yorktown NWS Site 7
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MeOH	Other	VOCs 624 40mL	n-Nitrosodiphenylamine 8270C AL	Explo/PETN/3,5-DNA 8330 AL	Nitroglycerin 8332 AL	Nitroguanadine 8330 40mL	Perchlorate 6850 250mL	Ammonia 350.1 250mL	sub perch/Nitro	pH / Sample Info (Lab Use)
0907002-06 0907004-07	YS07-GW05-0709	7/7/09	1130	AQ	39	9			3			(9)	(6)	6	(6)	6	3	(3)	0907028-01 0907028-02	2, 6, 7, 3
0907002-08 0907004-08	YS07-GW05P-0709	7/7/09	1200	AQ	13	3			1			(3)	(2)	2	(2)	2	1	(1)	0907028-03 0907029-02	3
0907002-11	YS07-TB01-070709	7/7/09	1330	TB	3	3						3								
0907002-10 0907004-09	YS07-EB01-070709	7/7/09	1420	AQ	13	3			1			(3)	(2)	2	(2)	2	1	(1)	0907028-04 0907029-02	

Residual Chlorine Present?
Yes
No ✓

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Run MS/MSD on GW05
Done 250mL Ammonia does not have ID. Done Ammonia missing from ID GW05P. All samples match COC. [illegible]

Sample Custody

Relinquished by: [signature]	Date/Time: 7/7/09 1800	Received by: [signature]	Date/Time: 7/8/09 0900		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontact? (Y) or N If yes, where? Expl. 8330 + PETN + 3,5 DNA to Empirical per chlorate 6850 to CAS Nitroguanidine to CT Labs	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.6, 2.9, [illegible] °C		

Samples stored 60 days after date report mailed at no extra charge.
White & Yellow copy to lab • Pink copy for customer

CTO-166

CHAIN OF CUSTODY

№ 03860

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste K1
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: (757) 671-6245
Sampler's Name: K Murphy C. Bowman

Project Information

Project Name: CTO-166 Site 7
Sampling Location: Yorktown NWS Site 7
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Compu Chem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3 40mL	n-Nitrosodiphenylamine 8270C AL	Expl/PETN/3,5-DNA 8330 AL	Nitroglycerin 8332 AL	Nitroguanidine 8330 40mL	Perchlorate 6850 250mL	Ammonia 350.1 250mL	Sub perchlorate to Alpha	Ammonia
0907002-11 0907004-11	YS07-GW01-0709	7/8/09	1030	AQ	4									2	2					
0907002-12 0907004-12	YS07-EB01-070809	7/8/09	1100	AQ	4									2	2				↓	
0907002-11e 0907004-13	YS07-GW02-0709	7/8/09	1345	AQ	4									2	2					
0907002-17 0907004-10	YS07-FB01-070809	7/8/09	1430	AQ	13	3			1			3	2	2	2	2	1	1	0907028-04 A9110824-04R2	
0907002-13	YS07-TB01-070809	7/8/09	1445	TB	3	3						3								

Residual Chlorine Present?
Yes ____ No ✓

Matrices
GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

pH / Sample Info (Lab Use)

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Sample Custody

Relinquished by:	Date/Time: 7/8/09 1700	Received by:	Date/Time: 7/9/09 0900		
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Subcontract? (Y) or N If yes, where? Expl 8330 PETN 3,5-DNA to Empirical Perchlorate 6850 to CAS Nitroguanidine to CT Labs	Custody Seal(s) intact? (Y) or N	On Ice (Y) or N	Cooler Temp: 1.9, 2.0, 0.9c		

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

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CompuChem
a division of Liberty Analytical Corporation

QUALITY ASSURANCE NOTICE

CompuChem ID # _____
Client ID # 4507-GW06-0709
Case # _____
Type of Analysis Ammonia
Receipt Date 7/8/09

The pH reading for the sample above was 6,3 : the required pH level is <2. (one of MS/MSD) pH is OK

A CompuChem Project Manager contacted the client who instructed the laboratory to:

Preserve in-house ✓

Note: For samples preserved in house, certain clients require that the maximum amount of preservative added to a sample in an SDG also be added to the associated field or equipment blank. If neither blank is present, the appropriate laboratory must be notified so the proper amount of preservation can be added to the method blank.

Analyze - qualify with notice ✓

Dispose - client will resample _____

Subcontract lab to preserve _____

Project Manager [signature] Date 7/8/09

Preservation Type 10% H_2SO_4 Preservative Lot Number 766-17-1

Preserved By [signature] Date 7/8/09

QAN-R-2
020529

QAN-R-2 052902.llc

CompuChem
a division of Liberty Analytical Corporation

QUALITY ASSURANCE NOTICE

CompuChem ID #
Client ID # YS07-GW05P-0709
Case #
Type of Analysis Ammonia
Receipt Date 7/8/09

The pH reading for the sample above was 3.5 : the required pH level is <2.

A CompuChem Project Manager contacted the client who instructed the laboratory to:

Preserve in-house ✓

Note: For samples preserved in house, certain clients require that the maximum amount of preservative added to a sample in an SDG also be added to the associated field or equipment blank. If neither blank is present, the appropriate laboratory must be notified so the proper amount of preservation can be added to the method blank.

Analyze - qualify with notice ✓

Dispose - client will resample

Subcontract lab to preserve

Project Manager [signature] Date 7/8/09

Preservation Type 10% H_2SO_4 Preservative Lot Number 7661-17-1

Preserved By [signature] Date 7/8/09

QAN-R-2
020529

QAN-R-2 052902 IIc

CompuChem
A Division Of
Liberty Analytical Corp.

7/28/2009

Revised 8/26/09

0907002VOC-REV

REBEKHA SHAW

CH2M HILL, INC.

5700 CLEVELAND STREET, SUITE 101

VIRGINIA BEACH, VA 23462

Subject:

Report of Data - Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D- WorkOrder: 0907002

Attn.: REBEKHA SHAW

Enclosed are the results of analytical work performed in accordance with the referenced account number. This report covers sample(s) appearing on the listing.

Thank you for selecting CompuChem for your sample analysis. If you should have questions or require additional analytical services, please contact your representative at 1-800-833-5097

Sincerely,

Compuchem

a division of Liberty Analytical Corporation

Attachment

TOTAL NUMBER OF PAGES 370

501 Madison Avenue, Cary, NC 27513 Tel: 919-379-4100 Fax: 919-379-4050

CompuChem, a division of Liberty Analytical

Client: CH2M HILL, INC. **Work:** 0907002

Project CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052 **Sdg:** DRAFT 0907002

Lab ID	Client ID	Matrix	Date Sampled	Date Received
0907002-01	YS06-GW16-0609	Water	6/30/09 9:50 am	7/1/09 9:15 am
0907002-02	YS06-EB01-063009	Water	6/30/09 2:00 pm	7/1/09 9:15 am
0907002-03	YS06-FB01-063009	Water	6/30/09 2:15 pm	7/1/09 9:15 am
0907002-04	YS06-TB01-063009	Water	6/30/09 10:00 am	7/1/09 9:15 am
0907002-05	YS07-GW03-0709	Water	7/6/09 12:55 pm	7/7/09 9:50 am
0907002-06	YS07-GW04-0709	Water	7/6/09 3:00 pm	7/7/09 9:50 am
0907002-07	YS07-EB01-070609	Water	7/6/09 3:45 pm	7/7/09 9:50 am
0907002-08	YS07-GW05-0709	Water	7/7/09 11:30 am	7/8/09 9:00 am
0907002-09	YS07-GW05P-0709	Water	7/7/09 12:00 pm	7/8/09 9:00 am
0907002-10	YS07-EB01-070709	Water	7/7/09 2:20 pm	7/8/09 9:00 am
0907002-11	YS07-TB01-070709	Water	7/7/09 1:30 pm	7/8/09 9:00 am
0907002-12	YS07-FB01-070809	Water	7/8/09 2:30 pm	7/9/09 9:00 am
0907002-13	YS07-TB01-070709	Water	7/8/09 2:45 pm	7/9/09 9:00 am
0907002-14	YS07-GW01-0709	Water	7/8/09 10:30 am	7/9/09 9:00 am
0907002-15	YS07-EB01-070809	Water	7/8/09 11:00 am	7/9/09 9:00 am
0907002-16	YS07-GW02-0709	Water	7/8/09 1:45 pm	7/9/09 9:00 am

CompuChem, a Division of Liberty Analytical Corporation

I. SAMPLE DATA SUMMARY PACKAGE

GC/MS by SW-846

The sample data summary package shall contain data for all samples in one Sample Delivery Group (SDG) of the Case, as follows:

A. SDG Narrative

B. Tabulated target compound results (Form I)
Tentatively identified compounds (Form I, TIC)
In order by sample.

C. Surrogate spike analysis results (Form II)
By matrix (Water or Soil), and
by concentration (Low, Medium, or High)

D. Spike results MS / MSD / LCS (Form III)

E. Blank data (Form IV)
Tabulated blank results (Form I)
Tentatively identified compounds (Form I, TIC)

F. Internal standard area response and retention time data (Form VIII)

LAB CODE : LIBRTY METHOD: 8260B

CASE # : _____ SDG # : 0907002

A. SDG Narrative

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0907002
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS06-GW16-0609, YS06-EB01-063009, YS06-FB01-063009, YS06-TB01-063009, TS07-GW05-0709, YS07-GW05P-0709, YS07-EB01-070709, YS07-TB01-070709, YS07-FB01-070809, and YS07-TB01-070709

The 10 aqueous samples listed above were received intact, refrigerated between 0.6°C and 4.3°C, with proper documentation, in sealed shipping containers, on July 1, 8, and 9, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0907002 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples were equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) in eight/10 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration files 9G01002-CAL171 and 9G01002-CAL271 and continuing calibration file 9G02001-CCV1R71. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (VJHLCS/VJHLCSD), (VJILCS/VJILCSD), and (VJXLCS) met overall accuracy criteria. Sample YS07-GW05-0709 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
July 28, 2009

GC and GC/MS Column and Trap Specifications Table

SDG #: 0907002

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-SMS	0.53	1.0	30
√	Restek	clpest	0.32	0.5	30
√	Restek	clpest2	0.32	0.42	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
√	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
√	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

	GC and GC/MS Volatiles Laboratory	
	Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C
		* 1.2 cm Carbopack B
√	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 28

* This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semi-volatiles, pesticides, and Aroclors by the SOM01.2 SOW. Please see the SDG Narratives(s) for the specific fraction(s) relative to this SDG.

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.).

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.

H - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

M1 - The compound was not found by the automatic integration routine.

M2 - The compound was incorrectly integrated by the automatic integration routine.

M3 - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches ≥ 85% in the SOM01.2 SOW document), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the Form I for the more diluted sample, and **all** reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Forms I are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single Form I.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

B. Form I and Form I - TIC

Organic Analysis Data Sheet (OADS) and Tentatively Identified Compounds (TICs)

- All samples in alphanumeric order
- Matrix Spike/Matrix Spike Duplicate
- Laboratory Control Sample(s)

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.2	
74-87-3	Chloromethane	5.1	
75-01-4	Vinyl Chloride	5.8	
74-83-9	Bromomethane	5.1	
75-00-3	Chloroethane	5.8	
75-69-4	Trichlorofluoromethane	5.4	
75-35-4	1,1-Dichloroethene	5.3	
75-15-0	Carbon disulfide	5.5	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.4	
67-64-1	Acetone	26	
79-20-9	Methyl acetate	5.9	
75-09-2	Methylene Chloride	4.9	
156-60-5	trans-1,2-Dichloroethene	5.2	
1634-04-4	Methyl-tert-butyl ether	5.4	
75-34-3	1,1-Dichloroethane	5.5	
156-59-2	cis-1,2-Dichloroethene	5.2	
78-93-3	2-butanone	28	
67-66-3	Chloroform	5.3	
71-55-6	1,1,1-Trichloroethane	5.2	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	5.4	
107-06-2	1,2-Dichloroethane	5.4	
79-01-6	Trichloroethene	5.1	
78-87-5	1,2-Dichloropropane	5.7	
75-27-4	Bromodichloromethane	5.3	
10061-01-5	cis-1,3-Dichloropropene	5.4	
108-10-1	4-Methyl-2-pentanone	27	
108-88-3	Toluene	5.2	
10061-02-6	trans-1,3-Dichloropropene	5.5	
79-00-5	1,1,2-Trichloroethane	5.3	
127-18-4	Tetrachloroethene	4.9	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.2	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.3	
108-90-7	Chlorobenzene	5.1	
100-41-4	Ethylbenzene	5.2	
108-38-3	m,p-Xylene	10	
95-47-6	o-Xylene	5.3	
100-42-5	Styrene	5.3	
75-25-2	Bromoform	5.0	
98-82-8	Isopropyl Benzene	5.2	
79-34-5	1,1,2,2-Tetrachloroethane	5.2	
541-73-1	1,3-Dichlorobenzene	4.9	
106-46-7	1,4-Dichlorobenzene	4.9	
95-50-1	1,2-Dichlorobenzene	5.0	
96-12-8	1,2-Dibromo-3-Chloropropane	4.9	
120-82-1	1,2,4-Trichlorobenzene	4.8	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	16	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.5	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.7	
74-87-3	Chloromethane	5.5	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	5.7	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	5.5	
75-15-0	Carbon disulfide	5.6	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.3	
67-64-1	Acetone	26	
79-20-9	Methyl acetate	5.6	
75-09-2	Methylene Chloride	5.3	
156-60-5	trans-1,2-Dichloroethene	5.5	
1634-04-4	Methyl-tert-butyl ether	5.6	
75-34-3	1,1-Dichloroethane	5.9	
156-59-2	cis-1,2-Dichloroethene	5.6	
78-93-3	2-butanone	28	
67-66-3	Chloroform	5.6	
71-55-6	1,1,1-Trichloroethane	5.3	
56-23-5	Carbon Tetrachloride	5.3	
71-43-2	Benzene	5.7	
107-06-2	1,2-Dichloroethane	5.7	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	5.6	
10061-01-5	cis-1,3-Dichloropropene	5.4	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.5	
10061-02-6	trans-1,3-Dichloropropene	5.6	
79-00-5	1,1,2-Trichloroethane	5.7	
127-18-4	Tetrachloroethene	5.1	
591-78-6	2-hexanone	29	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.6	
108-90-7	Chlorobenzene	5.5	
100-41-4	Ethylbenzene	5.5	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.6	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	5.2	
98-82-8	Isopropyl Benzene	5.5	
79-34-5	1,1,2,2-Tetrachloroethane	5.7	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	5.3	
120-82-1	1,2,4-Trichlorobenzene	5.1	
540-59-0	1,2-Dichloroethene (total)	11	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.5	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.1	
74-87-3	Chloromethane	4.8	
75-01-4	Vinyl Chloride	5.3	
74-83-9	Bromomethane	5.3	
75-00-3	Chloroethane	5.5	
75-69-4	Trichlorofluoromethane	5.1	
75-35-4	1,1-Dichloroethene	4.7	
75-15-0	Carbon disulfide	5.0	
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.8	
67-64-1	Acetone	26	
79-20-9	Methyl acetate	6.0	
75-09-2	Methylene Chloride	4.6	
156-60-5	trans-1,2-Dichloroethene	4.7	
1634-04-4	Methyl-tert-butyl ether	5.4	
75-34-3	1,1-Dichloroethane	5.5	
156-59-2	cis-1,2-Dichloroethene	4.9	
78-93-3	2-butanone	29	
67-66-3	Chloroform	5.1	
71-55-6	1,1,1-Trichloroethane	4.8	
56-23-5	Carbon Tetrachloride	4.8	
71-43-2	Benzene	5.1	
107-06-2	1,2-Dichloroethane	5.6	
79-01-6	Trichloroethene	4.6	
78-87-5	1,2-Dichloropropane	5.8	
75-27-4	Bromodichloromethane	5.2	
10061-01-5	cis-1,3-Dichloropropene	5.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	4.7	
10061-02-6	trans-1,3-Dichloropropene	5.3	
79-00-5	1,1,2-Trichloroethane	5.0	
127-18-4	Tetrachloroethene	4.0	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	4.9	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	4.9	
108-90-7	Chlorobenzene	4.7	
100-41-4	Ethylbenzene	4.6	
108-38-3	m,p-Xylene	9.2	
95-47-6	o-Xylene	4.7	
100-42-5	Styrene	4.7	
75-25-2	Bromoform	4.4	
98-82-8	Isopropyl Benzene	4.6	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.6	
95-50-1	1,2-Dichlorobenzene	4.7	
96-12-8	1,2-Dibromo-3-Chloropropane	5.3	
120-82-1	1,2,4-Trichlorobenzene	4.2	
540-59-0	1,2-Dichloroethene (total)	9.6	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	4.7	
108-87-2	Methylcyclohexane	5.0	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.4	
74-87-3	Chloromethane	5.0	
75-01-4	Vinyl Chloride	5.6	
74-83-9	Bromomethane	5.6	
75-00-3	Chloroethane	5.6	
75-69-4	Trichlorofluoromethane	5.3	
75-35-4	1,1-Dichloroethene	4.9	
75-15-0	Carbon disulfide	5.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.1	
67-64-1	Acetone	25	
79-20-9	Methyl acetate	6.3	
75-09-2	Methylene Chloride	4.7	
156-60-5	trans-1,2-Dichloroethene	5.0	
1634-04-4	Methyl-tert-butyl ether	5.3	
75-34-3	1,1-Dichloroethane	5.6	
156-59-2	cis-1,2-Dichloroethene	5.0	
78-93-3	2-butanone	28	
67-66-3	Chloroform	5.2	
71-55-6	1,1,1-Trichloroethane	5.0	
56-23-5	Carbon Tetrachloride	5.0	
71-43-2	Benzene	5.3	
107-06-2	1,2-Dichloroethane	5.6	
79-01-6	Trichloroethene	4.8	
78-87-5	1,2-Dichloropropane	6.0	
75-27-4	Bromodichloromethane	5.2	
10061-01-5	cis-1,3-Dichloropropene	5.4	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.4	
79-00-5	1,1,2-Trichloroethane	5.2	
127-18-4	Tetrachloroethene	4.4	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.0	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.1	
108-90-7	Chlorobenzene	5.0	
100-41-4	Ethylbenzene	5.0	
108-38-3	m,p-Xylene	10	
95-47-6	o-Xylene	5.1	
100-42-5	Styrene	5.0	
75-25-2	Bromoform	4.5	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	4.8	
106-46-7	1,4-Dichlorobenzene	4.9	
95-50-1	1,2-Dichlorobenzene	4.9	
96-12-8	1,2-Dibromo-3-Chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	4.4	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	16	
110-82-7	Cyclohexane	5.0	
108-87-2	Methylcyclohexane	5.3	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJXLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.1	
74-87-3	Chloromethane	5.1	
75-01-4	Vinyl Chloride	5.9	
74-83-9	Bromomethane	5.8	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.6	
75-35-4	1,1-Dichloroethene	4.9	
75-15-0	Carbon disulfide	5.3	
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.8	
67-64-1	Acetone	25	
79-20-9	Methyl acetate	6.5	
75-09-2	Methylene Chloride	4.9	
156-60-5	trans-1,2-Dichloroethene	5.1	
1634-04-4	Methyl-tert-butyl ether	5.5	
75-34-3	1,1-Dichloroethane	5.7	
156-59-2	cis-1,2-Dichloroethene	5.3	
78-93-3	2-butanone	29	
67-66-3	Chloroform	5.4	
71-55-6	1,1,1-Trichloroethane	5.0	
56-23-5	Carbon Tetrachloride	4.9	
71-43-2	Benzene	5.5	
107-06-2	1,2-Dichloroethane	5.7	
79-01-6	Trichloroethene	4.8	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	5.4	
10061-01-5	cis-1,3-Dichloropropene	5.5	
108-10-1	4-Methyl-2-pentanone	28	
108-88-3	Toluene	4.8	
10061-02-6	trans-1,3-Dichloropropene	5.3	
79-00-5	1,1,2-Trichloroethane	5.2	
127-18-4	Tetrachloroethene	4.0	
591-78-6	2-hexanone	27	
124-48-1	Dibromochloromethane	4.9	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJXLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.0	
108-90-7	Chlorobenzene	4.8	
100-41-4	Ethylbenzene	4.7	
108-38-3	m,p-Xylene	9.4	
95-47-6	o-Xylene	4.8	
100-42-5	Styrene	4.9	
75-25-2	Bromoform	4.4	
98-82-8	Isopropyl Benzene	4.6	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.6	
95-50-1	1,2-Dichlorobenzene	4.6	
96-12-8	1,2-Dibromo-3-Chloropropane	5.3	
120-82-1	1,2,4-Trichlorobenzene	4.1	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	4.8	
108-87-2	Methylcyclohexane	5.1	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0271

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.6	
79-20-9	Methyl acetate	0.65	
75-09-2	Methylene Chloride	0.86	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	9.7	
67-66-3	Chloroform	0.13	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.3	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.76	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0271

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0371

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.8	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.1	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.5	
67-66-3	Chloroform	0.11	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.5	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.92	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0371

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-GW16-0609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0171

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.25	J
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.16	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW16-0609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0171

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.25	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-04R71

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-04R71

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1071

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	18	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.91	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.20	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0.
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1071

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-FB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1271

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	22	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.31	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.3	
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.1	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.26	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-FB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1271

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0871

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.7	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.6	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.11	J
75-34-3	1,1-Dichloroethane	7.0	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	
71-55-6	1,1,1-Trichloroethane	3.4	
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.32	J
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.21	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.11	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0871

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MS171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.2	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	6.1	
75-00-3	Chloroethane	6.3	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	6.8	
75-15-0	Carbon disulfide	6.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.1	
67-64-1	Acetone	28	
79-20-9	Methyl acetate	7.1	
75-09-2	Methylene Chloride	5.6	
156-60-5	trans-1,2-Dichloroethene	5.8	
1634-04-4	Methyl-tert-butyl ether	6.0	
75-34-3	1,1-Dichloroethane	13	
156-59-2	cis-1,2-Dichloroethene	6.0	
78-93-3	2-butanone	30	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	8.8	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	6.2	
107-06-2	1,2-Dichloroethane	6.5	
79-01-6	Trichloroethene	5.5	
78-87-5	1,2-Dichloropropane	7.1	
75-27-4	Bromodichloromethane	6.3	
10061-01-5	cis-1,3-Dichloropropene	6.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.5	
10061-02-6	trans-1,3-Dichloropropene	6.2	
79-00-5	1,1,2-Trichloroethane	5.8	
127-18-4	Tetrachloroethene	4.2	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MS171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.5	
108-90-7	Chlorobenzene	5.4	
100-41-4	Ethylbenzene	5.2	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.4	
100-42-5	Styrene	5.4	
75-25-2	Bromoform	4.6	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	6.2	
541-73-1	1,3-Dichlorobenzene	5.1	
106-46-7	1,4-Dichlorobenzene	5.0	
95-50-1	1,2-Dichlorobenzene	5.1	
96-12-8	1,2-Dibromo-3-Chloropropane	5.6	
120-82-1	1,2,4-Trichlorobenzene	4.2	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	17	
110-82-7	Cyclohexane	4.9	
108-87-2	Methylcyclohexane	4.9	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MSD171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.3	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	6.3	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	7.3	
75-15-0	Carbon disulfide	6.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.3	
67-64-1	Acetone	29	
79-20-9	Methyl acetate	6.7	
75-09-2	Methylene Chloride	5.7	
156-60-5	trans-1,2-Dichloroethene	5.9	
1634-04-4	Methyl-tert-butyl ether	6.2	
75-34-3	1,1-Dichloroethane	13	
156-59-2	cis-1,2-Dichloroethene	6.0	
78-93-3	2-butanone	30	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	8.9	
56-23-5	Carbon Tetrachloride	5.5	
71-43-2	Benzene	6.3	
107-06-2	1,2-Dichloroethane	6.5	
79-01-6	Trichloroethene	5.7	
78-87-5	1,2-Dichloropropane	7.1	
75-27-4	Bromodichloromethane	6.3	
10061-01-5	cis-1,3-Dichloropropene	6.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.7	
10061-02-6	trans-1,3-Dichloropropene	6.3	
79-00-5	1,1,2-Trichloroethane	5.8	
127-18-4	Tetrachloroethene	4.6	
591-78-6	2-hexanone	29	
124-48-1	Dibromochloromethane	5.6	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MSD171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.6	
108-90-7	Chlorobenzene	5.7	
100-41-4	Ethylbenzene	5.5	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.7	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	4.8	
98-82-8	Isopropyl Benzene	5.3	
79-34-5	1,1,2,2-Tetrachloroethane	6.3	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.3	
95-50-1	1,2-Dichlorobenzene	5.3	
96-12-8	1,2-Dibromo-3-Chloropropane	6.0	
120-82-1	1,2,4-Trichlorobenzene	4.5	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.3	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0971

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.9	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.8	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.11	J
75-34-3	1,1-Dichloroethane	7.5	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.47	J
71-55-6	1,1,1-Trichloroethane	3.6	
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.32	J
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.17	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0971

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1371

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

AMENDED DATA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1371

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

AMENDED DATA

C. Form II

Surrogate spike analysis

- By level (low, medium, high) -

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	VBLKJH	100	104	100	97	0
02	VJHLCS	98	105	99	91	0
03	VJHLCSD	97	100	100	98	0
04	YS06-FB01-063009	99	109	100	100	0
05	YS06-EB01-063009	101	110	102	103	0
06	YS06-GW16-0609	100	112	102	100	0
07	VBLKJI	93	102	89	95	0
08	VJILCS	93	106	90	95	0
09	VJILCSD	93	102	93	94	0
10	YS06-TB01-063009	94	105	94	99	0
11	VBLKJX	97	103	98	102	0
12	VJXLCS	97	107	95	98	0
13	YS07-GW05-0709	99	110	99	107	0
14	YS07-GW05P-0709	98	109	102	108	0
15	YS07-EB01-070709	96	108	102	108	0
16	YS07-TB01-070709	100	115	101	108	0
17	YS07-FB01-070809	99	111	103	110	0
18	YS07-TB01-070809	100	115	101	111	0
19	YS07-GW05-0709MS	98	110	100	106	0
20	YS07-GW05-0709MSD	99	109	101	106	0
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1 (DBF)	= Dibromofluoromethane	(85-115)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-120)
SMC3 (TOL)	= Toluene-d8	(85-120)
SMC4 (BFB)	= Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

AMENDED DATA

D. Form III

Matrix Spike/Matrix Spike Duplicate results
- By level (low, medium, high) -
Laboratory Control Sample(s)

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5	0.0	4.248	85	30-155
Chloromethane	5	0.0	5.426	109	40-125
Vinyl Chloride	5	0.0	6.144	123	50-145
Bromomethane	5	0.0	6.073	121	30-145
Chloroethane	5	0.0	6.309	126	60-135
Trichlorofluoromethane	5	0.0	5.836	117	60-145
1,1-Dichloroethene	5	1.719	6.841	102	70-130
Carbon disulfide	5	0.0	6.2	124	35-160
1,1,2-trichloro-1,2,2-t	5	0.0	5.086	102	50-150
Acetone	25	2.569	27.96	102	30-155
Methyl acetate	5	0.0	7.105	142	30-150
Methylene Chloride	5	0.0	5.647	113	55-140
trans-1,2-Dichloroethen	5	0.0	5.8	116	60-140
Methyl-tert-butyl ether	5	0.111	6.024	118	65-125
1,1-Dichloroethane	5	6.97	13.32	127	70-135
cis-1,2-Dichloroethene	5	0.0	6	120	70-125
2-butanone	25	0.0	29.62	118	30-150
Chloroform	5	0.5004	6.699	124	65-135
1,1,1-Trichloroethane	5	3.386	8.808	108	65-130
Carbon Tetrachloride	5	0.0	5.245	105	65-145
Benzene	5	0.0	6.215	124*	80-120
1,2-Dichloroethane	5	0.0	6.5	130	70-130
Trichloroethene	5	0.3207	5.515	104	70-125
1,2-Dichloropropane	5	0.0	7.085	142*	75-125
Bromodichloromethane	5	0.2062	6.268	121*	75-120
cis-1,3-Dichloropropene	5	0.0	6.258	125	70-130
4-Methyl-2-pentanone	25	0.0	28.5	114	60-135
Toluene	5	0.0	5.451	109	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5	0.0	6.188	124	55-140
1,1,2-Trichloroethane	5	0.0	5.819	116	75-152
Tetrachloroethene	5	0.0	4.241	85	45-150
2-hexanone	25	0.0	28.12	112	55-130
Dibromochloromethane	5	0.1087	5.423	106	60-135
1,2-Dibromoethane	5	0.0	5.549	111	80-120
Chlorobenzene	5	0.0	5.388	108	80-120
Ethylbenzene	5	0.0	5.248	105	75-125
Styrene	5	0.0	5.407	108	65-135
Bromoform	5	0.0	4.591	92	70-130
Isopropyl Benzene	5	0.0	4.975	99	75-125
1,1,2,2-Tetrachloroetha	5	0.0	6.157	123	80-130
1,3-Dichlorobenzene	5	0.0	5.081	102	75-125
1,4-Dichlorobenzene	5	0.0	5	100	75-125
1,2-Dichlorobenzene	5	0.0	5.09	102	70-120
1,2-Dibromo-3-Chloropro	5	0.0	5.644	113	50-130
1,2,4-Trichlorobenzene	5	0.0	4.215	84	65-135
1,2-Dichloroethene (tot	10	0.0	12	120	30-155
Xylene (total)	15	0.0	16.8	112	50-150
Cyclohexane	5	0.0	4.852	97	50-150
Methylcyclohexane	5	0.0	4.851	97	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	4.273	85	1	30	30-155
Chloromethane	5	5.386	108	1	30	40-125
Vinyl Chloride	5	6.112	122	1	30	50-145
Bromomethane	5	6.321	126	4	30	30-145
Chloroethane	5	6.079	122	4	30	60-135
Trichlorofluoromethane	5	5.757	115	1	30	60-145
1,1-Dichloroethene	5	7.348	113	7	30	70-130
Carbon disulfide	5	6.154	123	1	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.31	106	4	30	50-150
Acetone	25	28.63	104	2	30	30-155
Methyl acetate	5	6.681	134	6	30	30-150
Methylene Chloride	5	5.703	114	1	30	55-140
trans-1,2-Dichloroethen	5	5.9	118	2	30	60-140
Methyl-tert-butyl ether	5	6.184	121	3	30	65-125
1,1-Dichloroethane	5	13.19	124	1	30	70-135
cis-1,2-Dichloroethene	5	6	120	0	30	70-125
2-butanone	25	29.91	120	1	30	30-150
Chloroform	5	6.678	124	0	30	65-135
1,1,1-Trichloroethane	5	8.882	110	1	30	65-130
Carbon Tetrachloride	5	5.473	109	4	30	65-145
Benzene	5	6.299	126*	1	30	80-120
1,2-Dichloroethane	5	6.465	129	1	30	70-130
Trichloroethene	5	5.681	107	3	30	70-125
1,2-Dichloropropane	5	7.088	142*	0	30	75-125
Bromodichloromethane	5	6.259	121*	0	30	75-120
cis-1,3-Dichloropropene	5	6.258	125	0	30	70-130
4-Methyl-2-pentanone	25	28.61	114	0	30	60-135
Toluene	5	5.694	114	4	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	6.296	126	2	30	55-140
1,1,2-Trichloroethane	5	5.835	117	0	30	75-152
Tetrachloroethene	5	4.594	92	8	30	45-150
2-hexanone	25	28.73	115	2	30	55-130
Dibromochloromethane	5	5.636	111	4	30	60-135
1,2-Dibromoethane	5	5.617	112	1	30	80-120
Chlorobenzene	5	5.665	113	5	30	80-120
Ethylbenzene	5	5.491	110	5	30	75-125
Styrene	5	5.645	113	4	30	65-135
Bromoform	5	4.764	95	4	30	70-130
Isopropyl Benzene	5	5.335	107	7	30	75-125
1,1,2,2-Tetrachloroetha	5	6.285	126	2	30	80-130
1,3-Dichlorobenzene	5	5.261	105	3	30	75-125
1,4-Dichlorobenzene	5	5.33	107	6	30	75-125
1,2-Dichlorobenzene	5	5.33	107	5	30	70-120
1,2-Dibromo-3-Chloropro	5	6.033	121	7	30	50-130
1,2,4-Trichlorobenzene	5	4.527	91	7	30	65-135
1,2-Dichloroethene (tot	10	12	120	0	30	30-155
Xylene (total)	15	17.59	117	5	30	50-150
Cyclohexane	5	5.216	104	7	30	50-150
Methylcyclohexane	5	5.334	107	9	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 49 outside limits
Spike Recovery: 6 out of 98 outside limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5		5.212	104	30-155
Chloromethane	5		5.136	103	40-125
Vinyl Chloride	5		5.764	115	50-145
Bromomethane	5		5.081	102	30-145
Chloroethane	5		5.839	117	60-135
Trichlorofluoromethane	5		5.404	108	60-145
1,1-Dichloroethene	5		5.35	107	70-130
Carbon disulfide	5		5.488	110	35-160
1,1,2-trichloro-1,2,2-t	5		5.35	107	50-150
Acetone	25		25.82	103	30-155
Methyl acetate	5		5.857	117	30-150
Methylene Chloride	5		4.921	98	55-140
trans-1,2-Dichloroethen	5		5.2	104	60-140
Methyl-tert-butyl ether	5		5.406	108	65-125
1,1-Dichloroethane	5		5.46	109	70-135
cis-1,2-Dichloroethene	5		5.2	104	70-125
2-butanone	25		27.77	111	30-150
Chloroform	5		5.273	105	65-135
1,1,1-Trichloroethane	5		5.194	104	65-130
Carbon Tetrachloride	5		5.219	104	65-145
Benzene	5		5.354	107	80-120
1,2-Dichloroethane	5		5.431	109	70-130
Trichloroethene	5		5.104	102	70-125
1,2-Dichloropropane	5		5.74	115	75-125
Bromodichloromethane	5		5.31	106	75-120
cis-1,3-Dichloropropene	5		5.399	108	70-130
4-Methyl-2-pentanone	25		27.48	110	60-135
Toluene	5		5.153	103	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5		5.477	110	55-140
1,1,2-Trichloroethane	5		5.292	106	75-152
Tetrachloroethene	5		4.909	98	45-150
2-hexanone	25		27.9	112	55-130
Dibromochloromethane	5		5.206	104	60-135
1,2-Dibromoethane	5		5.261	105	80-120
Chlorobenzene	5		5.134	103	80-120
Ethylbenzene	5		5.158	103	75-125
Styrene	5		5.261	105	65-135
Bromoform	5		5.023	100	70-130
Isopropyl Benzene	5		5.228	105	75-125
1,1,2,2-Tetrachloroetha	5		5.183	104	80-130
1,3-Dichlorobenzene	5		4.867	97	75-125
1,4-Dichlorobenzene	5		4.897	98	75-125
1,2-Dichlorobenzene	5		4.95	99	70-120
1,2-Dibromo-3-Chloropro	5		4.874	97	50-130
1,2,4-Trichlorobenzene	5		4.819	96	65-135
1,2-Dichloroethene (tot	10		10	100	30-155
Xylene (total)	15		16.46	110	50-150
Cyclohexane	5		5.243	105	50-150
Methylcyclohexane	5		5.459	109	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	5.743	115	10	30	30-155
Chloromethane	5	5.498	110	7	30	40-125
Vinyl Chloride	5	6.088	122	6	30	50-145
Bromomethane	5	5.669	113	10	30	30-145
Chloroethane	5	6.144	123	5	30	60-135
Trichlorofluoromethane	5	5.819	116	7	30	60-145
1,1-Dichloroethene	5	5.515	110	3	30	70-130
Carbon disulfide	5	5.626	113	3	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.282	106	1	30	50-150
Acetone	25	25.5	102	1	30	30-155
Methyl acetate	5	5.619	112	4	30	30-150
Methylene Chloride	5	5.32	106	8	30	55-140
trans-1,2-Dichloroethen	5	5.5	110	6	30	60-140
Methyl-tert-butyl ether	5	5.631	113	5	30	65-125
1,1-Dichloroethane	5	5.883	118	8	30	70-135
cis-1,2-Dichloroethene	5	5.6	112	7	30	70-125
2-butanone	25	27.78	111	0	30	30-150
Chloroform	5	5.641	113	7	30	65-135
1,1,1-Trichloroethane	5	5.331	107	3	30	65-130
Carbon Tetrachloride	5	5.286	106	2	30	65-145
Benzene	5	5.708	114	6	30	80-120
1,2-Dichloroethane	5	5.705	114	4	30	70-130
Trichloroethene	5	5.344	107	5	30	70-125
1,2-Dichloropropane	5	6.076	122	6	30	75-125
Bromodichloromethane	5	5.572	111	5	30	75-120
cis-1,3-Dichloropropene	5	5.375	108	0	30	70-130
4-Methyl-2-pentanone	25	28.89	116	5	30	60-135
Toluene	5	5.531	111	7	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	5.644	113	3	30	55-140
1,1,2-Trichloroethane	5	5.662	113	6	30	75-152
Tetrachloroethene	5	5.054	101	3	30	45-150
2-hexanone	25	28.64	115	3	30	55-130
Dibromochloromethane	5	5.436	109	5	30	60-135
1,2-Dibromoethane	5	5.563	111	6	30	80-120
Chlorobenzene	5	5.541	111	7	30	80-120
Ethylbenzene	5	5.513	110	7	30	75-125
Styrene	5	5.566	111	6	30	65-135
Bromoform	5	5.23	105	5	30	70-130
Isopropyl Benzene	5	5.451	109	4	30	75-125
1,1,2,2-Tetrachloroetha	5	5.723	114	9	30	80-130
1,3-Dichlorobenzene	5	5.314	106	9	30	75-125
1,4-Dichlorobenzene	5	5.442	109	11	30	75-125
1,2-Dichlorobenzene	5	5.447	109	10	30	70-120
1,2-Dibromo-3-Chloropro	5	5.317	106	9	30	50-130
1,2,4-Trichlorobenzene	5	5.059	101	5	30	65-135
1,2-Dichloroethene (tot	10	11	110	10	30	30-155
Xylene (total)	15	17.52	117	6	30	50-150
Cyclohexane	5	5.198	104	1	30	50-150
Methylcyclohexane	5	5.456	109	0	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 49 outside limits
Spike Recovery: 0 out of 98 outside limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5		4.088	82	30-155
Chloromethane	5		4.847	97	40-125
Vinyl Chloride	5		5.293	106	50-145
Bromomethane	5		5.334	107	30-145
Chloroethane	5		5.511	110	60-135
Trichlorofluoromethane	5		5.051	101	60-145
1,1-Dichloroethene	5		4.726	95	70-130
Carbon disulfide	5		4.958	99	35-160
1,1,2-trichloro-1,2,2-t	5		4.761	95	50-150
Acetone	25		25.77	103	30-155
Methyl acetate	5		6.033	121	30-150
Methylene Chloride	5		4.568	91	55-140
trans-1,2-Dichloroethen	5		4.7	94	60-140
Methyl-tert-butyl ether	5		5.403	108	65-125
1,1-Dichloroethane	5		5.468	109	70-135
cis-1,2-Dichloroethene	5		4.9	98	70-125
2-butanone	25		29.24	117	30-150
Chloroform	5		5.1	102	65-135
1,1,1-Trichloroethane	5		4.788	96	65-130
Carbon Tetrachloride	5		4.78	96	65-145
Benzene	5		5.145	103	80-120
1,2-Dichloroethane	5		5.644	113	70-130
Trichloroethene	5		4.596	92	70-125
1,2-Dichloropropane	5		5.844	117	75-125
Bromodichloromethane	5		5.235	105	75-120
cis-1,3-Dichloropropene	5		5.315	106	70-130
4-Methyl-2-pentanone	25		28.63	115	60-135
Toluene	5		4.705	94	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5		5.334	107	55-140
1,1,2-Trichloroethane	5		5.035	101	75-152
Tetrachloroethene	5		4.006	80	45-150
2-hexanone	25		28.41	114	55-130
Dibromochloromethane	5		4.851	97	60-135
1,2-Dibromoethane	5		4.886	98	80-120
Chlorobenzene	5		4.667	93	80-120
Ethylbenzene	5		4.6	92	75-125
Styrene	5		4.733	95	65-135
Bromoform	5		4.398	88	70-130
Isopropyl Benzene	5		4.623	92	75-125
1,1,2,2-Tetrachloroetha	5		5.536	111	80-130
1,3-Dichlorobenzene	5		4.638	93	75-125
1,4-Dichlorobenzene	5		4.591	92	75-125
1,2-Dichlorobenzene	5		4.727	95	70-120
1,2-Dibromo-3-Chloropro	5		5.321	106	50-130
1,2,4-Trichlorobenzene	5		4.197	84	65-135
1,2-Dichloroethene (tot	10		9.6	96	30-155
Xylene (total)	15		14.68	98	50-150
Cyclohexane	5		4.676	94	50-150
Methylcyclohexane	5		4.96	99	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	4.42	88	7	30	30-155
Chloromethane	5	5	100	3	30	40-125
Vinyl Chloride	5	5.569	111	5	30	50-145
Bromomethane	5	5.647	113	5	30	30-145
Chloroethane	5	5.614	112	2	30	60-135
Trichlorofluoromethane	5	5.308	106	5	30	60-145
1,1-Dichloroethene	5	4.91	98	3	30	70-130
Carbon disulfide	5	5.229	105	6	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.123	102	7	30	50-150
Acetone	25	25.24	101	2	30	30-155
Methyl acetate	5	6.264	125	3	30	30-150
Methylene Chloride	5	4.679	94	3	30	55-140
trans-1,2-Dichloroethen	5	5	100	6	30	60-140
Methyl-tert-butyl ether	5	5.34	107	1	30	65-125
1,1-Dichloroethane	5	5.628	113	4	30	70-135
cis-1,2-Dichloroethene	5	5	100	2	30	70-125
2-butanone	25	28.46	114	3	30	30-150
Chloroform	5	5.231	105	3	30	65-135
1,1,1-Trichloroethane	5	5.046	101	5	30	65-130
Carbon Tetrachloride	5	5.024	100	4	30	65-145
Benzene	5	5.276	106	3	30	80-120
1,2-Dichloroethane	5	5.594	112	1	30	70-130
Trichloroethene	5	4.793	96	4	30	70-125
1,2-Dichloropropane	5	6.037	121	3	30	75-125
Bromodichloromethane	5	5.241	105	0	30	75-120
cis-1,3-Dichloropropene	5	5.353	107	1	30	70-130
4-Methyl-2-pentanone	25	28.6	114	1	30	60-135
Toluene	5	4.983	100	6	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	5.386	108	1	30	55-140
1,1,2-Trichloroethane	5	5.212	104	3	30	75-152
Tetrachloroethene	5	4.366	87	8	30	45-150
2-hexanone	25	28.49	114	0	30	55-130
Dibromochloromethane	5	4.972	99	2	30	60-135
1,2-Dibromoethane	5	5.056	101	3	30	80-120
Chlorobenzene	5	4.993	100	7	30	80-120
Ethylbenzene	5	4.976	100	8	30	75-125
Styrene	5	5.016	100	5	30	65-135
Bromoform	5	4.519	90	2	30	70-130
Isopropyl Benzene	5	4.967	99	7	30	75-125
1,1,2,2-Tetrachloroetha	5	5.501	110	1	30	80-130
1,3-Dichlorobenzene	5	4.797	96	3	30	75-125
1,4-Dichlorobenzene	5	4.889	98	6	30	75-125
1,2-Dichlorobenzene	5	4.943	99	4	30	70-120
1,2-Dibromo-3-Chloropro	5	5.227	105	1	30	50-130
1,2,4-Trichlorobenzene	5	4.448	89	6	30	65-135
1,2-Dichloroethene (tot	10	10	100	4	30	30-155
Xylene (total)	15	15.89	106	8	30	50-150
Cyclohexane	5	4.992	100	6	30	50-150
Methylcyclohexane	5	5.343	107	8	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 49 outside limits
Spike Recovery: 0 out of 98 outside limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJXLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5	4.115	82	30-155
Chloromethane	5	5.124	102	40-125
Vinyl Chloride	5	5.912	118	50-145
Bromomethane	5	5.841	117	30-145
Chloroethane	5	6.092	122	60-135
Trichlorofluoromethane	5	5.582	112	60-145
1,1-Dichloroethene	5	4.896	98	70-130
Carbon disulfide	5	5.265	105	35-160
1,1,2-trichloro-1,2,2-t	5	4.828	97	50-150
Acetone	25	25.47	102	30-155
Methyl acetate	5	6.519	130	30-150
Methylene Chloride	5	4.902	98	55-140
trans-1,2-Dichloroethen	5	5.1	102	60-140
Methyl-tert-butyl ether	5	5.477	110	65-125
1,1-Dichloroethane	5	5.664	113	70-135
cis-1,2-Dichloroethene	5	5.3	106	70-125
2-butanone	25	28.57	114	30-150
Chloroform	5	5.371	107	65-135
1,1,1-Trichloroethane	5	5.031	101	65-130
Carbon Tetrachloride	5	4.93	99	65-145
Benzene	5	5.454	109	80-120
1,2-Dichloroethane	5	5.727	115	70-130
Trichloroethene	5	4.793	96	70-125
1,2-Dichloropropane	5	6.1	122	75-125
Bromodichloromethane	5	5.45	109	75-120
cis-1,3-Dichloropropene	5	5.52	110	70-130
4-Methyl-2-pentanone	25	27.61	110	60-135
Toluene	5	4.8	96	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJXLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5	5.324	106	55-140
1,1,2-Trichloroethane	5	5.19	104	75-152
Tetrachloroethene	5	4.022	80	45-150
2-hexanone	25	27.4	110	55-130
Dibromochloromethane	5	4.888	98	60-135
1,2-Dibromoethane	5	5.03	101	80-120
Chlorobenzene	5	4.831	97	80-120
Ethylbenzene	5	4.709	94	75-125
Styrene	5	4.871	97	65-135
Bromoform	5	4.397	88	70-130
Isopropyl Benzene	5	4.611	92	75-125
1,1,2,2-Tetrachloroetha	5	5.519	110	80-130
1,3-Dichlorobenzene	5	4.57	91	75-125
1,4-Dichlorobenzene	5	4.559	91	75-125
1,2-Dichlorobenzene	5	4.608	92	70-120
1,2-Dibromo-3-Chloropro	5	5.279	106	50-130
1,2,4-Trichlorobenzene	5	4.095	82	65-135
1,2-Dichloroethene (tot	10	10	100	30-155
Xylene (total)	15	14.97	100	50-150
Cyclohexane	5	4.764	95	50-150
Methylcyclohexane	5	5.101	102	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 49 outside limits

COMMENTS: _____

E. Form IV

Method Blank Results
Form IV, Form I, and Form I - TIC

Method blank summary, OADS, and TICs
- In chronological order of analysis

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJH

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9070206-BLK171 Lab Sample ID: 9070206-BLK1

Date Analyzed: 07/02/09 Time Analyzed: 1125

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJHLCS	9070206-BS1	9070206-BS17	1208
02	VJHLCSD	9070206-BSD1	9070206-BSD1	1236
03	YS06-FB01-063009	0907002-03	0907002-0371	1332
04	YS06-EB01-063009	0907002-02	0907002-0271	1400
05	YS06-GW16-0609	0907002-01	0907002-0171	1429
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COMMENTS:

FORM IV VOA

AMENDED DATA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJI

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9070612-BLK171 Lab Sample ID: 9070612-BLK1

Date Analyzed: 07/06/09 Time Analyzed: 1228

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJILCS	9070612-BS1	9070612-BS17	1307
02	VJILCSD	9070612-BSD1	9070612-BSD1	1335
03	YS06-TB01-063009	0907002-04	0907002-04R7	1403
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COMMENTS:

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJX

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9070915-BLK171 Lab Sample ID: 9070915-BLK1

Date Analyzed: 07/09/09 Time Analyzed: 1819

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJXLCS	9070915-BS1	9070915-BS17	1907
02	YS07-GW05-0709	0907002-08	0907002-0871	2003
03	YS07-GW05P-0709	0907002-09	0907002-0971	2031
04	YS07-EB01-070709	0907002-10	0907002-1071	2112
05	YS07-TB01-070709	0907002-11	0907002-1171	2140
06	YS07-FB01-070809	0907002-12	0907002-1271	2208
07	YS07-TB01-070809	0907002-13	0907002-1371	2237
08	YS07-GW05-0709MS	9070915-MS1	9070915-MS17	2305
09	YS07-GW05-0709MSD	9070915-MSD1	9070915-MSD1	2333
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COMMENTS:

FORM IV VOA

AMENDED DATA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJH

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJH

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJI

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJI

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJX

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJX

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

F. Form VIII

Internal standard area and retention time data

(VOA and SV only)

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID (Standard): 9G02001-CCV1R71 Date Analyzed: 07/02/09

Instrument ID: 5972HP71 Time Analyzed: 1047

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	810804	9.88	541115	12.36	267373	14.05
	UPPER LIMIT	1621608	10.38	1082230	12.86	534746	14.55
	LOWER LIMIT	405402	9.38	270557	11.86	133687	13.55
	CLIENT SAMPLE NO.						
01	VBLKJH	793283	9.88	506184	12.35	235567	14.06
02	VJHLCS	788594	9.88	511717	12.36	254163	14.06
03	VJHLCSD	750554	9.88	475822	12.36	219563	14.06
04	YS06-FB01-063009	724281	9.88	461006	12.36	206709	14.05
05	YS06-EB01-063009	758420	9.88	477285	12.36	215827	14.06
06	YS06-GW16-0609	794257	9.88	502620	12.36	228721	14.06
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IS1 (FBZ) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

AMENDED DATA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID (Standard): 9G06001-CCV1R71 Date Analyzed: 07/06/09

Instrument ID: 5972HP71 Time Analyzed: 1152

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	774737	9.88	514504	12.36	223477	14.06
	UPPER LIMIT	1549474	10.38	1029008	12.86	446954	14.56
	LOWER LIMIT	387369	9.38	257252	11.86	111739	13.56
	CLIENT SAMPLE NO.						
01	VBLKJI	762807	9.88	500998	12.36	217218	14.06
02	VJILCS	750344	9.88	499822	12.37	222489	14.06
03	VJILCSD	748519	9.88	485570	12.36	220388	14.06
04	YS06-TB01-063009	755388	9.88	483282	12.36	204024	14.06
05							
06							
07							
08							
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (FBZ) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID (Standard): 9G09007-CCV1R71 Date Analyzed: 07/09/09

Instrument ID: 5972HP71 Time Analyzed: 1738

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	744637	9.88	505922	12.36	221693	14.06
	UPPER LIMIT	1489274	10.38	1011844	12.86	443386	14.56
	LOWER LIMIT	372319	9.38	252961	11.86	110847	13.56
	CLIENT SAMPLE NO.						
01	VBLKJX	730200	9.88	479018	12.36	202482	14.05
02	VJXLCS	710116	9.88	481200	12.36	216773	14.06
03	YS07-GW05-0709	655988	9.88	428572	12.36	180463	14.06
04	YS07-GW05P-0709	626242	9.88	405271	12.36	170250	14.05
05	YS07-EB01-070709	597613	9.88	380641	12.36	159449	14.05
06	YS07-TB01-070709	615412	9.88	400460	12.36	172537	14.06
07	YS07-FB01-070809	603159	9.88	386994	12.36	163519	14.05
08	YS07-TB01-070809	588552	9.88	380604	12.36	159656	14.06
09	YS07-GW05-0709MS	650415	9.88	430067	12.36	192442	14.06
10	YS07-GW05-0709MS	674350	9.89	441192	12.36	197348	14.05
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (FBZ) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM VIII VOA

AMENDED DATA

CompuChem, a Division of Liberty Analytical Corporation

I. SAMPLE DATA PACKAGE

GC/MS by SW-846

The sample data package shall include data for all analyses of all samples in one Sample Delivery Group (SDG), including field samples, dilutions, reanalyses, blanks, matrix spikes, matrix spike duplicates, and laboratory control samples. The sample data package consists of the following:

A. SDG Narrative

B. Chain-of-Custody Documentation

C. SDG Data

LAB CODE : LIBRTY	METHOD: 8260B
CASE # : _____	SDG # : 0907002

A. SDG Narrative

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0907002
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS06-GW16-0609, YS06-EB01-063009, YS06-FB01-063009, YS06-TB01-063009, TS07-GW05-0709, YS07-GW05P-0709, YS07-EB01-070709, YS07-TB01-070709, YS07-FB01-070809, and YS07-TB01-070709 & Condition

The 10 aqueous samples listed above were received intact, refrigerated between 0.6°C and 4.3°C, with proper documentation, in sealed shipping containers, on July 1, 8, and 9, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0907002 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples were equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) in eight/10 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration files 9G01002-CAL171 and 9G01002-CAL271 and continuing calibration file 9G02001-CCV1R71. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (VJHLCS/VJHLCSD), (VJILCS/VJILCSD), and (VJXLCS) met overall accuracy criteria. Sample YS07-GW05-0709 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
July 28, 2009

GC and GC/MS Column and Trap Specifications Table

SDG #: 0907002

COLUMNS*

Columns Utilized	Brand Name	Coating Material	ID (mm)	Film Thickness (um)	Length (m)
	GC Laboratory				
	Restek	RTX-5	0.53	1.0	30
	Restek	RTX-SMS	0.53	1.0	30
√	Restek	clpest	0.32	0.5	30
√	Restek	clpest2	0.32	0.42	30
	J&W	DB-210	0.53	1.0	30
	J&W	GS-GASPRO	0.32	N/A	30
	GC Volatiles Laboratory				
	Restek	RTX-Volatiles	0.53	2.0	30
	GC/MS Volatiles Laboratory				
	Restek	RTX-VMS	0.18	1.0	20
√	Supelco	SPB-624	0.32	1.8	60
	Supelco	SPB-624	0.53	3.0	75
	Phenomonex	ZB-624	0.32	1.8	60
	GC/MS Semivolatiles Laboratory				
√	Restek	RTX-5MS	0.32	0.25	30
	Phenomonex	ZB-5MS	0.32	0.25	30
	HPLC Laboratory				
	Supelco	Supelcosil LC-PAH	4.6	5.0	15 cm
	Supelco	Discovery RP Amide C16	4.6	5.0	25 cm
	Restek	Pinnacle Cyano	4.6	5.0	25 cm
	Restek	Allure C18	4.6	5.0	25 cm

TRAPS*

	GC and GC/MS Volatiles Laboratory	
	Supelco J (BETXTRAP™)	* 7.7 cm Carbopack C
		* 1.2 cm Carbopack B
√	Supelco K (Vocarb3000)	* 10 cm of Carbopack B (Graphitized Carbons)
		* 6 cm of Carboxen 1000 (Carbon molecular sieves)
		* 1 cm of Carboxen 1001 (Carbon molecular sieves)

Rev. 28

* This table contains the GC columns (and volatile organic trap) used for the analysis of volatiles, semi-volatiles, pesticides, and Aroclors by the SOM01.2 SOW. Please see the SDG Narratives(s) for the specific fraction(s) relative to this SDG.

CompuChem

a division of Liberty Analytical Corporation

CompuChem's Pagination Convention

As required by the EPA CLP Statement of Work (SOW) documents, data to be delivered must be paginated (by machine or hand). In the event that the initial numbering is incorrect (a page numbered twice or a page skipped, for example), it is CompuChem's policy to add an alphabetic suffix to a page number when necessary (e.g., 100A, 100B, etc.).

Notification Regarding Manual Editing/Integration Flags

In some instances, manual adjustments to the software output are necessary to provide accurate data. These manual integrations are performed by the data reviewers, GC/MS operators, or GC chemists. An Extracted Ion Current Profile (EICP) or a GC chromatographic peak has been provided for the manual integration performed on each compound to demonstrate the accuracy of that process. The manual integrations are flagged on the quantitation report in the far right column beyond the FINAL concentration for GC/MS analysis, and in the "Flags" column for GC analysis. The manual editing/integration flags are:

M - Denotes that a manual integration has been performed for this compound. The manual integration was performed in order to provide the most accurate area count possible for the peak.

H - Denotes that the data reviewer, GC/MS operator, or GC Chemist has chosen an alternate peak within the retention time window from that chosen by the software for that compound. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

MH - Denotes that an alternate peak has been chosen within the retention time window from that chosen by the software for that compound and also a manual integration of the chosen peak has been performed. The manual integration was performed in order to provide the most accurate area count possible for the peak.

L - Denotes that a data reviewer or GC/MS operator has selected an alternate library search. This is typically done when an additional tentatively identified compound (TIC) has been added to the number of peaks searched. No manual integration is performed in choosing an alternate peak. The software still performs the integration.

ML - Denotes that an alternate library search has been selected and a manual integration has also been performed. This is typically done when an additional TIC has been added and the TIC peak also required a manual integration.

The EPA CLP SOW documents require additional explanations for manual editing/integration. In the accompanying raw data packages, additional codes have been applied to the "M" flag and carry the following meanings;

M1 - The compound was not found by the automatic integration routine.

M2 - The compound was incorrectly integrated by the automatic integration routine.

M3 - The co-eluting compounds were incorrectly integrated by the automatic integration routine.

These codes will appear in the GC/MS and GC raw data.

DATA REPORTING QUALIFIERS

On the Form I, under the column labeled "Q" for qualifier, each result is flagged with the specific data reporting qualifiers listed below, as appropriate. Up to five qualifiers may be reported on Form I for each compound. The qualifiers used are:

U : This flag indicates the compound was analyzed for but not detected. The Contract Required Quantitation Limit (CRQL), or reporting limit, will be adjusted to reflect any dilution and, for soils, the percent moisture.

J : This flag indicates an estimated value. The flag is used as detailed below:

1. When estimating a concentration for tentatively identified compounds (TICs) where a response factor of 1:1 is assumed for the TIC analyte,

2. When the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero, and

3. When the retention time data indicate the presence of a compound that meets the pesticide and/or Aroclor or other GC or HPLC identification criteria, and the result is less than the adjusted CRQL (or Reporting Limit) but greater than zero. For example, if the CRQL (or Reporting Limit) is 10 µg/L, but a concentration of 3 µg/L is calculated, it is reported as 3J.

N : This flag indicates presumptive evidence of a compound. This flag is only used for TICs, where the identification is based on a mass spectral library search and must be used with the J flag. For generic characterization of a TIC such as "chlorinated hydrocarbon" (or for an "unknown," with no matches ≥ 85% in the SOM01.2 SOW document), the N flag is not used.

P : In the EPA's Contract Laboratory Program (CLP), this flag is used for a pesticide/Aroclor target analyte, when there is greater than 25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on the Form I and flagged with a P.
For SW-846 GC and HPLC analyses, when the Relative Percent Difference (RPD) is greater than 40% and there is no evidence of chromatographic anomalies or interferences, then the higher of the two values is reported and flagged with a P. When the RPD is equal to or less than 40%, our policy is to also report the higher of the two values, although the choice could be a project specific issue. For certain HPLC analyses, if one of the HPLC columns displays co-elution of target analytes, all results are reported from a primary column displaying no co-elution. Results are still flagged with a P if the RPD between columns is greater than 40%.

C : This flag applies to GC or HPLC results where the identification has been confirmed by GC/MS. If GC/MS confirmation was attempted but was unsuccessful, this flag is not applied; a laboratory-defined flag is used instead (see the X/Y/Z qualifier.)

DATA REPORTING QUALIFIERS (continued)

B : This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified target compound. The combination of flags BU or UB is not an allowable policy. Blank contaminants are flagged B only when they are detected in the sample.

E : This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis. If one or more compounds have a concentration greater than the upper level of the calibration range, the sample or extract will be diluted and reanalyzed. All such compounds with a concentration greater than the upper level of the calibration range will have the result flagged with an E on Form I for the original analysis.

D : If a sample or extract is reanalyzed at a higher dilution factor, for example when the concentration of an analyte exceeds the upper calibration range, the DL suffix is appended to the sample number on the Form I for the more diluted sample, and all reported concentrations on that Form I are flagged with the D flag. This flag alerts data users that any discrepancies between the reported concentrations may be due to dilution of the sample or extract.

NOTE 1: The D flag is not applied to compounds which are not detected in the sample analysis i.e. compounds reported with the CRQL (or Reporting Limit) and the U flag.

NOTE 2: Separate Forms I are used for reporting the original analysis (Client Sample No. XXXXX) and the more diluted sample analysis (Client Sample No. XXXXXDL) i.e. the results from both analyses are not combined on a single Form I.

A: This flag indicates that a TIC is a suspected aldol-condensation product.

S: In the SOM01.2 SOW document, this flag is used to indicate an estimated value for Aroclor target compounds where a valid 5-point initial calibration was not performed prior to the analytes detection in a sample. If an "S" flag is used for a specific Aroclor, then a reanalysis of the sample is required after a valid 5-point calibration is performed for the detected Aroclor.

X/Y/Z : Other specific flags may be required to properly define the results. If used, the flags will be fully described in the SDG Narrative. The laboratory-defined flags are limited to X, Y, and Z.

B. Chains-of-Custody

The laboratory shall include a copy of the Chain-of-Custody (CoC) documentation for all of the samples in the SDG. The CoC documents shall be arranged in increasing Client Sample ID number order, considering both letters and numbers.

№ 03856

CTO-166

CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Chain/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 Yorktown NWS
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS - Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-8311	Are aqueous samples field filtered for metals? (Y) or N
Sampler's Name: P Murphy ; M. Cist	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs 8260 4 40mL	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	Explo/PETN/1,3,5-DNB 8330 AL	Nitroglycerin 8332 AL	Matrix	Notes
0907002-01 0907003-01	YS06-GW16-0609	6/30/09	0950	AQ	9	3		2				3	1	1	2	2		0907004-01
0907002-04	YS06-TB01-063009	6/30/09	1000	TB	3	3						3				0		
0907002-01 0907003-02	YS06-EB01-063009	6/30/09	1400	AQ	9	3		2				3	1	1	2	2		0907004-02
0907002-03	YS06-FB01-063009	6/30/09	1415	AQ	8	3		2				3	1		2	2		0907004-03

all parameters are now SW846/ DOD Criteria

Sub/Expl 8330

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only	Comments
Sample Unpacked By:	Cyanide samples checked for sulfide & chlorine? Y or (NA)
Sample Order Entry By:	625 & Phenol samples checked for chlorine? Y or (NA)
Samples Received in Good Condition? (Y) or N	608 samples checked for pH between 5.0-9.0? Y or (NA)
If no, explain:	F Metals were field filtered

Sample Custody

Relinquished by:	Date/Time: 6/30/09 1600	Received by:	Date/Time: 7/1/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? (Y) or N If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp 2.6, 4.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

№ 03857

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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (Include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166	Explo 1PETN/3,5-DNA 8330 AL; Nitroglycerin 8332 AL	GW - Ground water WW - Waste water SW - Surface water SO - Soil/Sediment TB - Trip Blank RI - Rinsate WP - Wipe O - Other
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 7		
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		
Phone #: 757-671-4650	Are aqueous samples field filtered for metals? Y or N		
Sampler's Name: P. Murphy C. Bowman	Are high concentrations expected? Y or N? If yes, which ID(s)?		pH (Sample info - Lab Use)

Location Client No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Explo 1PETN/3,5-DNA 8330 AL	Nitroglycerin 8332 AL
0907002-05 0907004-02	YS07-GW03-0709	7/6/09	1255	AQ	4							2	2
0907002-06 0907004-03	YS07-GW04-0709	7/6/09	1500	AQ	4							2	2
0907002-07 0907004-04	YS07-EB01-070609	7/6/09	1545	AQ	4							2	2

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 7/6/09 1730	Received by:	Date/Time: 7/7/09 0930
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where? Expl. PETN 3,5-DNA to CAS Empirical
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 1.9 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

CHAIN OF CUSTODY

№ 03858

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: 757-671-8311
Sampler's Name: P. Murphy C. Bowman

Project Information

Project Name: CTO-166 Site 7
Sampling Location: Yorktown NWS Site 7
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

Lab Use Only	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs 624 40mL	n-Nitrosodiphenylamine 8270C	Explo/PETN/3,5-DNA 8330 AL	Nitroglycerin 8332 AL	Nitroguanidine 8330 40mL	Perchlorate 6850 250mL	Ammonia 350.1 250mL	SUB perch/Nitrog	Ammonia pH (Sample Info (Lab Use))
0907002-08 0907004-07	YS07-GWC5-0709	7/7/09	1130	AQ	39	9			3			(9)	(6)	6	(6)	6	3	(3)	0907028-01 0907029-01	2.6, 1.3
0907002-09 0907004-08	YS07-GWC5P.0709	7/7/09	1200	AQ	13	3			1			(3)	(2)	2	(2)	2	1	(1)	0907028-02 0907029-02	3.5
0907002-11	YS07-TB01-070709	7/7/09	1330	TB	3	3						3								
0907002-10 0907004-09	YS07-EB01-070709	7/7/09	1420	AQ	13	3			1			(3)	(2)	2	(2)	2	1	(1)	0907028-03 0907029-02	2

Residual Chlorine Present?
Yes
No ✓

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Run MS/MSD on GWC5
1) one 250mL Ammonia does not have ID. 1) one Ammonia missing from ID GWC5P. All samples matched COC. [illegible]

Sample Custody

Relinquished by: [signature]	Date/Time: 7/7/09 1800	Received by: [signature]		Date/Time: 7/8/09 0900
Relinquished by:	Date/Time:	Received by:		Date/Time:
Subcontact? (Y) or N If yes, where? EXPL 8330 + PETN 3,5 DNA to Empirical perchlorate 6850 to CAS		Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.6, 2.9 °C

Samples stored 60 days after date report mailed at no extra charge.
Nitroguanidine to CT Labs

White & Yellow copy to lab • Pink copy for customer 2.5, 1.2°C.

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CTO-166

CHAIN OF CUSTODY

№ 03860

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CompuChem
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501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 Site 7
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 7
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6245	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: K Murphy C. Bowman	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis (include method and bottle type): VOCs 8260 40mL	n-Nitrosodiphenylamine 8270C AL	Expl/PETN/3,5-DNA 8330 AL	Nitroglycerin 8332 AL	Nitroguanidine 8330 40mL	Perchlorate 6850 250mL	Ammonia 350.1 250mL	sub perchlorate	Matrix Spike	pH / Sample Info (Lab Use): Ammonia
0907002-11 0907004-11	YS07-GW01-0709	7/8/09	1030	AQ	4									2	2						
0907002-15 0907004-12	YS07-EB01-070809	7/8/09	1100	AQ	4									2	2						
0907002-16 0907004-13	YS07-GW02-0709	7/8/09	1345	AQ	4									2	2						
0907002-12 0907004-10	YS07-FB01-070809	7/8/09	1430	AQ	13	3			1			3	2	2	2	2	1	1	0907002-04 0907029-04	2	
0907002-13	YS07-TB-1-070809	7/8/09	1445	TB	3	3						3									

Residual Chlorine Present?
Yes ___ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments:

Sample Custody

Relinquished by:	Date/Time: 7/8/09 1700	Received by:	Date/Time: 7/9/09 0900
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? (Y) or N If yes, where? Expl 8330 PETN 3,5-DNA to Empirical; Perchlorate 6850 to CAS; Nitroguanadine to CT Labs

Custody Seal(s) intact? (Y) or N On Ice (Y) or N Cooler Temp: 1.9, 2.0, 0.9 C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

89

WORK ORDER

Printed: 7/27/2009 5:20:55PM

0907002

COMPUCHEM

Client:	**CH2M HILL, INC.**	**Project Manager:**	**Cathy Dover**
Project:	**CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052**	**Project Number:**	**CTO-166 NWSY/358315.FI.FS/N62470-02-D-30**
SDG:	**0907002** **CASE:**	**Status:**	**Reported**

Report To:
CH2M HILL, INC.
REBEKHA SHAW
5700 CLEVELAND STREET, SUITE 101
VIRGINIA BEACH, VA 23462
Phone: 757-671-8311
Fax: -

Invoice To:
CH2M HILL, INC.
ACCOUNTS PAYABLE
P.O. BOX 241329
DENVER, CO 80224
Phone :757-671-8311
Fax: -

Date Due:	07/29/2009 00:00 (20 day TAT)		
Received By:	Cathy Dover	Date Received:	07/09/2009 09:00
Logged In By:	Cathy Dover	Date Logged In:	07/01/2009 12:53

J & B Flags?: YES	TICS?:NO	Spike Level: FULL Spike	Deliverable: **Style 9**	EDD Format52) CH2MHILL LABSPEC 7

DOD CRITERIA*USE 0907002-08 FOR QC FOR TCL4 VOC, 8332 NITROGLYCERIN, SVOC 8270C & AMMONIA,*LCS/LCSD ONLY FOR METALS*TCL4 VOC 8260B 25ML*8332 NITROGLYCERIN ONLY*SVOC 8270C=N-nitrosodiphenyllamine only

Analysis	Due	TAT	Expires	Received	Comments
0907002-01 YS06-GW16-0609 [Water] Sampled 06/30/2009 09:50 Eastern					
6010B METALS TAL	07/29/2009 16:00	20	12/27/2009 09:50	07/01/2009 09:15	
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/14/2009 09:50	07/01/2009 09:15	
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/07/2009 09:50	07/01/2009 09:15	
7470A/7471A Mercury	07/29/2009 16:00	20	07/28/2009 09:50	07/01/2009 09:15	
0907002-02 YS06-EB01-063009 [Water] Sampled 06/30/2009 14:00 Eastern					**EQUIP.BLK**
7470A/7471A Mercury	07/29/2009 16:00	20	07/28/2009 14:00	07/01/2009 09:15	
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/07/2009 14:00	07/01/2009 09:15	
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/14/2009 14:00	07/01/2009 09:15	
6010B METALS TAL	07/29/2009 16:00	20	12/27/2009 14:00	07/01/2009 09:15	
0907002-03 YS06-FB01-063009 [Water] Sampled 06/30/2009 14:15 Eastern					**EQUIP.BLK**
6010B METALS TAL	07/29/2009 16:00	20	12/27/2009 14:15	07/01/2009 09:15	
7470A/7471A Mercury	07/29/2009 16:00	20	07/28/2009 14:15	07/01/2009 09:15	
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/14/2009 14:15	07/01/2009 09:15	
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/07/2009 14:15	07/01/2009 09:15	
0907002-04 YS06-TB01-063009 [Water] Sampled 06/30/2009 10:00 Eastern					**TRIP BLK**
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/14/2009 10:00	07/01/2009 09:15	

0907002

COMPUCHEM

Client:	CH2M HILL, INC.	**Project Manager:**	Cathy Dover
Project:	CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	**Project Number:**	CTO-166 NWSY/358315.FI.FS/N62470-02-D-30
SDG:	0907002 **CASE:**	**Status:**	Reported

Analysis	Due	TAT	Expires	Comments
0907002-05 YS07-GW03-0709 [Water] Sampled 07/06/2009 12:55 Eastern				
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/13/2009 12:55	07/07/2009 09:50
0907002-06 YS07-GW04-0709 [Water] Sampled 07/06/2009 15:00 Eastern				
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/13/2009 15:00	07/07/2009 09:50
0907002-07 YS07-EB01-070609 [Water] Sampled 07/06/2009 15:45 Eastern				**EQUIP.BLK**
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/13/2009 15:45	07/07/2009 09:50
0907002-08 YS07-GW05-0709 [Water] Sampled 07/07/2009 11:30 Eastern				**USE FOR QC FOR VOA, SVOC, GC-8332 , AMMONIA**
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/14/2009 11:30	07/08/2009 09:00
SVOA-8270C	07/29/2009 16:00	20	07/14/2009 11:30	07/08/2009 09:00
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/21/2009 11:30	07/08/2009 09:00
AMMONIA 350.1 WATER	07/29/2009 16:00	20	08/04/2009 11:30	07/08/2009 09:00
0907002-09 YS07-GW05P-0709 [Water] Sampled 07/07/2009 12:00 Eastern				
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/21/2009 12:00	07/08/2009 09:00
SVOA-8270C	07/29/2009 16:00	20	07/14/2009 12:00	07/08/2009 09:00
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/14/2009 12:00	07/08/2009 09:00
AMMONIA 350.1 WATER	07/29/2009 16:00	20	08/04/2009 12:00	07/08/2009 09:00
0907002-10 YS07-EB01-070709 [Water] Sampled 07/07/2009 14:20 Eastern				**EQUIP. BLK**
SVOA-8270C	07/29/2009 16:00	20	07/14/2009 14:20	07/08/2009 09:00
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/21/2009 14:20	07/08/2009 09:00
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/14/2009 14:20	07/08/2009 09:00
AMMONIA 350.1 WATER	07/29/2009 16:00	20	08/04/2009 14:20	07/08/2009 09:00
0907002-11 YS07-TB01-070709 [Water] Sampled 07/07/2009 13:30 Eastern				**TRIP BLK**
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/21/2009 13:30	07/08/2009 09:00
0907002-12 YS07-FB01-070809 [Water] Sampled 07/08/2009 14:30 Eastern				**FIELD BLK**
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/22/2009 14:30	07/09/2009 09:00
SVOA-8270C	07/29/2009 16:00	20	07/15/2009 14:30	07/09/2009 09:00
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/15/2009 14:30	07/09/2009 09:00
AMMONIA 350.1 WATER	07/29/2009 16:00	20	08/05/2009 14:30	07/09/2009 09:00
0907002-13 YS07-TB01-070709 [Water] Sampled 07/08/2009 14:45 Eastern				**TRIP BLK**
VOA-8260B 25ML-TCL4	07/29/2009 16:00	20	07/22/2009 14:45	07/09/2009 09:00

0907002

COMPUCHEM

Client:	**CH2M HILL, INC.**	**Project Manager:**	**Cathy Dover**
Project:	**CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052**	**Project Number:**	**CTO-166 NWSY/358315.FI.FS/N62470-02-D-305**
SDG:	**0907002** **CASE:**	**Status:**	**Reported**

Analysis	Due	TAT	Expires	Comments
0907002-14 YS07-GW01-0709 [Water] Sampled 07/08/2009 10:30 Eastern				
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/15/2009 10:30	07/09/2009 09:00
0907002-15 YS07-EB01-070809 [Water] Sampled 07/08/2009 11:00 Eastern				**EQUIP.BLK**
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/15/2009 11:00	07/09/2009 09:00
0907002-16 YS07-GW02-0709 [Water] Sampled 07/08/2009 13:45 Eastern				
GC-8332- SOLID PHASE EXPLOSIVE	07/29/2009 16:00	20	07/15/2009 13:45	07/09/2009 09:00

VOA Internal Chain of Custody Sheet

Matrix Water **Batch**: 9070114 **Status**: Batched **Analysis**: VOA-8260B 25ML-TCL4

Lab Id	Client Id	Received	Container	Extraction
0907002-01 A	YS06-GW16-0609	07/01/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-02 A	YS06-EB01-063009	07/01/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-03 A	YS06-FB01-063009	07/01/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-04 A	YS06-TB01-063009	07/01/09	01b_40mL VOA, cool, H	8260B 25ML

#2B	7-2-09	JAO	7-2-09
Relinquished By	Date	Received By	Date
JAO	7-2-09	#2B	7-2-09
Relinquished By	Date	Received By	Date
#2B	7-6-09	JAO	7-6-09
Relinquished By	Date	Received By	Date
JAO	7-6-09	#2B	7-6-09
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By 7/7/09	Date

VOA Internal Chain of Custody Sheet

Matrix Water **Batch**: 9070805 **Status:** Batched **Analysis**: VOA-8260B 25ML-TCL4

Lab Id	Client Id	Received	Container	Extraction
0907002-08 A	YS07-GW05-0709	07/08/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-09 A	YS07-GW05P-0709	07/08/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-10 A	YS07-EB01-070709	07/08/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-11 A	YS07-TB01-070709	07/08/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-12 A	YS07-FB01-070809	07/09/09	01b_40mL VOA, cool, H	8260B 25ML
0907002-13 A	YS07-TB01-070709	07/09/09	01b_40mL VOA, cool, H	8260B 25ML

#2B	7-09-09	JAD	7-09-09
Relinquished By	Date	Received By	Date
JAD	7-09-09	#2B	7-09-09
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date
Relinquished By	Date	Received By	Date

C. SDG Data

1. QC Summary
2. Sample Data
3. Standards Data
4. Raw QC Data

LAB CODE : LIBRTY	METHOD: 8260B
CASE # : ____	SDG # : 0907002

1. QC Summary

a. Surrogate Recovery Summary (Form II VOA)

b. Spike Summary - MS / MSD / LCS
(Form III VOA)

c. Method Blank Summary (Form IV VOA)

d. GC/MS Instrument Performance Check
(Form V VOA)

e. Internal Standard Area and RT Summary
(Form VIII VOA)

a. Surrogate Recovery Summary

(Form II VOA)

FORM 2
WATER VOLATILE SYSTEM MONITORING COMPOUND RECOVERY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

	CLIENT SAMPLE NO.	SMC1 (DBF) #	SMC2 (DCE) #	SMC3 (TOL) #	SMC4 (BFB) #	TOT OUT
01	VBLKJH	100	104	100	97	0
02	VJHLCS	98	105	99	91	0
03	VJHLCSD	97	100	100	98	0
04	YS06-FB01-063009	99	109	100	100	0
05	YS06-EB01-063009	101	110	102	103	0
06	YS06-GW16-0609	100	112	102	100	0
07	VBLKJI	93	102	89	95	0
08	VJILCS	93	106	90	95	0
09	VJILCSD	93	102	93	94	0
10	YS06-TB01-063009	94	105	94	99	0
11	VBLKJX	97	103	98	102	0
12	VJXLCS	97	107	95	98	0
13	YS07-GW05-0709	99	110	99	107	0
14	YS07-GW05P-0709	98	109	102	108	0
15	YS07-EB01-070709	96	108	102	108	0
16	YS07-TB01-070709	100	115	101	108	0
17	YS07-FB01-070809	99	111	103	110	0
18	YS07-TB01-070809	100	115	101	111	0
19	YS07-GW05-0709MS	98	110	100	106	0
20	YS07-GW05-0709MSD	99	109	101	106	0
21						
22						
23						
24						
25						
26						
27						
28						

		QC LIMITS
SMC1 (DBF)	= Dibromofluoromethane	(85-115)
SMC2 (DCE)	= 1,2-Dichloroethane-d4	(70-120)
SMC3 (TOL)	= Toluene-d8	(85-120)
SMC4 (BFB)	= Bromofluorobenzene	(75-120)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D System Monitoring Compound diluted out

AMENDED DATA

b. Spike Summary - MS / MSD / LCS
(Form III VOA)

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5	0.0	4.248	85	30-155
Chloromethane	5	0.0	5.426	109	40-125
Vinyl Chloride	5	0.0	6.144	123	50-145
Bromomethane	5	0.0	6.073	121	30-145
Chloroethane	5	0.0	6.309	126	60-135
Trichlorofluoromethane	5	0.0	5.836	117	60-145
1,1-Dichloroethene	5	1.719	6.841	102	70-130
Carbon disulfide	5	0.0	6.2	124	35-160
1,1,2-trichloro-1,2,2-t	5	0.0	5.086	102	50-150
Acetone	25	2.569	27.96	102	30-155
Methyl acetate	5	0.0	7.105	142	30-150
Methylene Chloride	5	0.0	5.647	113	55-140
trans-1,2-Dichloroethen	5	0.0	5.8	116	60-140
Methyl-tert-butyl ether	5	0.111	6.024	118	65-125
1,1-Dichloroethane	5	6.97	13.32	127	70-135
cis-1,2-Dichloroethene	5	0.0	6	120	70-125
2-butanone	25	0.0	29.62	118	30-150
Chloroform	5	0.5004	6.699	124	65-135
1,1,1-Trichloroethane	5	3.386	8.808	108	65-130
Carbon Tetrachloride	5	0.0	5.245	105	65-145
Benzene	5	0.0	6.215	124*	80-120
1,2-Dichloroethane	5	0.0	6.5	130	70-130
Trichloroethene	5	0.3207	5.515	104	70-125
1,2-Dichloropropane	5	0.0	7.085	142*	75-125
Bromodichloromethane	5	0.2062	6.268	121*	75-120
cis-1,3-Dichloropropene	5	0.0	6.258	125	70-130
4-Methyl-2-pentanone	25	0.0	28.5	114	60-135
Toluene	5	0.0	5.451	109	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5	0.0	6.188	124	55-140
1,1,2-Trichloroethane	5	0.0	5.819	116	75-152
Tetrachloroethene	5	0.0	4.241	85	45-150
2-hexanone	25	0.0	28.12	112	55-130
Dibromochloromethane	5	0.1087	5.423	106	60-135
1,2-Dibromoethane	5	0.0	5.549	111	80-120
Chlorobenzene	5	0.0	5.388	108	80-120
Ethylbenzene	5	0.0	5.248	105	75-125
Styrene	5	0.0	5.407	108	65-135
Bromoform	5	0.0	4.591	92	70-130
Isopropyl Benzene	5	0.0	4.975	99	75-125
1,1,2,2-Tetrachloroetha	5	0.0	6.157	123	80-130
1,3-Dichlorobenzene	5	0.0	5.081	102	75-125
1,4-Dichlorobenzene	5	0.0	5	100	75-125
1,2-Dichlorobenzene	5	0.0	5.09	102	70-120
1,2-Dibromo-3-Chloropro	5	0.0	5.644	113	50-130
1,2,4-Trichlorobenzene	5	0.0	4.215	84	65-135
1,2-Dichloroethene (tot	10	0.0	12	120	30-155
Xylene (total)	15	0.0	16.8	112	50-150
Cyclohexane	5	0.0	4.852	97	50-150
Methylcyclohexane	5	0.0	4.851	97	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	4.273	85	1	30	30-155
Chloromethane	5	5.386	108	1	30	40-125
Vinyl Chloride	5	6.112	122	1	30	50-145
Bromomethane	5	6.321	126	4	30	30-145
Chloroethane	5	6.079	122	4	30	60-135
Trichlorofluoromethane	5	5.757	115	1	30	60-145
1,1-Dichloroethene	5	7.348	113	7	30	70-130
Carbon disulfide	5	6.154	123	1	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.31	106	4	30	50-150
Acetone	25	28.63	104	2	30	30-155
Methyl acetate	5	6.681	134	6	30	30-150
Methylene Chloride	5	5.703	114	1	30	55-140
trans-1,2-Dichloroethen	5	5.9	118	2	30	60-140
Methyl-tert-butyl ether	5	6.184	121	3	30	65-125
1,1-Dichloroethane	5	13.19	124	1	30	70-135
cis-1,2-Dichloroethene	5	6	120	0	30	70-125
2-butanone	25	29.91	120	1	30	30-150
Chloroform	5	6.678	124	0	30	65-135
1,1,1-Trichloroethane	5	8.882	110	1	30	65-130
Carbon Tetrachloride	5	5.473	109	4	30	65-145
Benzene	5	6.299	126*	1	30	80-120
1,2-Dichloroethane	5	6.465	129	1	30	70-130
Trichloroethene	5	5.681	107	3	30	70-125
1,2-Dichloropropane	5	7.088	142*	0	30	75-125
Bromodichloromethane	5	6.259	121*	0	30	75-120
cis-1,3-Dichloropropene	5	6.258	125	0	30	70-130
4-Methyl-2-pentanone	25	28.61	114	0	30	60-135
Toluene	5	5.694	114	4	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - Sample No.: YS07-GW05-0709

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	6.296	126	2	30	55-140
1,1,2-Trichloroethane	5	5.835	117	0	30	75-152
Tetrachloroethene	5	4.594	92	8	30	45-150
2-hexanone	25	28.73	115	2	30	55-130
Dibromochloromethane	5	5.636	111	4	30	60-135
1,2-Dibromoethane	5	5.617	112	1	30	80-120
Chlorobenzene	5	5.665	113	5	30	80-120
Ethylbenzene	5	5.491	110	5	30	75-125
Styrene	5	5.645	113	4	30	65-135
Bromoform	5	4.764	95	4	30	70-130
Isopropyl Benzene	5	5.335	107	7	30	75-125
1,1,2,2-Tetrachloroetha	5	6.285	126	2	30	80-130
1,3-Dichlorobenzene	5	5.261	105	3	30	75-125
1,4-Dichlorobenzene	5	5.33	107	6	30	75-125
1,2-Dichlorobenzene	5	5.33	107	5	30	70-120
1,2-Dibromo-3-Chloropro	5	6.033	121	7	30	50-130
1,2,4-Trichlorobenzene	5	4.527	91	7	30	65-135
1,2-Dichloroethene (tot	10	12	120	0	30	30-155
Xylene (total)	15	17.59	117	5	30	50-150
Cyclohexane	5	5.216	104	7	30	50-150
Methylcyclohexane	5	5.334	107	9	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 49 outside limits
Spike Recovery: 6 out of 98 outside limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5		5.212	104	30-155
Chloromethane	5		5.136	103	40-125
Vinyl Chloride	5		5.764	115	50-145
Bromomethane	5		5.081	102	30-145
Chloroethane	5		5.839	117	60-135
Trichlorofluoromethane	5		5.404	108	60-145
1,1-Dichloroethene	5		5.35	107	70-130
Carbon disulfide	5		5.488	110	35-160
1,1,2-trichloro-1,2,2-t	5		5.35	107	50-150
Acetone	25		25.82	103	30-155
Methyl acetate	5		5.857	117	30-150
Methylene Chloride	5		4.921	98	55-140
trans-1,2-Dichloroethen	5		5.2	104	60-140
Methyl-tert-butyl ether	5		5.406	108	65-125
1,1-Dichloroethane	5		5.46	109	70-135
cis-1,2-Dichloroethene	5		5.2	104	70-125
2-butanone	25		27.77	111	30-150
Chloroform	5		5.273	105	65-135
1,1,1-Trichloroethane	5		5.194	104	65-130
Carbon Tetrachloride	5		5.219	104	65-145
Benzene	5		5.354	107	80-120
1,2-Dichloroethane	5		5.431	109	70-130
Trichloroethene	5		5.104	102	70-125
1,2-Dichloropropane	5		5.74	115	75-125
Bromodichloromethane	5		5.31	106	75-120
cis-1,3-Dichloropropene	5		5.399	108	70-130
4-Methyl-2-pentanone	25		27.48	110	60-135
Toluene	5		5.153	103	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5		5.477	110	55-140
1,1,2-Trichloroethane	5		5.292	106	75-152
Tetrachloroethene	5		4.909	98	45-150
2-hexanone	25		27.9	112	55-130
Dibromochloromethane	5		5.206	104	60-135
1,2-Dibromoethane	5		5.261	105	80-120
Chlorobenzene	5		5.134	103	80-120
Ethylbenzene	5		5.158	103	75-125
Styrene	5		5.261	105	65-135
Bromoform	5		5.023	100	70-130
Isopropyl Benzene	5		5.228	105	75-125
1,1,2,2-Tetrachloroetha	5		5.183	104	80-130
1,3-Dichlorobenzene	5		4.867	97	75-125
1,4-Dichlorobenzene	5		4.897	98	75-125
1,2-Dichlorobenzene	5		4.95	99	70-120
1,2-Dibromo-3-Chloropro	5		4.874	97	50-130
1,2,4-Trichlorobenzene	5		4.819	96	65-135
1,2-Dichloroethene (tot	10		10	100	30-155
Xylene (total)	15		16.46	110	50-150
Cyclohexane	5		5.243	105	50-150
Methylcyclohexane	5		5.459	109	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	5.743	115	10	30	30-155
Chloromethane	5	5.498	110	7	30	40-125
Vinyl Chloride	5	6.088	122	6	30	50-145
Bromomethane	5	5.669	113	10	30	30-145
Chloroethane	5	6.144	123	5	30	60-135
Trichlorofluoromethane	5	5.819	116	7	30	60-145
1,1-Dichloroethene	5	5.515	110	3	30	70-130
Carbon disulfide	5	5.626	113	3	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.282	106	1	30	50-150
Acetone	25	25.5	102	1	30	30-155
Methyl acetate	5	5.619	112	4	30	30-150
Methylene Chloride	5	5.32	106	8	30	55-140
trans-1,2-Dichloroethen	5	5.5	110	6	30	60-140
Methyl-tert-butyl ether	5	5.631	113	5	30	65-125
1,1-Dichloroethane	5	5.883	118	8	30	70-135
cis-1,2-Dichloroethene	5	5.6	112	7	30	70-125
2-butanone	25	27.78	111	0	30	30-150
Chloroform	5	5.641	113	7	30	65-135
1,1,1-Trichloroethane	5	5.331	107	3	30	65-130
Carbon Tetrachloride	5	5.286	106	2	30	65-145
Benzene	5	5.708	114	6	30	80-120
1,2-Dichloroethane	5	5.705	114	4	30	70-130
Trichloroethene	5	5.344	107	5	30	70-125
1,2-Dichloropropane	5	6.076	122	6	30	75-125
Bromodichloromethane	5	5.572	111	5	30	75-120
cis-1,3-Dichloropropene	5	5.375	108	0	30	70-130
4-Methyl-2-pentanone	25	28.89	116	5	30	60-135
Toluene	5	5.531	111	7	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJHLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJHLCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	5.644	113	3	30	55-140
1,1,2-Trichloroethane	5	5.662	113	6	30	75-152
Tetrachloroethene	5	5.054	101	3	30	45-150
2-hexanone	25	28.64	115	3	30	55-130
Dibromochloromethane	5	5.436	109	5	30	60-135
1,2-Dibromoethane	5	5.563	111	6	30	80-120
Chlorobenzene	5	5.541	111	7	30	80-120
Ethylbenzene	5	5.513	110	7	30	75-125
Styrene	5	5.566	111	6	30	65-135
Bromoform	5	5.23	105	5	30	70-130
Isopropyl Benzene	5	5.451	109	4	30	75-125
1,1,2,2-Tetrachloroetha	5	5.723	114	9	30	80-130
1,3-Dichlorobenzene	5	5.314	106	9	30	75-125
1,4-Dichlorobenzene	5	5.442	109	11	30	75-125
1,2-Dichlorobenzene	5	5.447	109	10	30	70-120
1,2-Dibromo-3-Chloropro	5	5.317	106	9	30	50-130
1,2,4-Trichlorobenzene	5	5.059	101	5	30	65-135
1,2-Dichloroethene (tot	10	11	110	10	30	30-155
Xylene (total)	15	17.52	117	6	30	50-150
Cyclohexane	5	5.198	104	1	30	50-150
Methylcyclohexane	5	5.456	109	0	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 49 outside limits
Spike Recovery: 0 out of 98 outside limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5		4.088	82	30-155
Chloromethane	5		4.847	97	40-125
Vinyl Chloride	5		5.293	106	50-145
Bromomethane	5		5.334	107	30-145
Chloroethane	5		5.511	110	60-135
Trichlorofluoromethane	5		5.051	101	60-145
1,1-Dichloroethene	5		4.726	95	70-130
Carbon disulfide	5		4.958	99	35-160
1,1,2-trichloro-1,2,2-t	5		4.761	95	50-150
Acetone	25		25.77	103	30-155
Methyl acetate	5		6.033	121	30-150
Methylene Chloride	5		4.568	91	55-140
trans-1,2-Dichloroethen	5		4.7	94	60-140
Methyl-tert-butyl ether	5		5.403	108	65-125
1,1-Dichloroethane	5		5.468	109	70-135
cis-1,2-Dichloroethene	5		4.9	98	70-125
2-butanone	25		29.24	117	30-150
Chloroform	5		5.1	102	65-135
1,1,1-Trichloroethane	5		4.788	96	65-130
Carbon Tetrachloride	5		4.78	96	65-145
Benzene	5		5.145	103	80-120
1,2-Dichloroethane	5		5.644	113	70-130
Trichloroethene	5		4.596	92	70-125
1,2-Dichloropropane	5		5.844	117	75-125
Bromodichloromethane	5		5.235	105	75-120
cis-1,3-Dichloropropene	5		5.315	106	70-130
4-Methyl-2-pentanone	25		28.63	115	60-135
Toluene	5		4.705	94	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5		5.334	107	55-140
1,1,2-Trichloroethane	5		5.035	101	75-152
Tetrachloroethene	5		4.006	80	45-150
2-hexanone	25		28.41	114	55-130
Dibromochloromethane	5		4.851	97	60-135
1,2-Dibromoethane	5		4.886	98	80-120
Chlorobenzene	5		4.667	93	80-120
Ethylbenzene	5		4.6	92	75-125
Styrene	5		4.733	95	65-135
Bromoform	5		4.398	88	70-130
Isopropyl Benzene	5		4.623	92	75-125
1,1,2,2-Tetrachloroetha	5		5.536	111	80-130
1,3-Dichlorobenzene	5		4.638	93	75-125
1,4-Dichlorobenzene	5		4.591	92	75-125
1,2-Dichlorobenzene	5		4.727	95	70-120
1,2-Dibromo-3-Chloropro	5		5.321	106	50-130
1,2,4-Trichlorobenzene	5		4.197	84	65-135
1,2-Dichloroethene (tot	10		9.6	96	30-155
Xylene (total)	15		14.68	98	50-150
Cyclohexane	5		4.676	94	50-150
Methylcyclohexane	5		4.96	99	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	5	4.42	88	7	30	30-155
Chloromethane	5	5	100	3	30	40-125
Vinyl Chloride	5	5.569	111	5	30	50-145
Bromomethane	5	5.647	113	5	30	30-145
Chloroethane	5	5.614	112	2	30	60-135
Trichlorofluoromethane	5	5.308	106	5	30	60-145
1,1-Dichloroethene	5	4.91	98	3	30	70-130
Carbon disulfide	5	5.229	105	6	30	35-160
1,1,2-trichloro-1,2,2-t	5	5.123	102	7	30	50-150
Acetone	25	25.24	101	2	30	30-155
Methyl acetate	5	6.264	125	3	30	30-150
Methylene Chloride	5	4.679	94	3	30	55-140
trans-1,2-Dichloroethen	5	5	100	6	30	60-140
Methyl-tert-butyl ether	5	5.34	107	1	30	65-125
1,1-Dichloroethane	5	5.628	113	4	30	70-135
cis-1,2-Dichloroethene	5	5	100	2	30	70-125
2-butanone	25	28.46	114	3	30	30-150
Chloroform	5	5.231	105	3	30	65-135
1,1,1-Trichloroethane	5	5.046	101	5	30	65-130
Carbon Tetrachloride	5	5.024	100	4	30	65-145
Benzene	5	5.276	106	3	30	80-120
1,2-Dichloroethane	5	5.594	112	1	30	70-130
Trichloroethene	5	4.793	96	4	30	70-125
1,2-Dichloropropane	5	6.037	121	3	30	75-125
Bromodichloromethane	5	5.241	105	0	30	75-120
cis-1,3-Dichloropropene	5	5.353	107	1	30	70-130
4-Methyl-2-pentanone	25	28.6	114	1	30	60-135
Toluene	5	4.983	100	6	30	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJILCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix Spike - EPA Sample No.: VJILCS

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
trans-1,3-Dichloroprope	5	5.386	108	1	30	55-140
1,1,2-Trichloroethane	5	5.212	104	3	30	75-152
Tetrachloroethene	5	4.366	87	8	30	45-150
2-hexanone	25	28.49	114	0	30	55-130
Dibromochloromethane	5	4.972	99	2	30	60-135
1,2-Dibromoethane	5	5.056	101	3	30	80-120
Chlorobenzene	5	4.993	100	7	30	80-120
Ethylbenzene	5	4.976	100	8	30	75-125
Styrene	5	5.016	100	5	30	65-135
Bromoform	5	4.519	90	2	30	70-130
Isopropyl Benzene	5	4.967	99	7	30	75-125
1,1,2,2-Tetrachloroetha	5	5.501	110	1	30	80-130
1,3-Dichlorobenzene	5	4.797	96	3	30	75-125
1,4-Dichlorobenzene	5	4.889	98	6	30	75-125
1,2-Dichlorobenzene	5	4.943	99	4	30	70-120
1,2-Dibromo-3-Chloropro	5	5.227	105	1	30	50-130
1,2,4-Trichlorobenzene	5	4.448	89	6	30	65-135
1,2-Dichloroethene (tot	10	10	100	4	30	30-155
Xylene (total)	15	15.89	106	8	30	50-150
Cyclohexane	5	4.992	100	6	30	50-150
Methylcyclohexane	5	5.343	107	8	30	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 49 outside limits
Spike Recovery: 0 out of 98 outside limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

VJXLCS

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
Dichlorodifluoromethane	5	4.115	82	30-155
Chloromethane	5	5.124	102	40-125
Vinyl Chloride	5	5.912	118	50-145
Bromomethane	5	5.841	117	30-145
Chloroethane	5	6.092	122	60-135
Trichlorofluoromethane	5	5.582	112	60-145
1,1-Dichloroethene	5	4.896	98	70-130
Carbon disulfide	5	5.265	105	35-160
1,1,2-trichloro-1,2,2-t	5	4.828	97	50-150
Acetone	25	25.47	102	30-155
Methyl acetate	5	6.519	130	30-150
Methylene Chloride	5	4.902	98	55-140
trans-1,2-Dichloroethen	5	5.1	102	60-140
Methyl-tert-butyl ether	5	5.477	110	65-125
1,1-Dichloroethane	5	5.664	113	70-135
cis-1,2-Dichloroethene	5	5.3	106	70-125
2-butanone	25	28.57	114	30-150
Chloroform	5	5.371	107	65-135
1,1,1-Trichloroethane	5	5.031	101	65-130
Carbon Tetrachloride	5	4.93	99	65-145
Benzene	5	5.454	109	80-120
1,2-Dichloroethane	5	5.727	115	70-130
Trichloroethene	5	4.793	96	70-125
1,2-Dichloropropane	5	6.1	122	75-125
Bromodichloromethane	5	5.45	109	75-120
cis-1,3-Dichloropropene	5	5.52	110	70-130
4-Methyl-2-pentanone	25	27.61	110	60-135
Toluene	5	4.8	96	75-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

3A
WATER VOLATILE LAB CONTROL SAMPLE

Lab Name: COMPUCHEM Contract: 8260B VJXLCS

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
trans-1,3-Dichloroprope	5	5.324	106	55-140
1,1,2-Trichloroethane	5	5.19	104	75-152
Tetrachloroethene	5	4.022	80	45-150
2-hexanone	25	27.4	110	55-130
Dibromochloromethane	5	4.888	98	60-135
1,2-Dibromoethane	5	5.03	101	80-120
Chlorobenzene	5	4.831	97	80-120
Ethylbenzene	5	4.709	94	75-125
Styrene	5	4.871	97	65-135
Bromoform	5	4.397	88	70-130
Isopropyl Benzene	5	4.611	92	75-125
1,1,2,2-Tetrachloroetha	5	5.519	110	80-130
1,3-Dichlorobenzene	5	4.57	91	75-125
1,4-Dichlorobenzene	5	4.559	91	75-125
1,2-Dichlorobenzene	5	4.608	92	70-120
1,2-Dibromo-3-Chloropro	5	5.279	106	50-130
1,2,4-Trichlorobenzene	5	4.095	82	65-135
1,2-Dichloroethene (tot	10	10	100	30-155
Xylene (total)	15	14.97	100	50-150
Cyclohexane	5	4.764	95	50-150
Methylcyclohexane	5	5.101	102	50-150

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 49 outside limits

COMMENTS: _____

c. Method Blank Summary (Form IV VOA)

If more than a single form is necessary, forms shall be arranged in chronological order by date of analysis of the blanks, by instrument.

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJH

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9070206-BLK171 Lab Sample ID: 9070206-BLK1

Date Analyzed: 07/02/09 Time Analyzed: 1125

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJHLCS	9070206-BS1	9070206-BS17	1208
02	VJHLCSD	9070206-BSD1	9070206-BSD1	1236
03	YS06-FB01-063009	0907002-03	0907002-0371	1332
04	YS06-EB01-063009	0907002-02	0907002-0271	1400
05	YS06-GW16-0609	0907002-01	0907002-0171	1429
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COMMENTS:

FORM IV VOA

AMENDED DATA

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJI

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9070612-BLK171 Lab Sample ID: 9070612-BLK1

Date Analyzed: 07/06/09 Time Analyzed: 1228

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJILCS	9070612-BS1	9070612-BS17	1307
02	VJILCSD	9070612-BSD1	9070612-BSD1	1335
03	YS06-TB01-063009	0907002-04	0907002-04R7	1403
04				
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COMMENTS:

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJX

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9070915-BLK171 Lab Sample ID: 9070915-BLK1

Date Analyzed: 07/09/09 Time Analyzed: 1819

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJXLCS	9070915-BS1	9070915-BS17	1907
02	YS07-GW05-0709	0907002-08	0907002-0871	2003
03	YS07-GW05P-0709	0907002-09	0907002-0971	2031
04	YS07-EB01-070709	0907002-10	0907002-1071	2112
05	YS07-TB01-070709	0907002-11	0907002-1171	2140
06	YS07-FB01-070809	0907002-12	0907002-1271	2208
07	YS07-TB01-070809	0907002-13	0907002-1371	2237
08	YS07-GW05-0709MS	9070915-MS1	9070915-MS17	2305
09	YS07-GW05-0709MSD	9070915-MSD1	9070915-MSD1	2333
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COMMENTS:

AMENDED DATA

d. GC/MS Instrument Performance Check (Form V VOA)

If more than a single form is necessary, forms shall be arranged in chronological order, by instrument.

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G01002-TUN171 BFB Injection Date: 07/01/09

Instrument ID: 5972HP71 BFB Injection Time: 1624

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.6
75	30.0 - 60.0% of mass 95	49.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	78.4
175	5.0 - 9.0% of mass 174	3.9 (5.0)1
176	95.0 - 101.0% of mass 174	77.1 (98.3)1
177	5.0 - 9.0% of mass 176	5.2 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9G01002-CAL	9G01002-CAL271	07/01/09	1725
02	VSTD0.5	9G01002-CAL	9G01002-CAL171	07/01/09	1753
03	VSTD040	9G01002-CAL	9G01002-CAL671	07/01/09	1821
04	VSTD020	9G01002-CAL	9G01002-CAL571	07/01/09	1850
05	VSTD010	9G01002-CAL	9G01002-CAL471	07/01/09	1918
06	VSTD005	9G01002-CAL	9G01002-CAL3R7	07/01/09	1946
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FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G02001-TUN171 BFB Injection Date: 07/02/09

Instrument ID: 5972HP71 BFB Injection Time: 0931

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.6
75	30.0 - 60.0% of mass 95	50.3
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.1
175	5.0 - 9.0% of mass 174	4.1 (5.2)1
176	95.0 - 101.0% of mass 174	77.4 (97.8)1
177	5.0 - 9.0% of mass 176	4.7 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G02002-CCV	9G02001-CCV1R7	07/02/09	1047
02	VBLKJH	9070206-BLK	9070206-BLK171	07/02/09	1125
03	VJHLCS	9070206-BS1	9070206-BS171	07/02/09	1208
04	VJHLCSD	9070206-BSD	9070206-BSD171	07/02/09	1236
05	YS06-FB01-063009	0907002-03	0907002-0371	07/02/09	1332
06	YS06-EB01-063009	0907002-02	0907002-0271	07/02/09	1400
07	YS06-GW16-0609	0907002-01	0907002-0171	07/02/09	1429
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FORM V VOA

AMENDED DATA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G06001-TUN171 BFB Injection Date: 07/06/09

Instrument ID: 5972HP71 BFB Injection Time: 1049

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.9
75	30.0 - 60.0% of mass 95	53.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	72.1
175	5.0 - 9.0% of mass 174	5.6 (7.8)1
176	95.0 - 101.0% of mass 174	71.5 (99.1)1
177	5.0 - 9.0% of mass 176	5.0 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G06001-CCV	9G06001-CCV1R7	07/06/09	1152
02	VBLKJI	9070612-BLK	9070612-BLK171	07/06/09	1228
03	VJILCS	9070612-BS1	9070612-BS171	07/06/09	1307
04	VJILCSD	9070612-BSD	9070612-BSD171	07/06/09	1335
05	YS06-TB01-063009	0907002-04	0907002-04R71	07/06/09	1403
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FORM V VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID: 9G09007-TUN171 BFB Injection Date: 07/09/09

Instrument ID: 5972HP71 BFB Injection Time: 1612

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	21.2
75	30.0 - 60.0% of mass 95	50.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.8
175	5.0 - 9.0% of mass 174	4.0 (5.2)1
176	95.0 - 101.0% of mass 174	74.1 (96.5)1
177	5.0 - 9.0% of mass 176	4.5 (6.1)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G09007-CCV	9G09007-CCV1R7	07/09/09	1738
02	VBLKJX	9070915-BLK	9070915-BLK171	07/09/09	1819
03	VJXLCS	9070915-BS1	9070915-BS171	07/09/09	1907
04	YS07-GW05-0709	0907002-08	0907002-0871	07/09/09	2003
05	YS07-GW05P-0709	0907002-09	0907002-0971	07/09/09	2031
06	YS07-EB01-070709	0907002-10	0907002-1071	07/09/09	2112
07	YS07-TB01-070709	0907002-11	0907002-1171	07/09/09	2140
08	YS07-FB01-070809	0907002-12	0907002-1271	07/09/09	2208
09	YS07-TB01-070809	0907002-13	0907002-1371	07/09/09	2237
10	YS07-GW05-0709MS	9070915-MS1	9070915-MS171	07/09/09	2305
11	YS07-GW05-0709MSD	9070915-MSD	9070915-MSD171	07/09/09	2333
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FORM V VOA

AMENDED DATA

e. Internal Standard Area and RT Summary (Form VIII VOA)

If more than a single form is necessary, forms shall be arranged in chronological order, by instrument.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID (Standard): 9G02001-CCV1R71 Date Analyzed: 07/02/09

Instrument ID: 5972HP71 Time Analyzed: 1047

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	810804	9.88	541115	12.36	267373	14.05
	UPPER LIMIT	1621608	10.38	1082230	12.86	534746	14.55
	LOWER LIMIT	405402	9.38	270557	11.86	133687	13.55
	CLIENT SAMPLE NO.						
01	VBLKJH	793283	9.88	506184	12.35	235567	14.06
02	VJHLCS	788594	9.88	511717	12.36	254163	14.06
03	VJHLCSD	750554	9.88	475822	12.36	219563	14.06
04	YS06-FB01-063009	724281	9.88	461006	12.36	206709	14.05
05	YS06-EB01-063009	758420	9.88	477285	12.36	215827	14.06
06	YS06-GW16-0609	794257	9.88	502620	12.36	228721	14.06
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IS1 (FBZ) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

AMENDED DATA

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID (Standard): 9G06001-CCV1R71 Date Analyzed: 07/06/09

Instrument ID: 5972HP71 Time Analyzed: 1152

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	774737	9.88	514504	12.36	223477	14.06
	UPPER LIMIT	1549474	10.38	1029008	12.86	446954	14.56
	LOWER LIMIT	387369	9.38	257252	11.86	111739	13.56
	CLIENT SAMPLE NO.						
01	VBLKJI	762807	9.88	500998	12.36	217218	14.06
02	VJILCS	750344	9.88	499822	12.37	222489	14.06
03	VJILCSD	748519	9.88	485570	12.36	220388	14.06
04	YS06-TB01-063009	755388	9.88	483282	12.36	204024	14.06
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IS1 (FBZ) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

FORM 8
VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Lab File ID (Standard): 9G09007-CCV1R71 Date Analyzed: 07/09/09

Instrument ID: 5972HP71 Time Analyzed: 1738

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA #	RT #	IS2(CBZ) AREA #	RT #	IS3(DCB) AREA #	RT #
	12 HOUR STD	744637	9.88	505922	12.36	221693	14.06
	UPPER LIMIT	1489274	10.38	1011844	12.86	443386	14.56
	LOWER LIMIT	372319	9.38	252961	11.86	110847	13.56
	CLIENT SAMPLE NO.						
01	VBLKJX	730200	9.88	479018	12.36	202482	14.05
02	VJXLCS	710116	9.88	481200	12.36	216773	14.06
03	YS07-GW05-0709	655988	9.88	428572	12.36	180463	14.06
04	YS07-GW05P-0709	626242	9.88	405271	12.36	170250	14.05
05	YS07-EB01-070709	597613	9.88	380641	12.36	159449	14.05
06	YS07-TB01-070709	615412	9.88	400460	12.36	172537	14.06
07	YS07-FB01-070809	603159	9.88	386994	12.36	163519	14.05
08	YS07-TB01-070809	588552	9.88	380604	12.36	159656	14.06
09	YS07-GW05-0709MS	650415	9.88	430067	12.36	192442	14.06
10	YS07-GW05-0709MS	674350	9.89	441192	12.36	197348	14.05
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20							

IS1 (FBZ) = Fluorobenzene
IS2 (CBZ) = Chlorobenzene-d5
IS3 (DCB) = 1,4-Dichlorobenzene-d4

AREA UPPER LIMIT = +100% of internal standard area
AREA LOWER LIMIT = - 50% of internal standard area
RT UPPER LIMIT = + 0.50 minutes of internal standard RT
RT LOWER LIMIT = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

AMENDED DATA

2. Sample Data

Sample data shall be arranged in packets with the Organic Analysis Data Sheet (Form I VOA and Form I VOA-TIC), followed by the raw data for volatile samples. These sample packets shall be placed in increasing Client Sample ID number order, considering both letters and numbers.

a. Target Analyte Results (Form I VOA)
Tabulated results (identification and quantitation) shall be included.

b. Tentatively Identified Compounds (Form I VOA-TIC)
Lists the client specified number of organic compounds that are non-surrogate/non-internal standard compounds and are not listed on the target compound list. This form shall be included even if no compounds are found.

c. Reconstructed Ion Chromatograms
Include for each sample or sample extract, including dilutions and reanalyses. The RIC shall contain the following header information: Client Sample ID number, date and time of analysis, GC/MS instrument identifier, lab file identifier, and analyst ID.

d. Quantitation Report showing calculations for target analytes
- Include a printout of the Enhanced Ion Current Profile (EICP) for all manual changes to all compounds, internal standards, and surrogate compounds.

e. Copies of raw spectra and copies of background-subtracted mass spectra of target analytes identified in the sample.
- The spectra shall include the following information: Client Sample ID number, Lab file ID, date and time of analysis, and instrument ID.
- The compound name must be clearly marked.

f. Quantitation Report showing calculations for TICs

g. Copies of mass spectra of organic compounds not listed on the target compound list (TICs) with associated best-match spectra.
- The spectra shall be labeled as follows: Client Sample ID number, lab file ID, date and time of analysis, and instrument ID.
- The compound name must be clearly marked.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0271

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.6	
79-20-9	Methyl acetate	0.65	
75-09-2	Methylene Chloride	0.86	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	9.7	
67-66-3	Chloroform	0.13	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.3	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.76	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0271

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

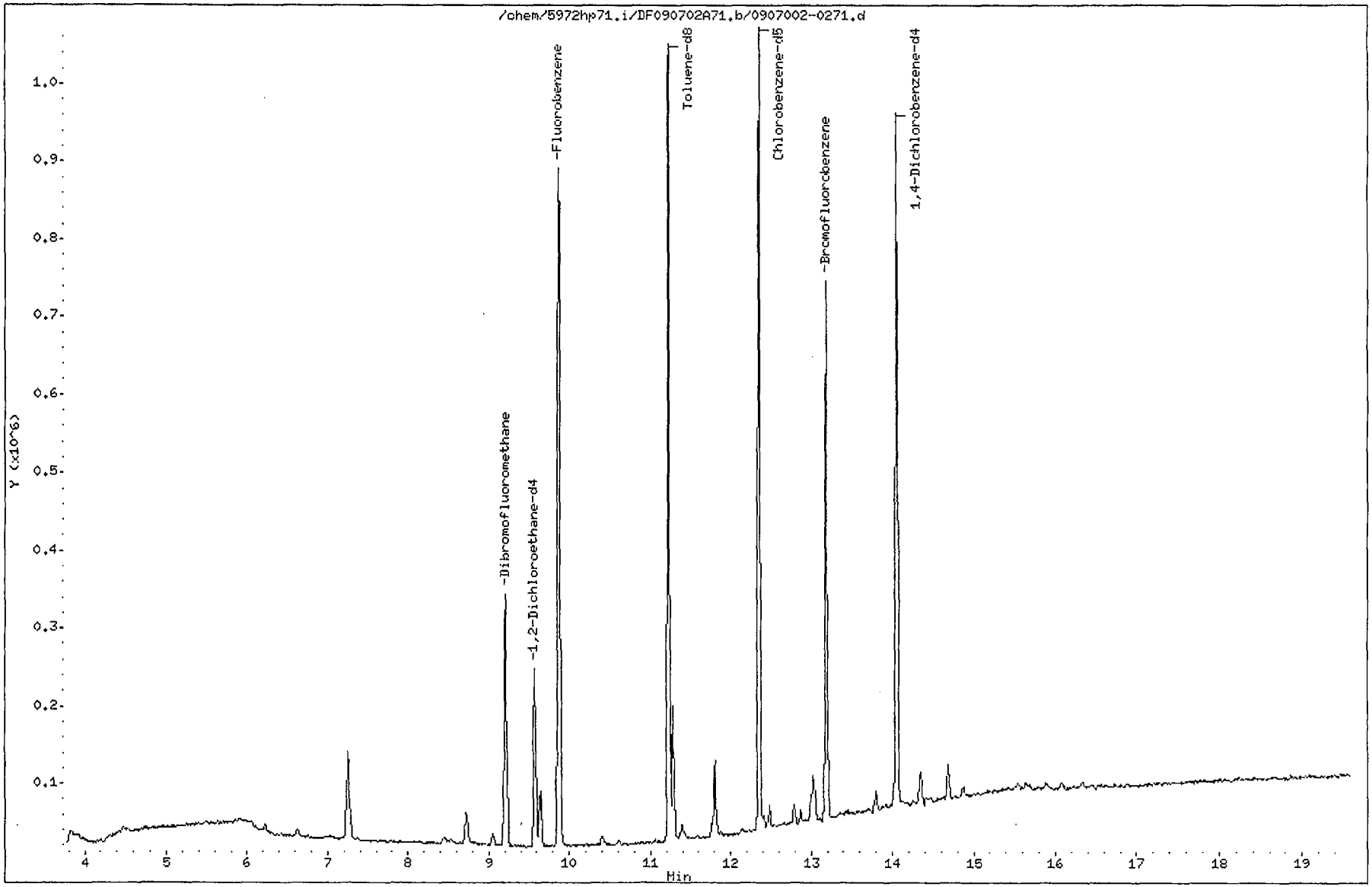
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d
Date : 02-JUL-2009 14:00
Client ID: YS06-EB01-063009
Sample Info: 0907002-02:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d
Report Date: 06-Jul-2009 16:54

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/0907002-0271.d
Lab Smp Id: 0907002-02 Client Smp ID: YS06-EB01-063009
Inj Date : 02-JUL-2009 14:00
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-02:JAO
Misc Info : YS06-EB01-063009
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:43 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1 Fluorobenzene	96	9.878	9.884	(1.000)	758420	125.000	
* 2 Chlorobenzene-d5	117	12.361	12.357	(1.000)	477285	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.055	14.051	(1.000)	215827	125.000	
$ 4 Dibromofluoromethane	113	9.218	9.214	(0.933)	210735	126.505	5.1
$ 5 1,2-Dichloroethane-d4	65	9.582	9.578	(0.970)	178014	137.269	5.5
$ 6 Toluene-d8	98	11.237	11.233	(0.909)	653412	127.423	5.1
$ 7 Bromofluorobenzene	95	13.188	13.184	(0.938)	239009	129.040	5.2
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	Compound Not Detected.					
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

7/6/9

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d
Report Date: 06-Jul-2009 16:54

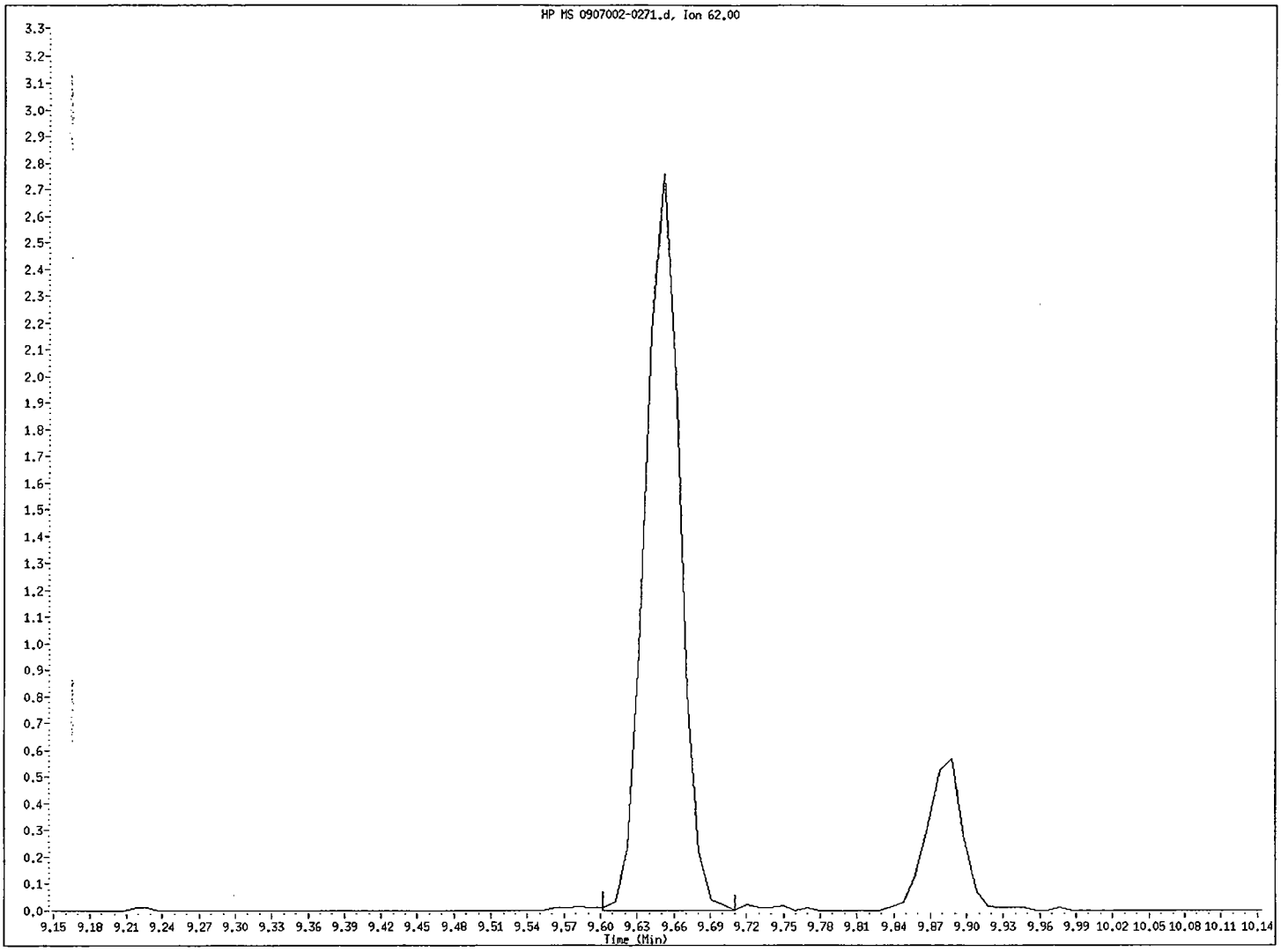
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.636	6.632	(0.672)	19801	114.539	4.6
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	6.636	7.056	(0.672)	19958	16.2239	0.65
25	Methylene Chloride	84	7.257	7.253	(0.735)	58942	21.4414	0.86
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	8.725	8.701	(0.883)	67562	242.043	9.7
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	9.060	9.056	(0.917)	10483	3.20853	0.13(a)
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	9.651	9.647	(0.977)	54762	33.5992	1.3(H)
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	11.287	11.293	(0.913)	70967	18.9544	0.76
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d
Report Date: 06-Jul-2009 16:54

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.

1,2-Dichloroethane CAS Number 107-06-2 Area = 54762 User selected hit



File name: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d
Client ID: YS06-EB01-063009
Instrument ID: 5972hp71.i
Injection Date and Time: 02-JUL-2009 14:00
Retention Time: 9.65
Operator ID: JAO

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d

Date : 02-JUL-2009 14:00

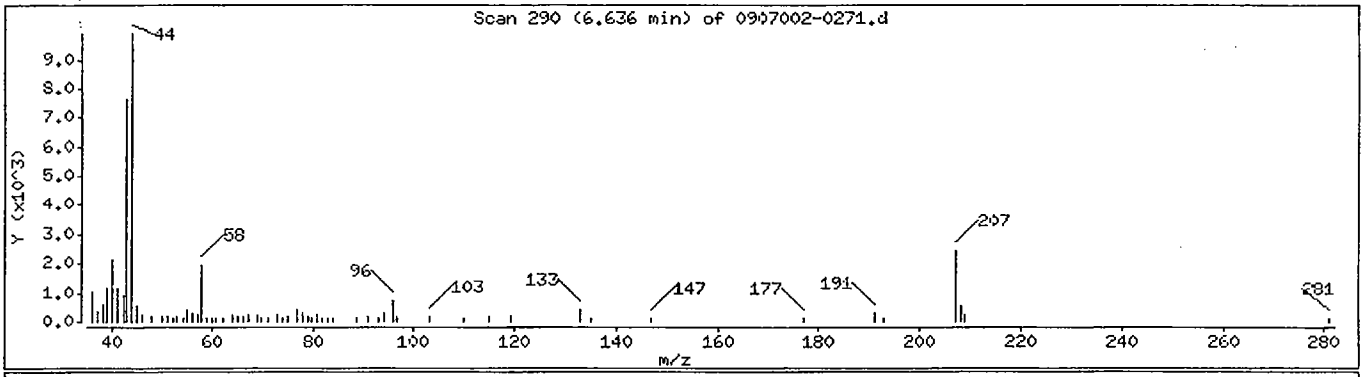
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

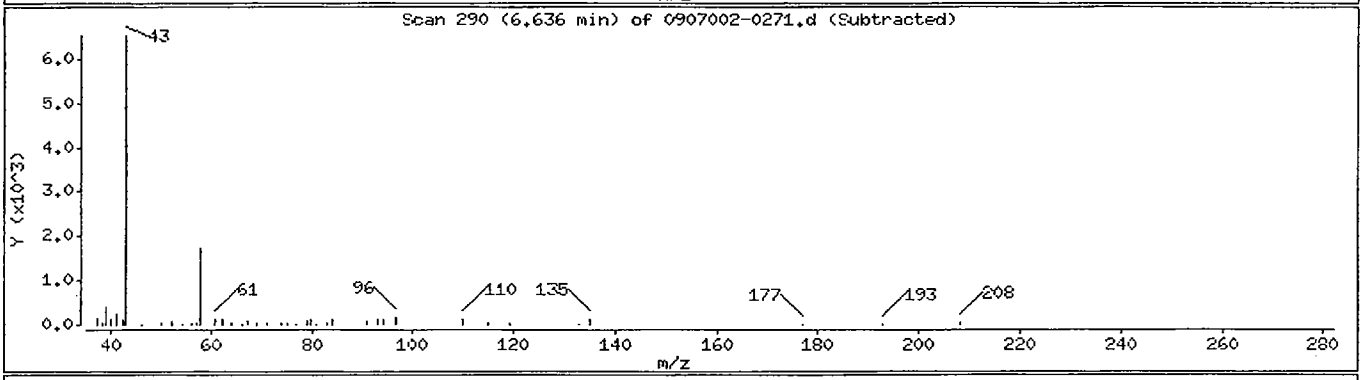
Sample Info: 0907002-02:JAO

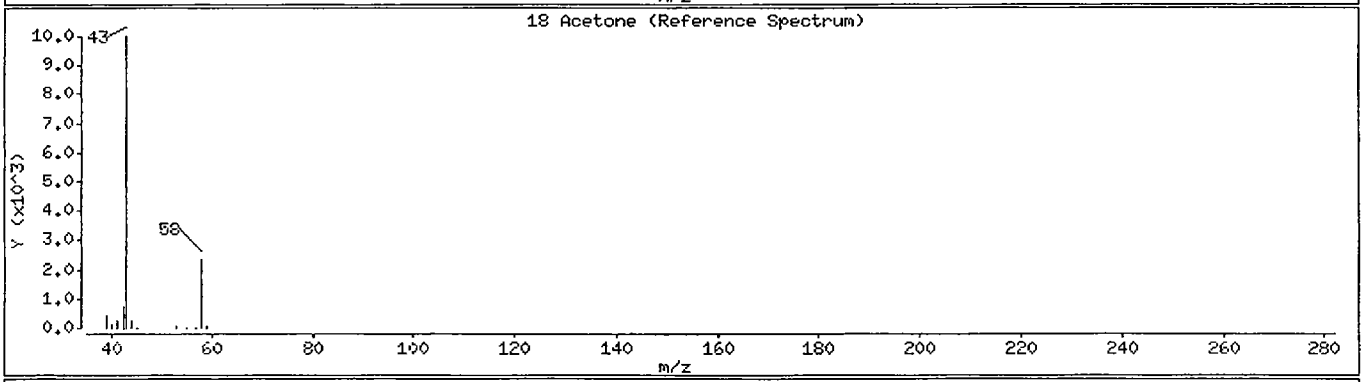
Purge Volume: 25.0 Operator: JAO

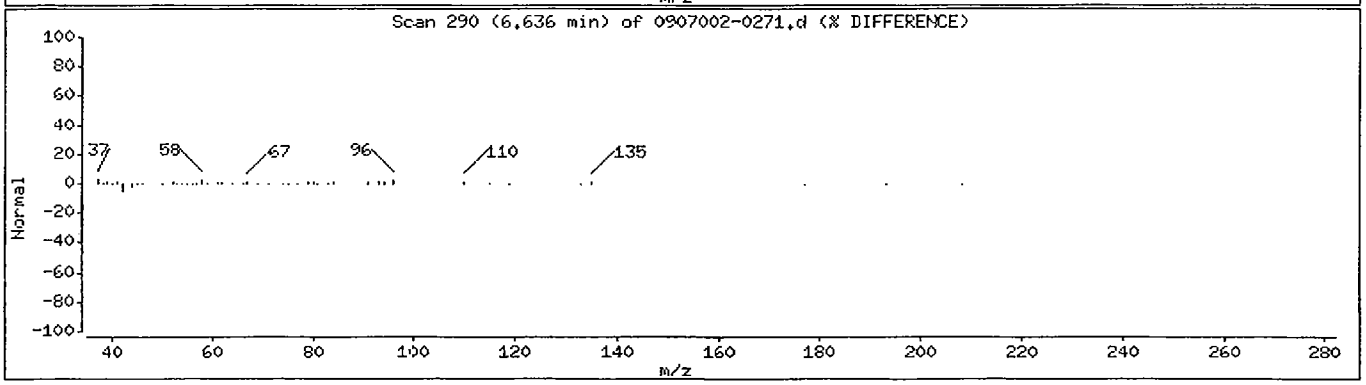
Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 4.6 ug/L









Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d

Date : 02-JUL-2009 14:00

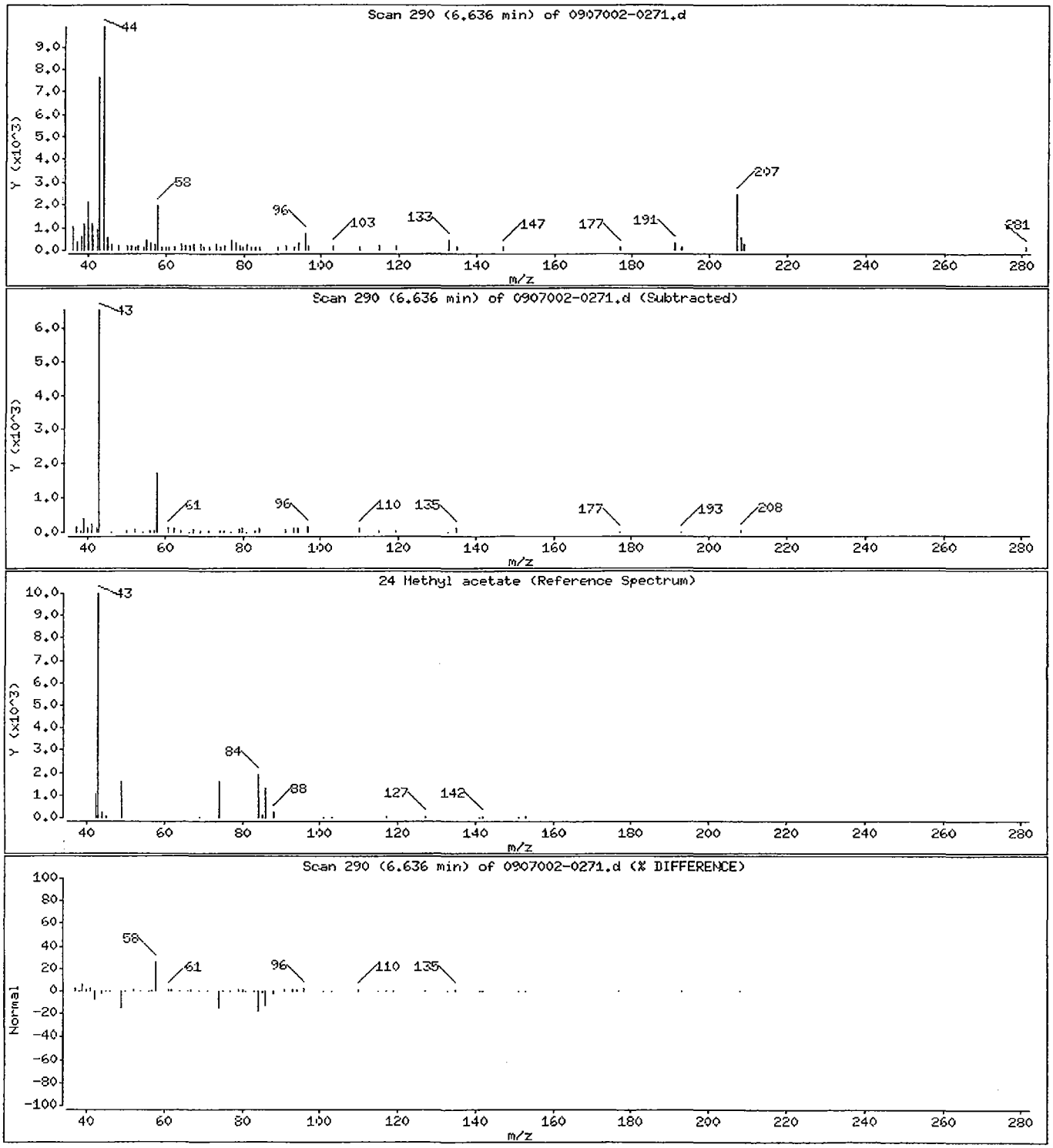
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-02:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

24 Methyl acetate Concentration: 0.65 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d

Date : 02-JUL-2009 14:00

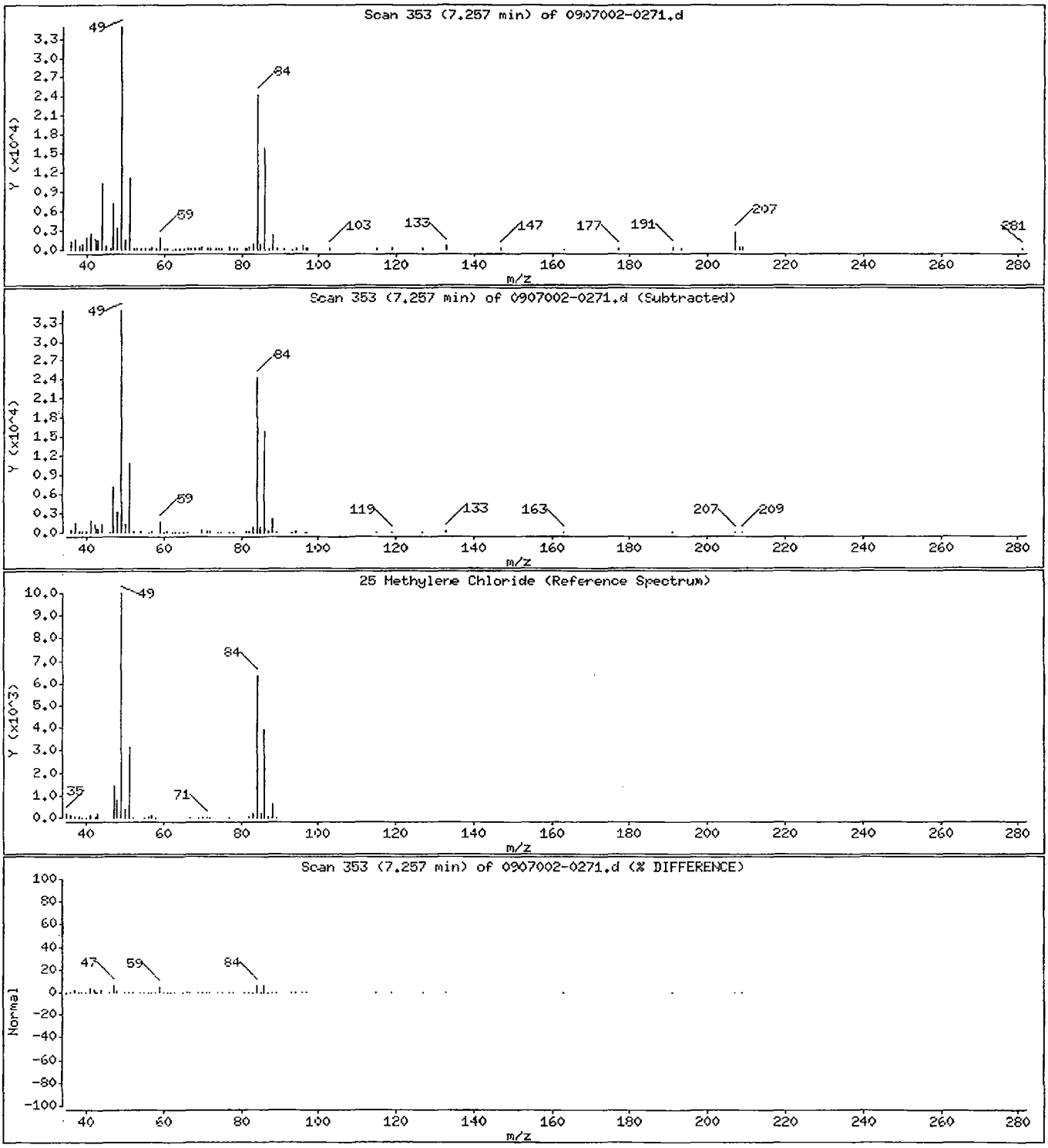
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-02:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

25 Methylene Chloride Concentration: 0.86 ug/L



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Date : 02-JUL-2009 14:00

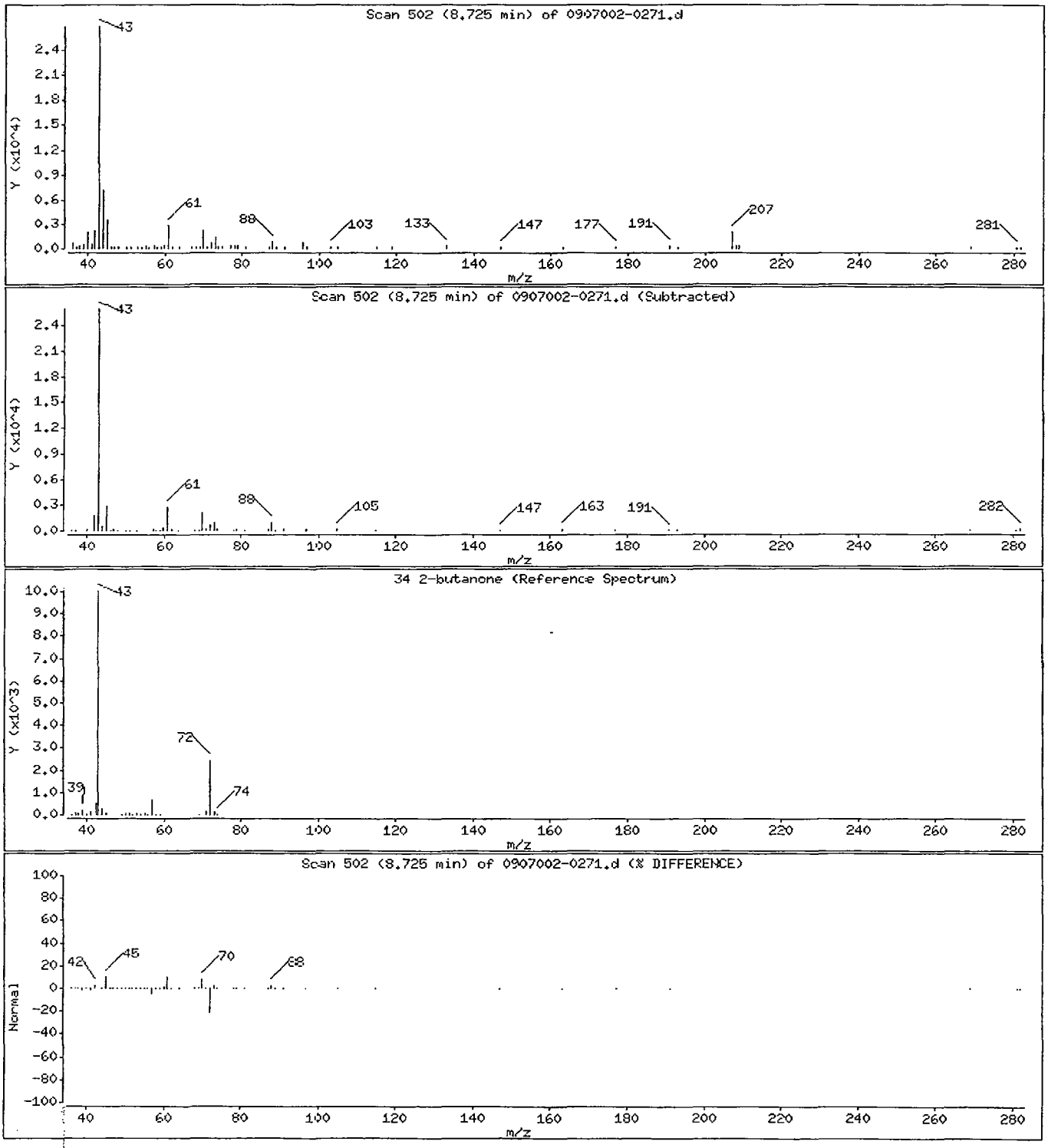
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-02:JA0

Purge Volume: 25.0 Operator: JA0

Column phase: SPB-624 Column diameter: 0.32

34 2-butanone Concentration: 9.7 ug/L



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Date : 02-JUL-2009 14:00

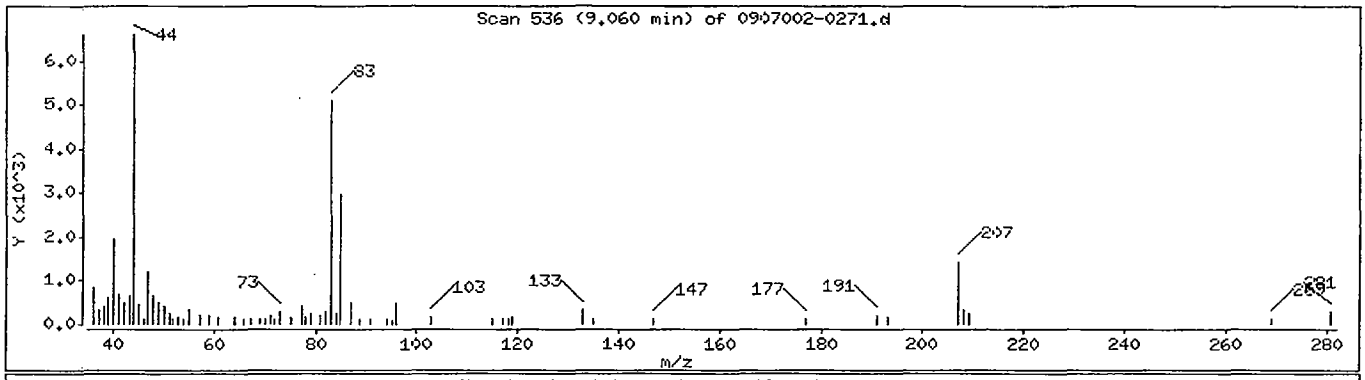
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

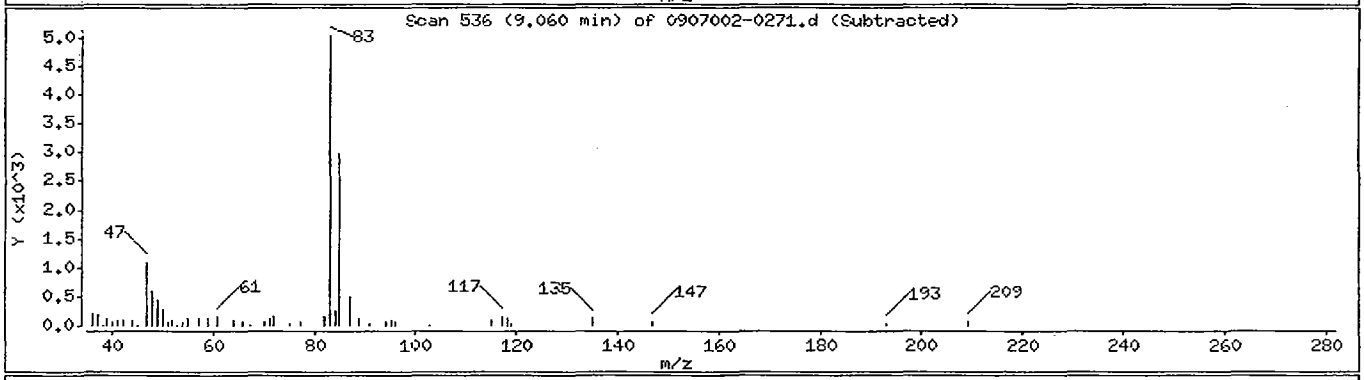
Sample Info: 0907002-02:JAO

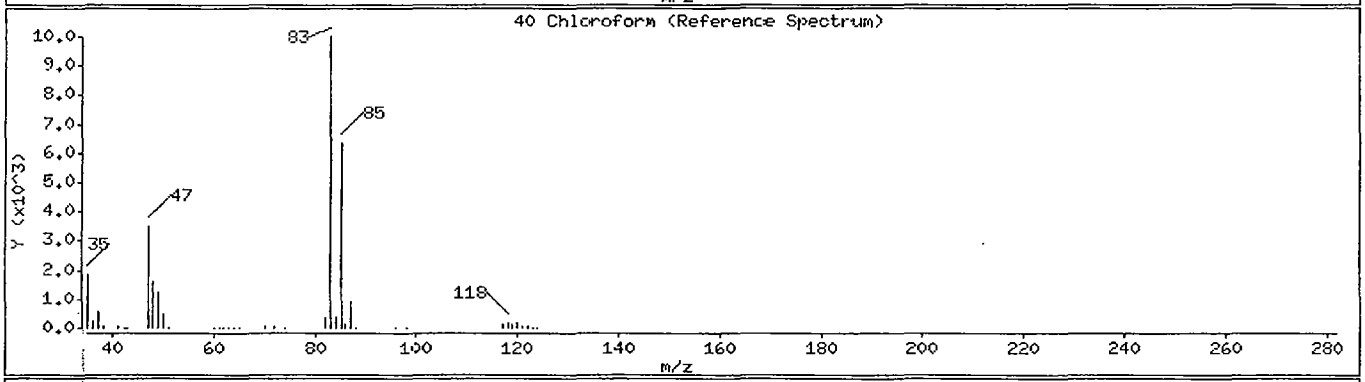
Purge Volume: 25.0 Operator: JAO

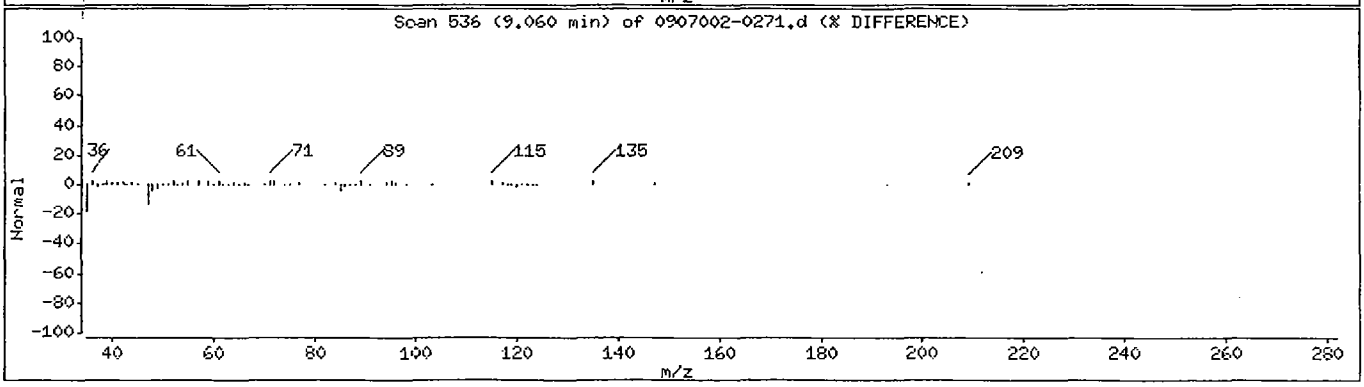
Column phase: SPB-624 Column diameter: 0.32

40 Chloroform Concentration: 0.13 ug/L









Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d

Date : 02-JUL-2009 14:00

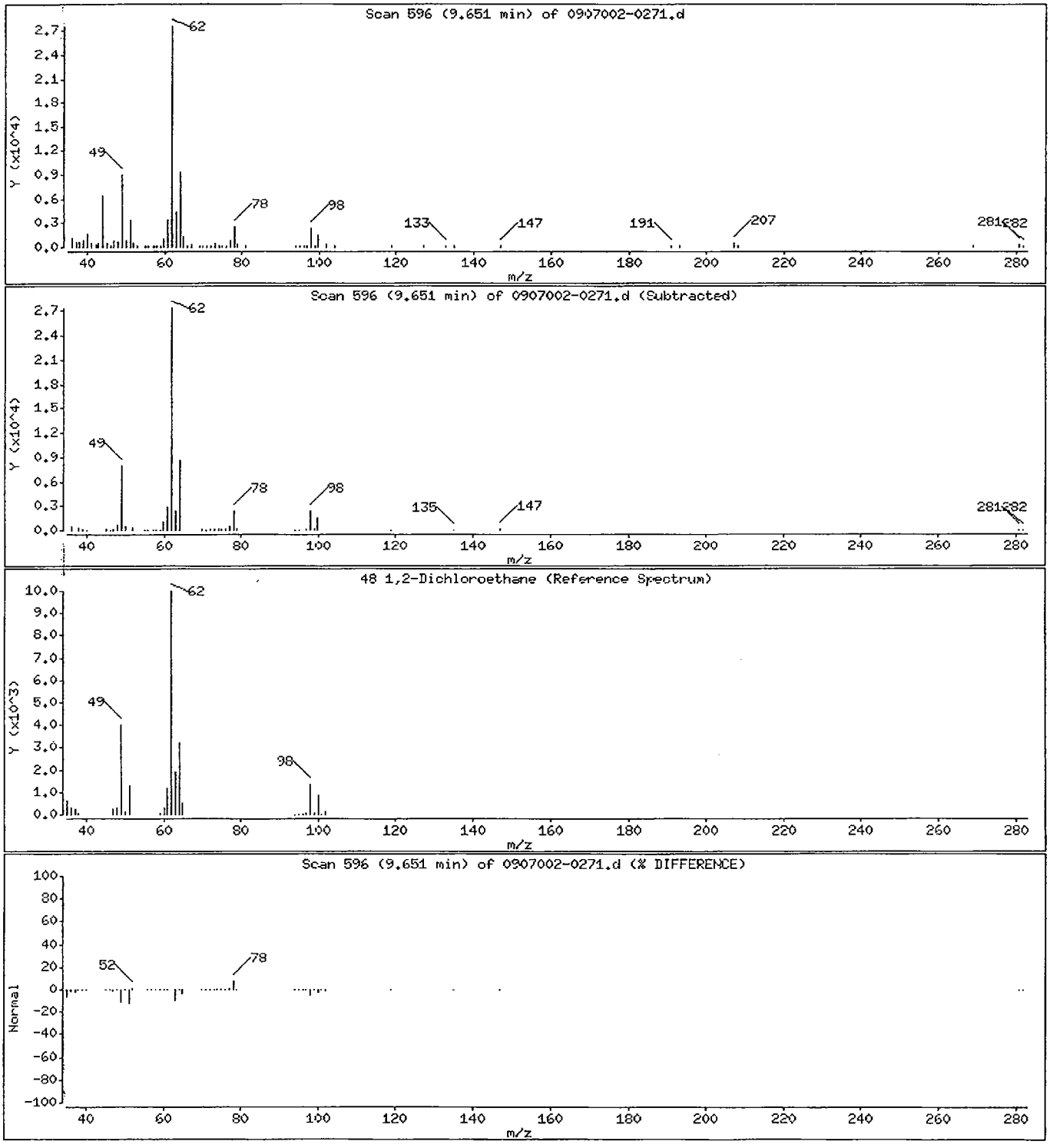
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-02:JAD

Purge Volume: 25.0 Operator: JAD

Column phase: SPB-624 Column diameter: 0.32

48 1,2-Dichloroethane Concentration: 1.3 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0271.d

Date : 02-JUL-2009 14:00

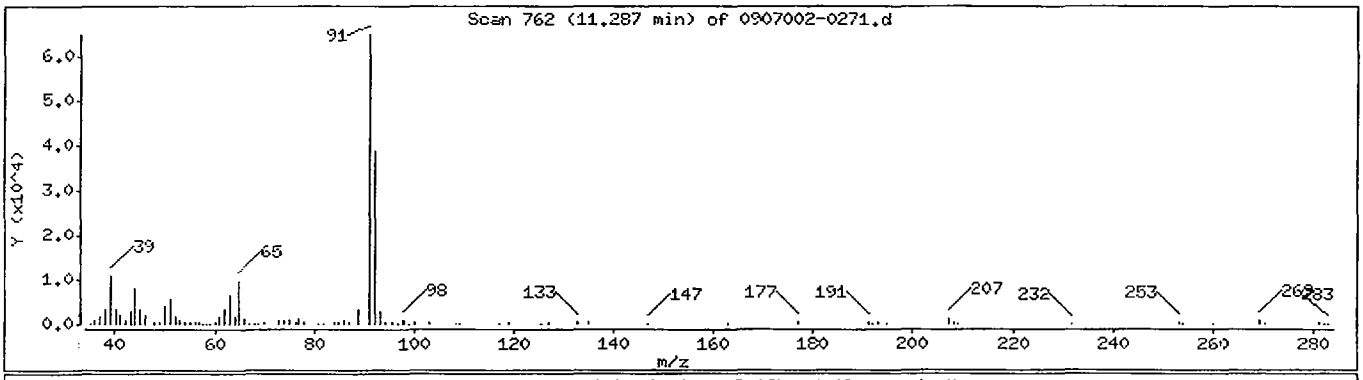
Client ID: YS06-EB01-063009 Instrument: 5972hp71.i

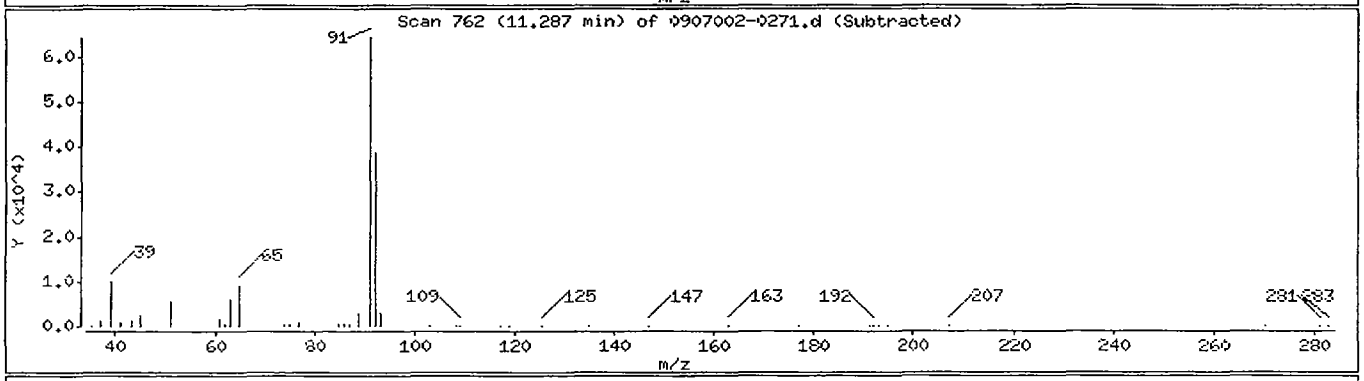
Sample Info: 0907002-02:JAO

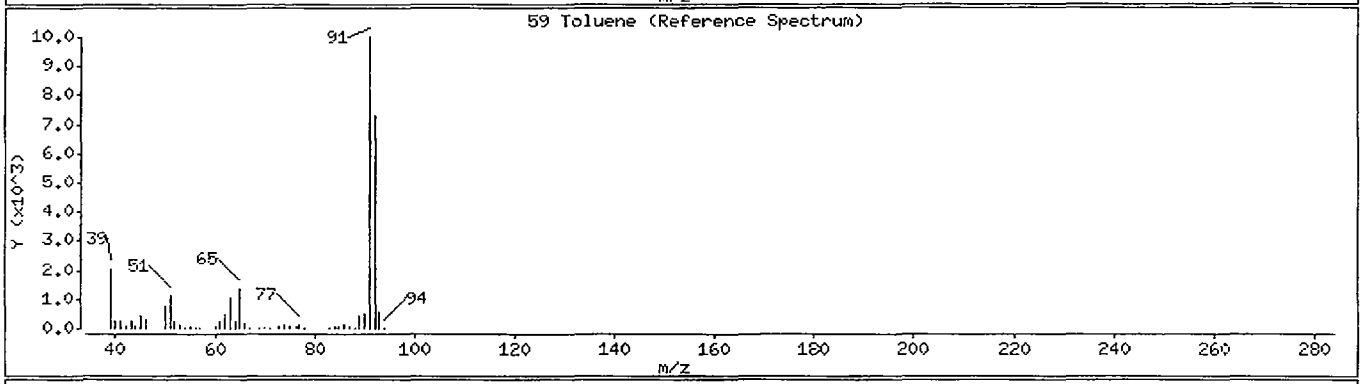
Purge Volume: 25.0 Operator: JAO

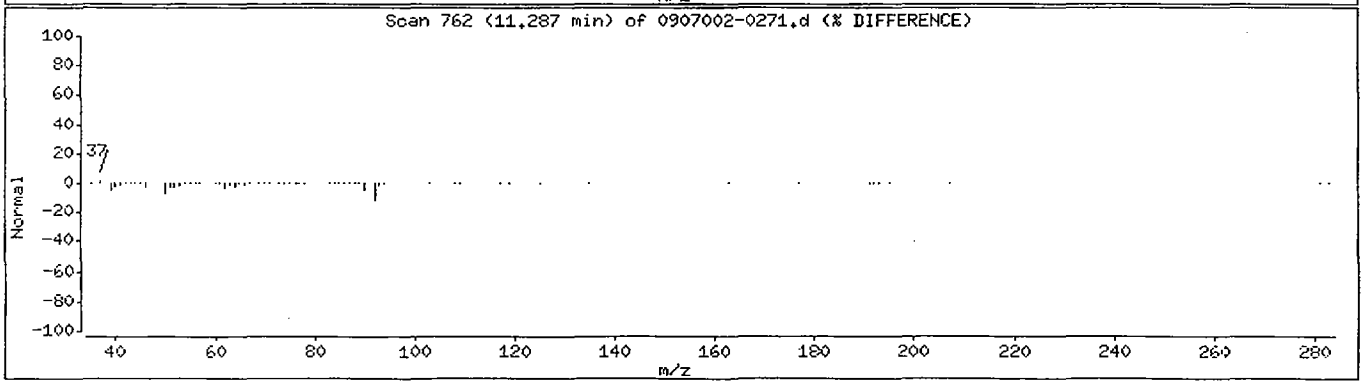
Column phase: SPB-624 Column diameter: 0.32

59 Toluene Concentration: 0.76 ug/L









FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0371

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.8	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.1	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.5	
67-66-3	Chloroform	0.11	J
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.5	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.92	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0371

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

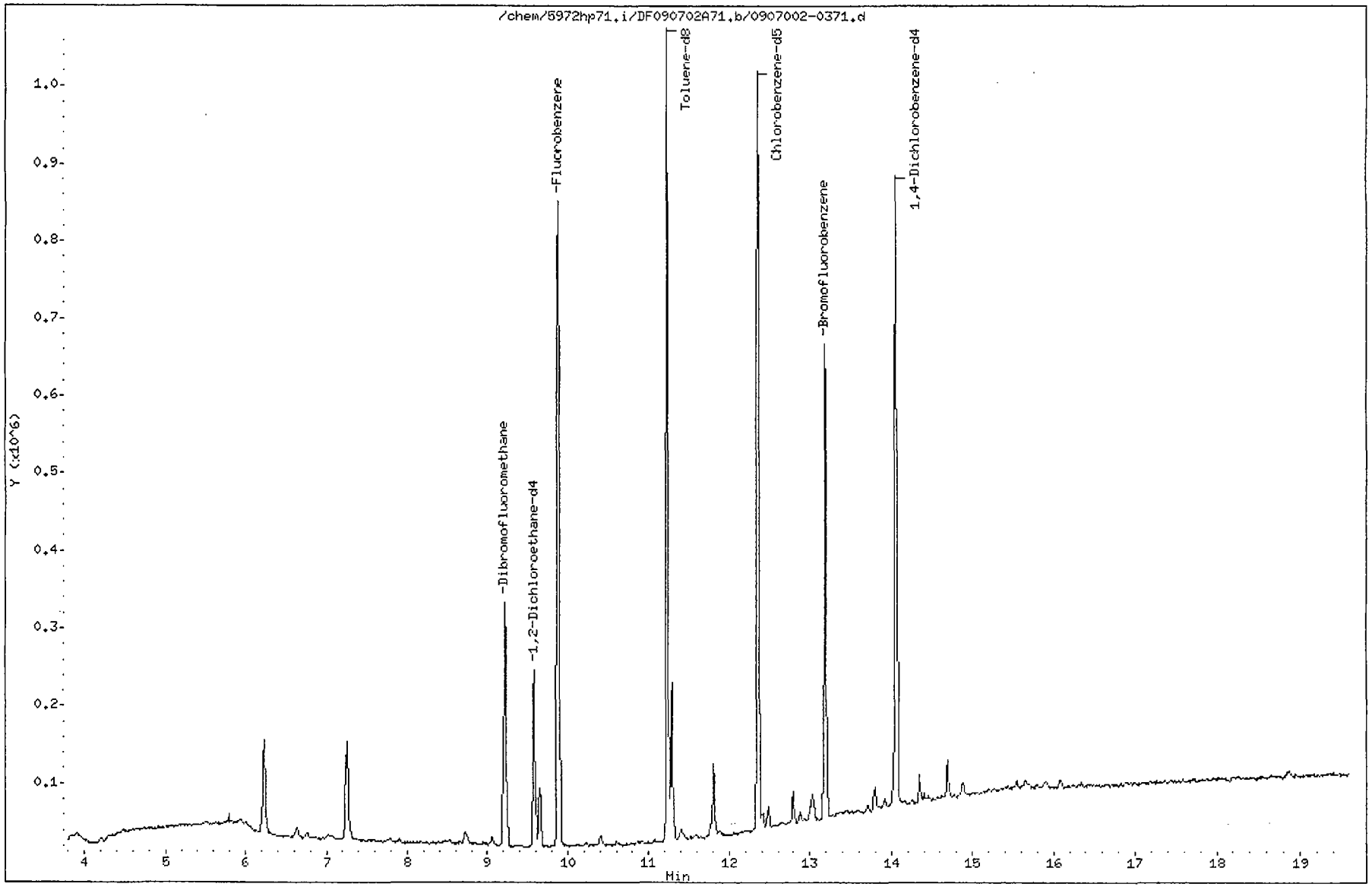
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d
Date : 02-JUL-2009 13:32
Client ID: YS06-FB01-063009
Sample Info: 0907002-03;JAD
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAD
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d
Report Date: 06-Jul-2009 16:54

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/0907002-0371.d
Lab Smp Id: 0907002-03 Client Smp ID: YS06-FB01-063009
Inj Date : 02-JUL-2009 13:32
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-03:JAO
Misc Info : YS06-FB01-063009
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:43 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1 Fluorobenzene	96	9.884	9.884	(1.000)	724281	125.000	
* 2 Chlorobenzene-d5	117	12.356	12.357	(1.000)	461006	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.051	14.051	(1.000)	206709	125.000	
$ 4 Dibromofluoromethane	113	9.214	9.214	(0.932)	196884	123.677	4.9
$ 5 1,2-Dichloroethane-d4	65	9.578	9.578	(0.969)	168917	136.381	5.5
$ 6 Toluene-d8	98	11.233	11.233	(0.909)	623368	125.493	5.0
$ 7 Bromofluorobenzene	95	13.184	13.184	(0.938)	223337	125.405	5.0
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	Compound Not Detected.					
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d
Report Date: 06-Jul-2009 16:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.632	6.632	(0.671)	23840	144.403	5.8
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	7.253	7.253	(0.734)	66417	28.1990	1.1
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	8.721	8.701	(0.882)	30051	112.733	4.5
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	9.056	9.056	(0.916)	8845	2.83479	0.11(a)
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	9.647	9.647	(0.976)	59646	38.3207	1.5
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	11.292	11.293	(0.914)	83114	22.9826	0.92
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d
Report Date: 06-Jul-2009 16:54

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d

Date : 02-JUL-2009 13:32

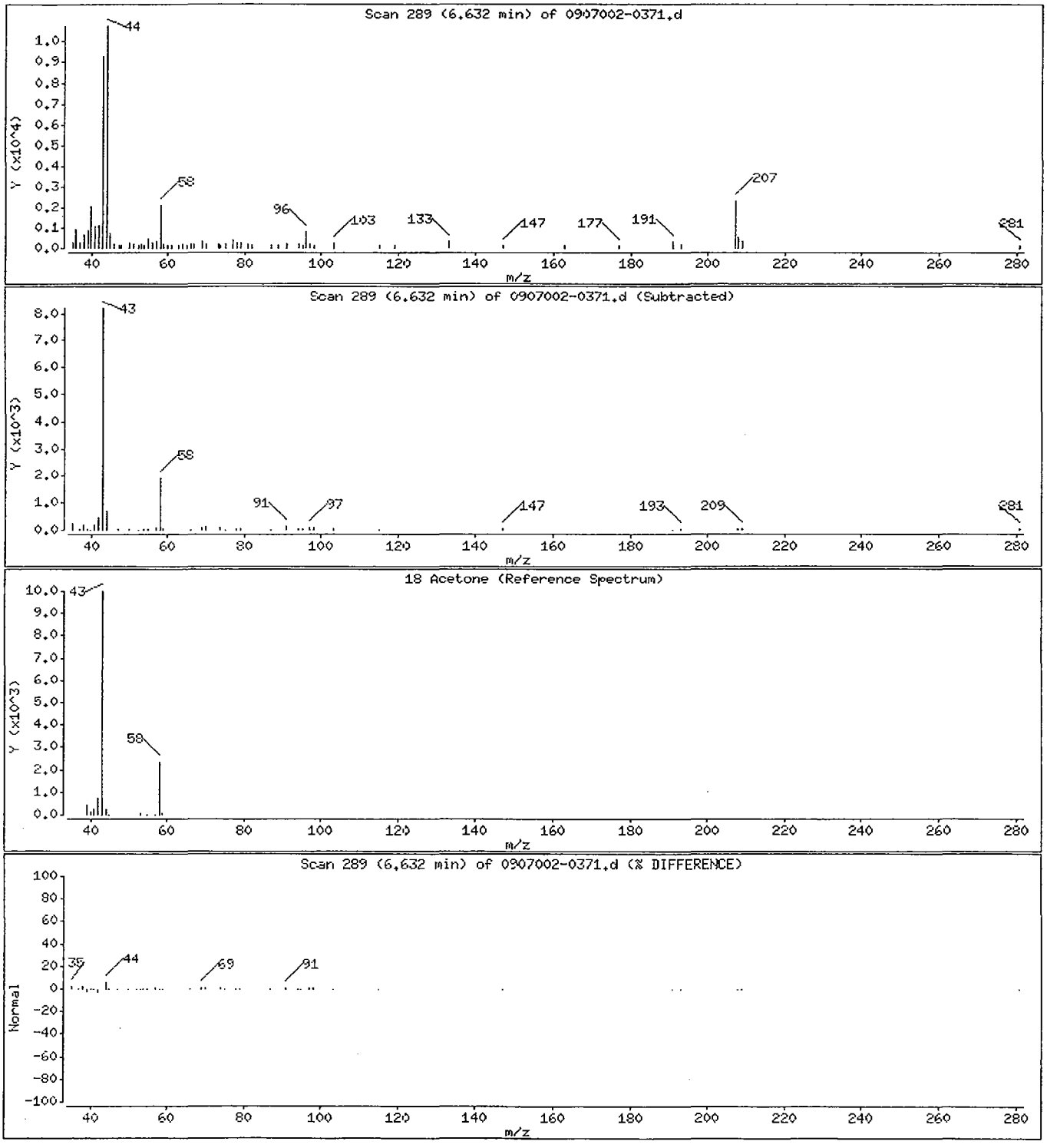
Client ID: YS06-FB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-03:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 5.8 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d

Date : 02-JUL-2009 13:32

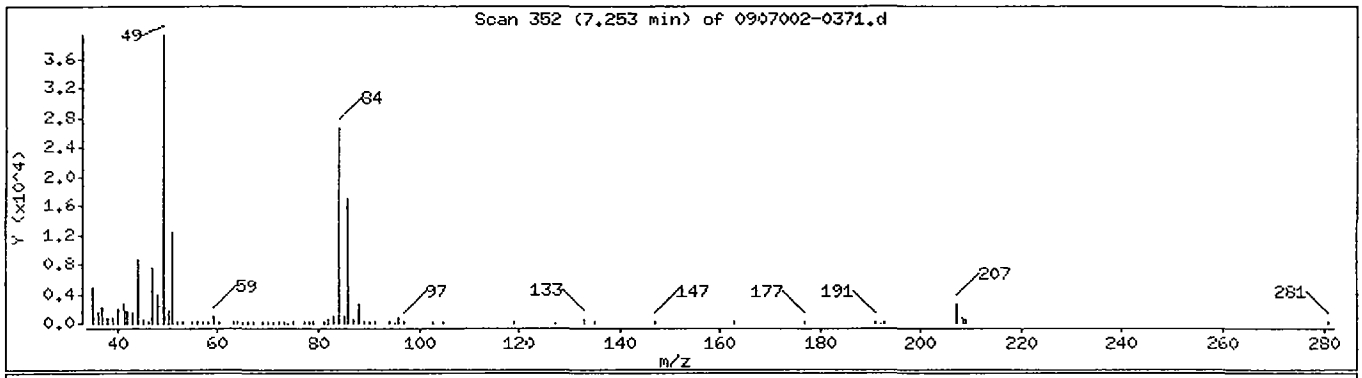
Client ID: YS06-FB01-063009 Instrument: 5972hp71.i

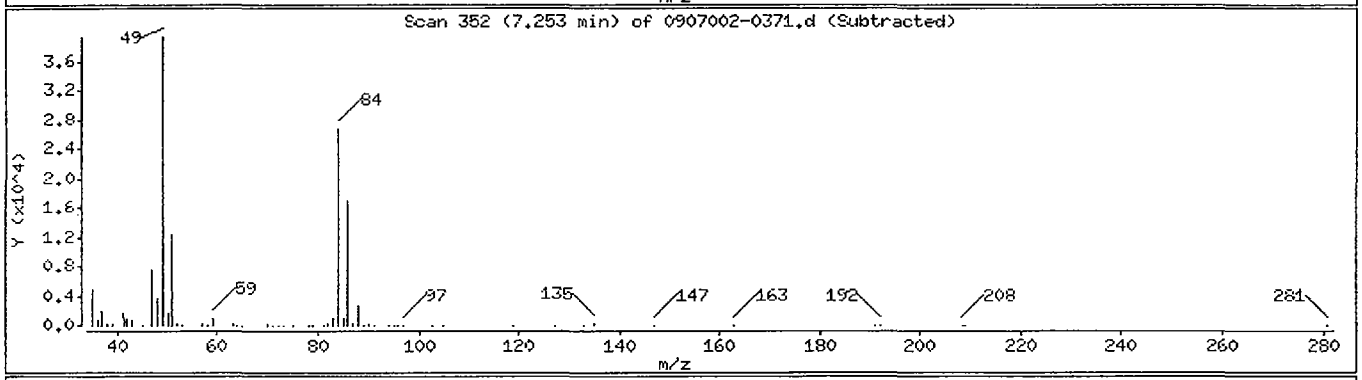
Sample Info: 0907002-03:JAO

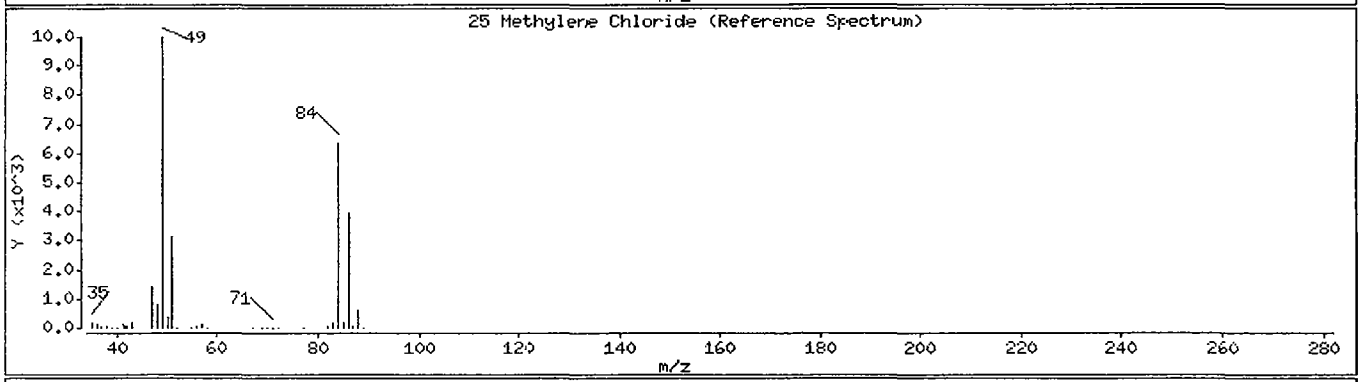
Purge Volume: 25.0 Operator: JAO

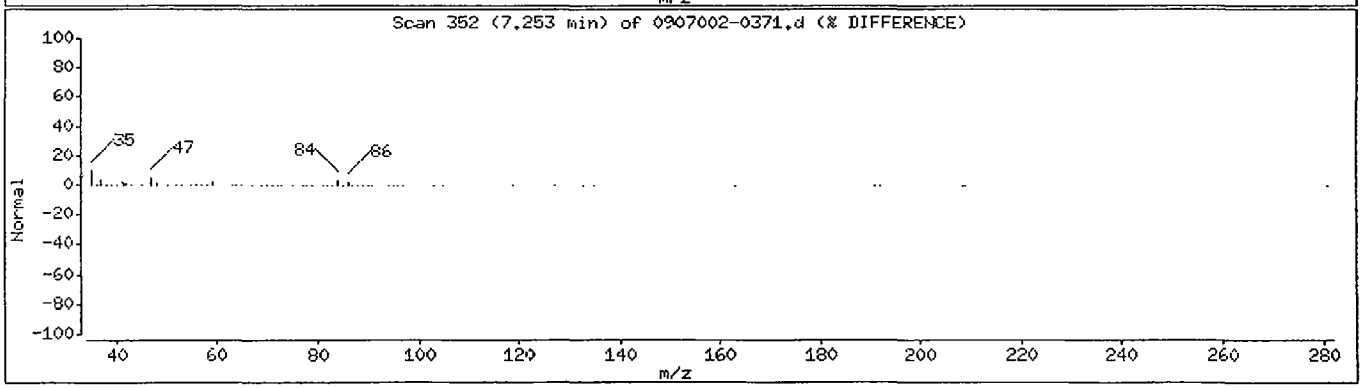
Column phase: SPB-624 Column diameter: 0.32

25 Methylene Chloride Concentration: 1.1 ug/L









Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d

Date : 02-JUL-2009 13:32

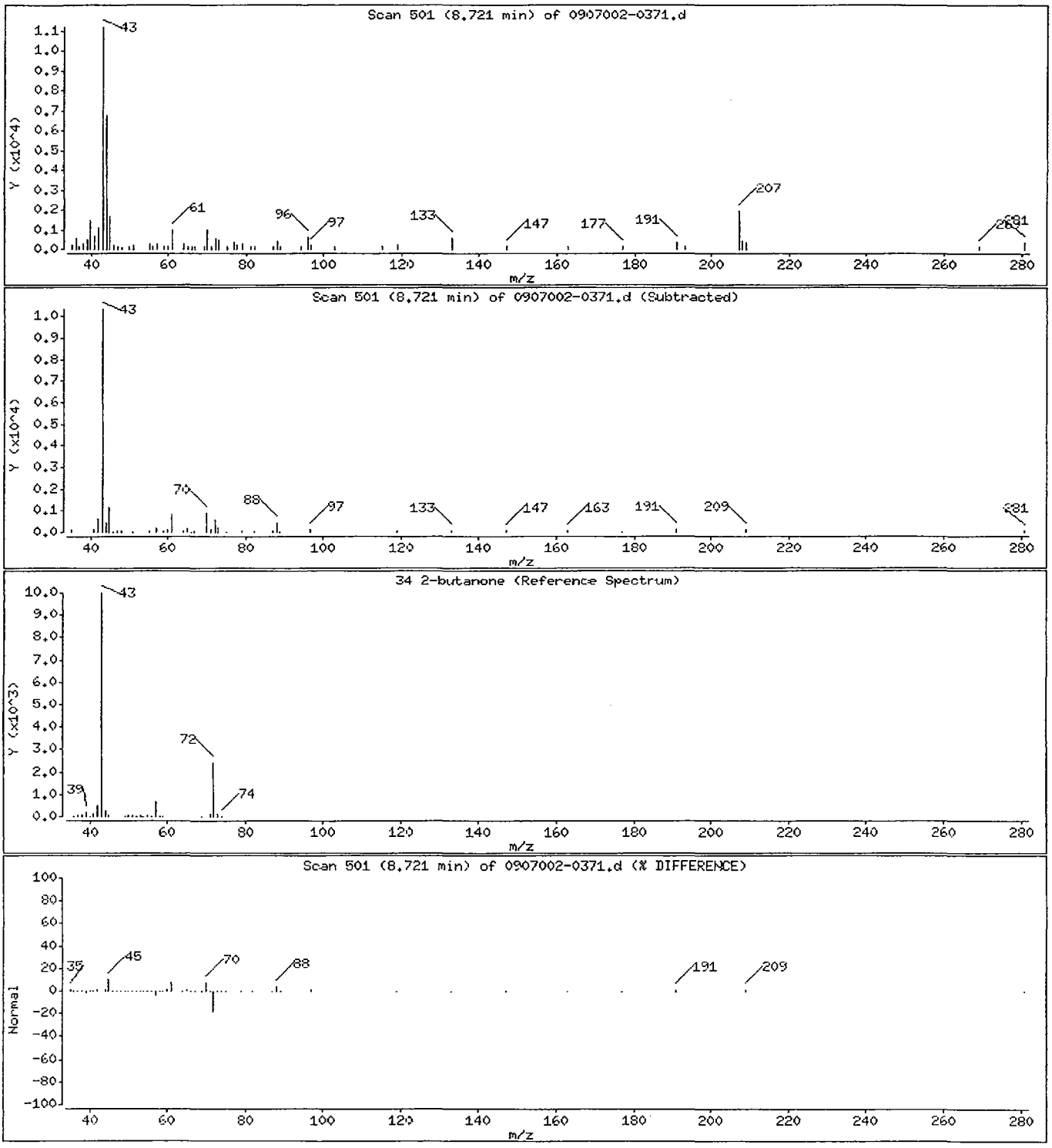
Client ID: YS06-FB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-03:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

34 2-butanone Concentration: 4.5 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d

Date : 02-JUL-2009 13:32

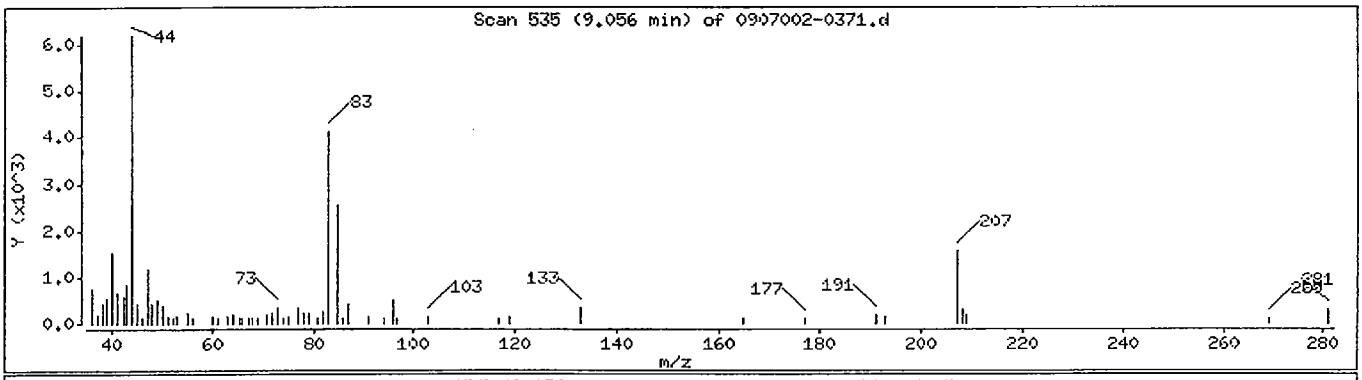
Client ID: YS06-FB01-063009 Instrument: 5972hp71.i

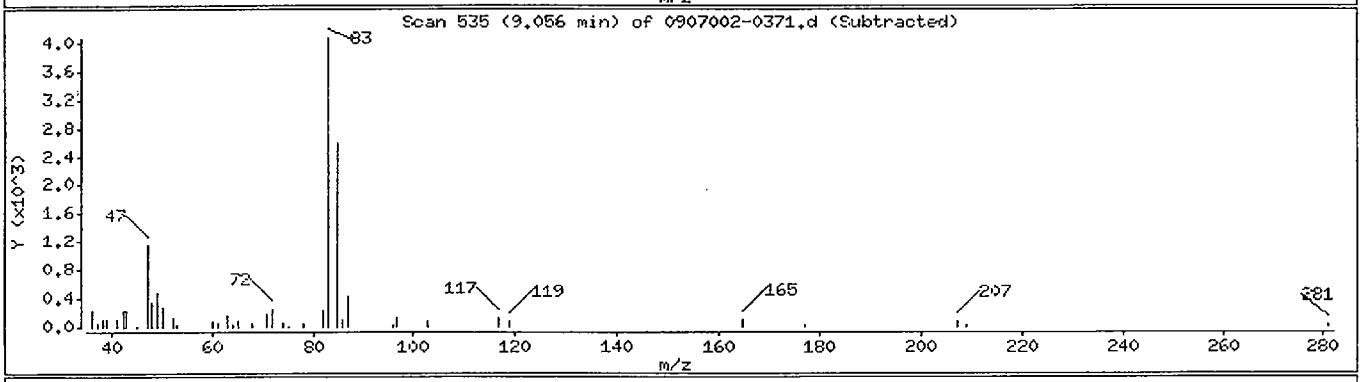
Sample Info: 0907002-03:JAO

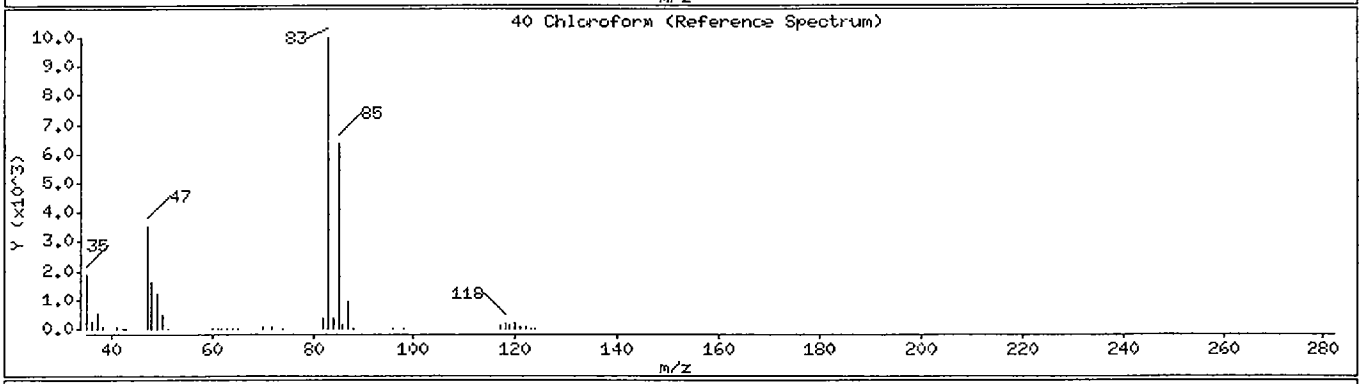
Purge Volume: 25.0 Operator: JAO

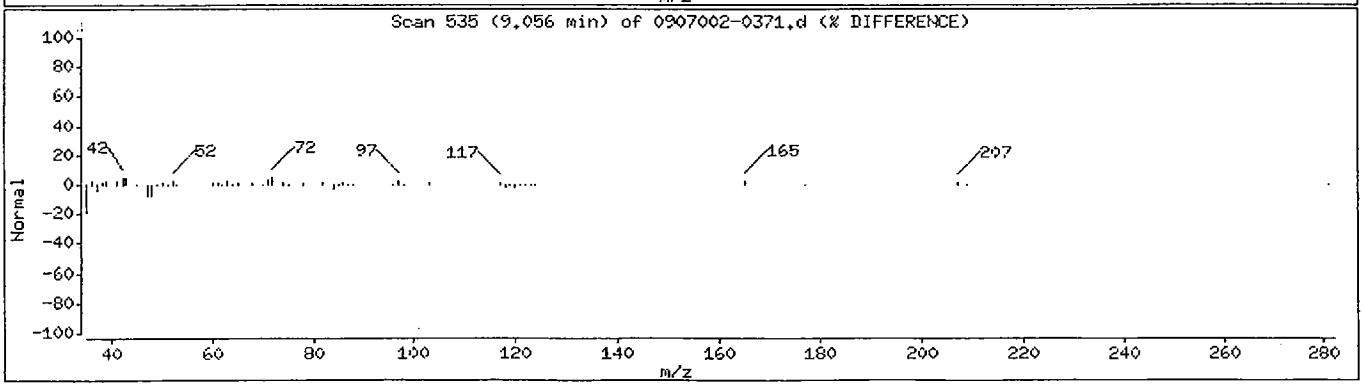
Column phase: SPB-624 Column diameter: 0.32

40 Chloroform Concentration: 0.11 ug/L









Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d

Date : 02-JUL-2009 13:32

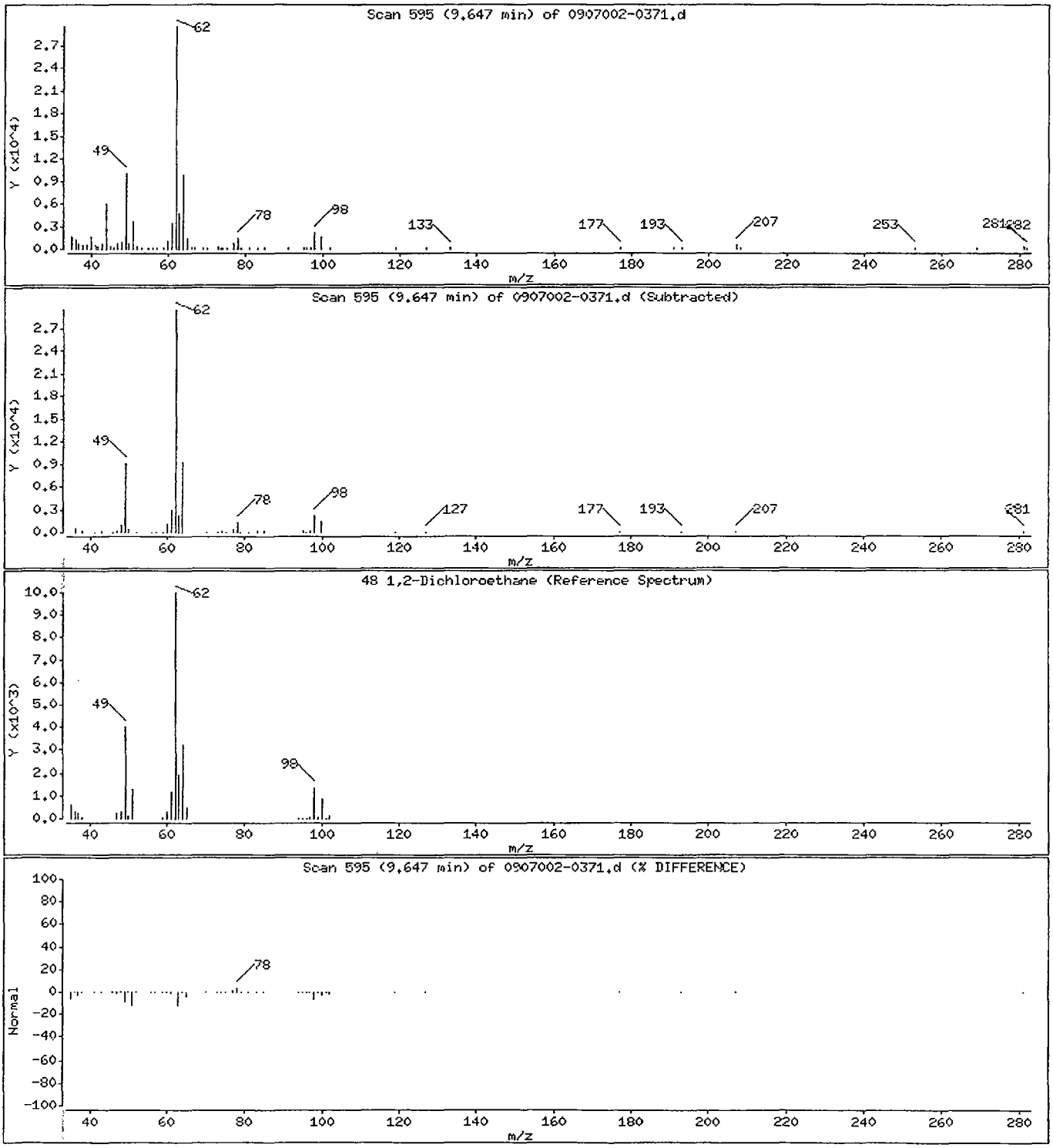
Client ID: YS06-FB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-03:JA0

Purge Volume: 25.0 Operator: JA0

Column phase: SPB-624 Column diameter: 0.32

48 1,2-Dichloroethane Concentration: 1.5 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0371.d

Date : 02-JUL-2009 13:32

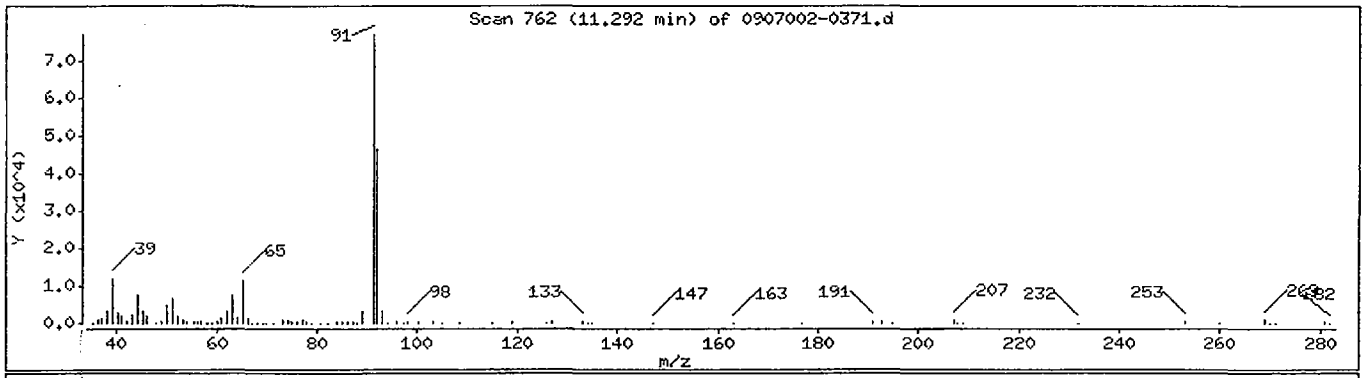
Client ID: YS06-FB01-063009 Instrument: 5972hp71.i

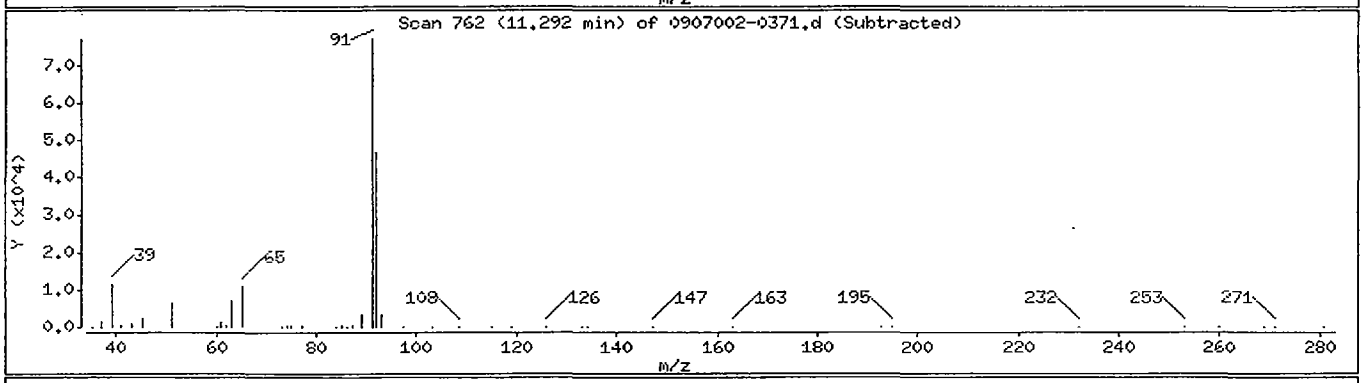
Sample Info: 0907002-03:JAO

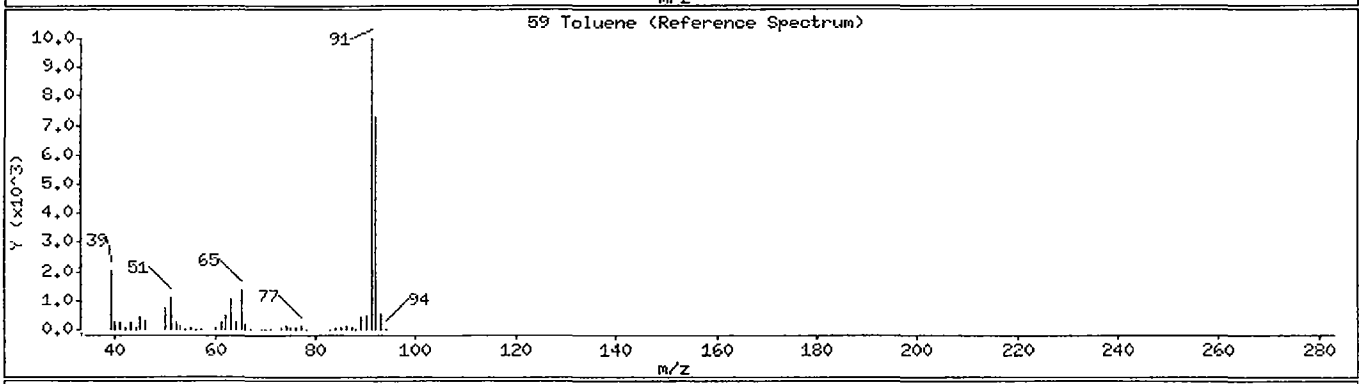
Purge Volume: 25.0 Operator: JAO

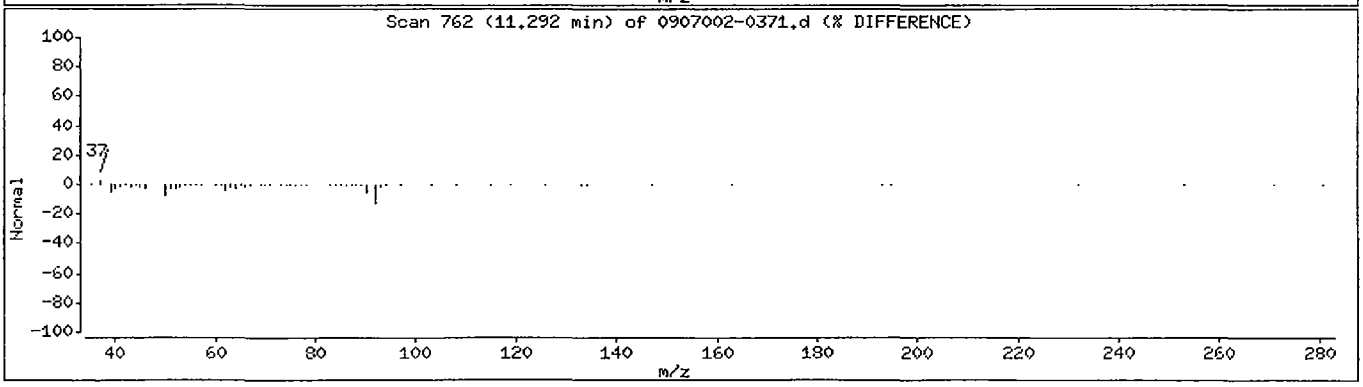
Column phase: SPB-624 Column diameter: 0.32

59 Toluene Concentration: 0.92 ug/L









FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW16-0609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0171

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.25	J
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	1.9	
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.16	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW16-0609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0171

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/02/09

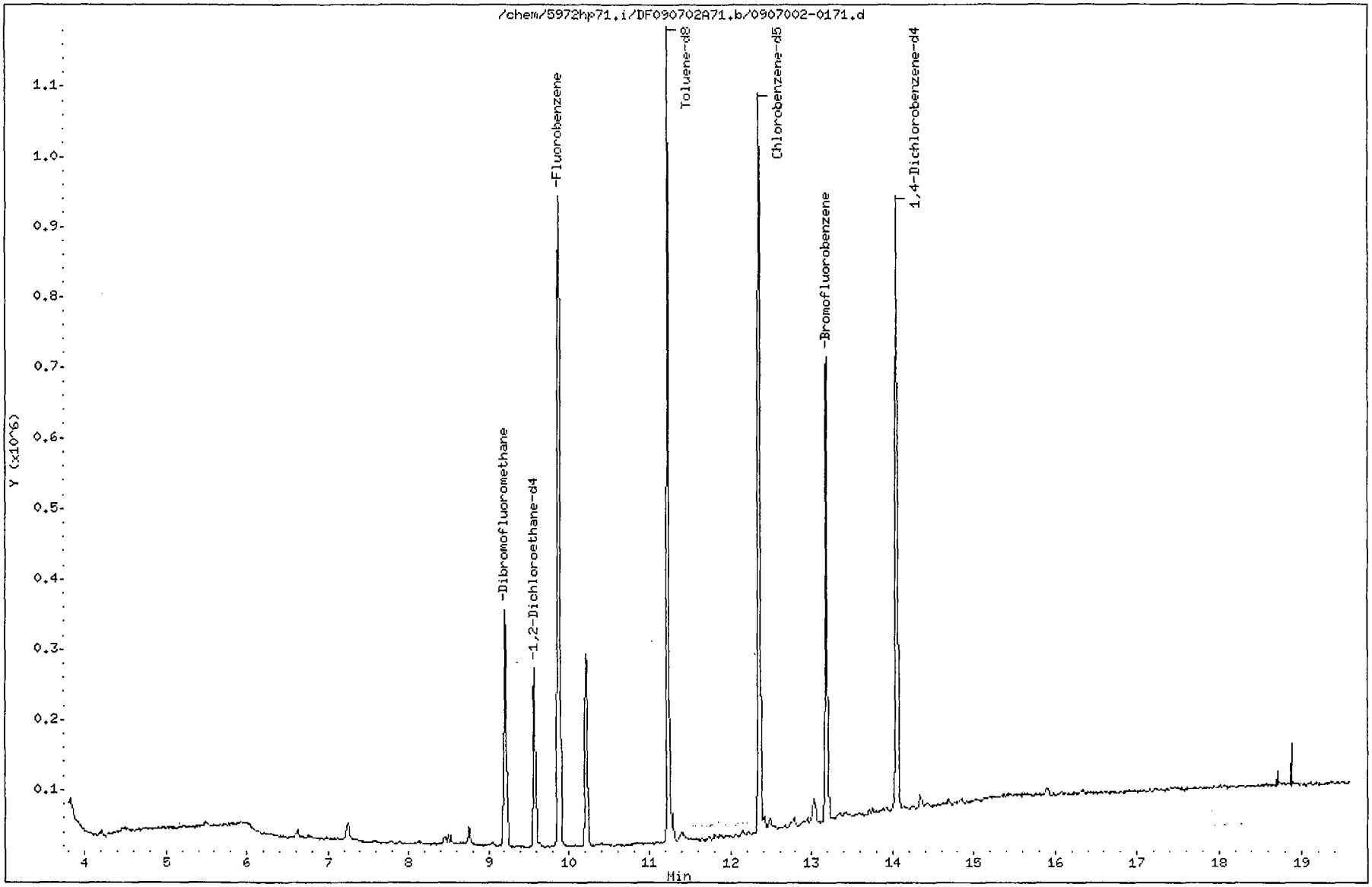
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.25	J
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d
Date : 02-JUL-2009 14:29
Client ID: YS06-GW16-0609
Sample Info: 0907002-01;JA0
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JA0
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d
Report Date: 06-Jul-2009 16:54

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/0907002-0171.d
Lab Smp Id: 0907002-01 Client Smp ID: YS06-GW16-0609
Inj Date : 02-JUL-2009 14:29
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-01:JAO
Misc Info : YS06-GW16-0609
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:43 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 1	Fluorobenzene	96	9.882	9.884	(1.000)	794257	125.000	
* 2	Chlorobenzene-d5	117	12.355	12.357	(1.000)	502620	125.000	
* 3	1,4-Dichlorobenzene-d4	152	14.060	14.051	(1.000)	228721	125.000	
$ 4	Dibromofluoromethane	113	9.212	9.214	(0.932)	217200	124.441	5.0
$ 5	1,2-Dichloroethane-d4	65	9.577	9.578	(0.969)	189433	139.515	5.6
$ 6	Toluene-d8	98	11.232	11.233	(0.909)	686513	127.062	5.1
$ 7	Bromofluorobenzene	95	13.183	13.184	(0.938)	246631	125.117	5.0
8	Dichlorodifluoromethane	85	Compound Not Detected.					
9	Chloromethane	50	Compound Not Detected.					
10	Vinyl Chloride	62	Compound Not Detected.					
11	Bromomethane	94	Compound Not Detected.					
12	Chloroethane	64	Compound Not Detected.					
13	Trichlorofluoromethane	101	Compound Not Detected.					
17	1,1-Dichloroethene	96	Compound Not Detected.					
16	1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d
Report Date: 06-Jul-2009 16:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.631	6.632	(0.671)	8314	45.9226	1.8(a)
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	8.769	8.760	(0.887)	11497	6.28542	0.25(a)
40	Chloroform	83	Compound Not Detected.					
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	10.217	10.219	(1.034)	84331	47.7681	1.9
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	11.291	11.293	(0.914)	15478	3.92561	0.16(a)
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96				11497	6.29157	0.25(a)
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d
Report Date: 06-Jul-2009 16:54

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d

Date : 02-JUL-2009 14:29

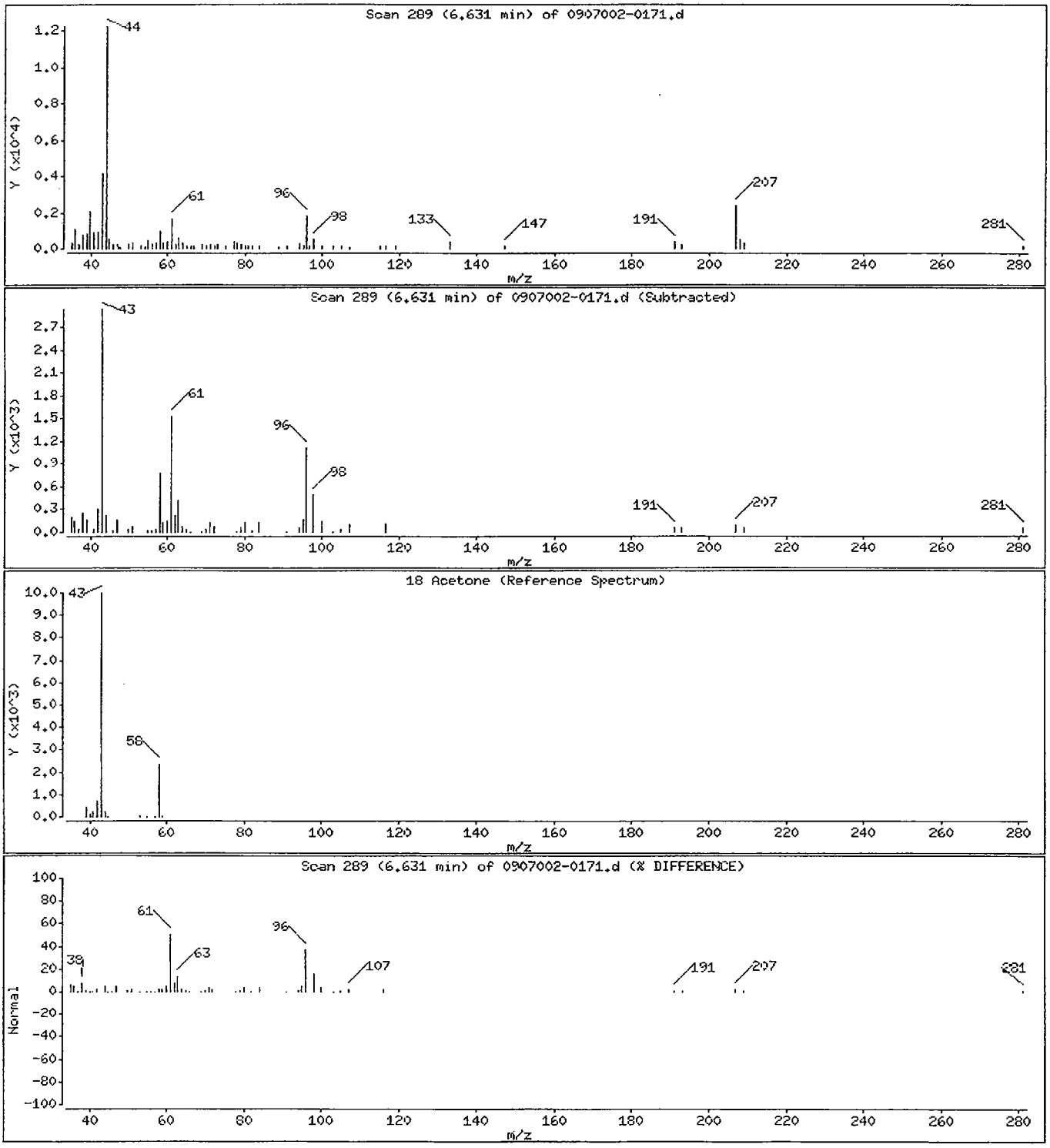
Client ID: YS06-GW16-0609 Instrument: 5972hp71.i

Sample Info: 0907002-01:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 1.8 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d

Date : 02-JUL-2009 14:29

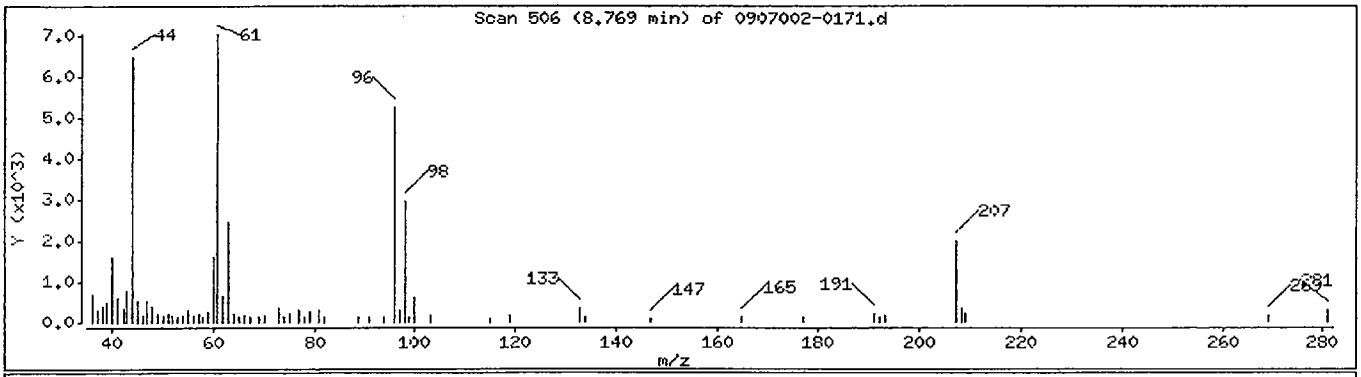
Client ID: YS06-GW16-0609 Instrument: 5972hp71.i

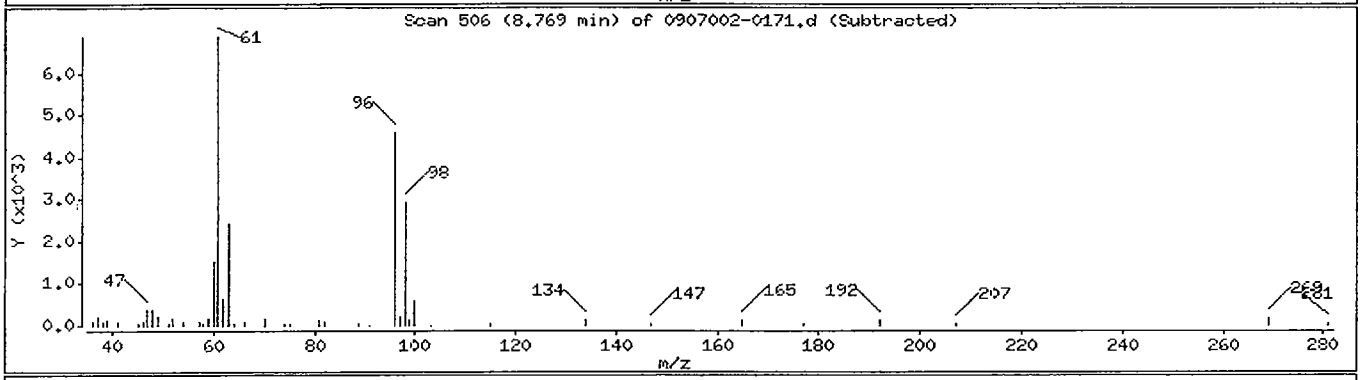
Sample Info: 0907002-01:JAO

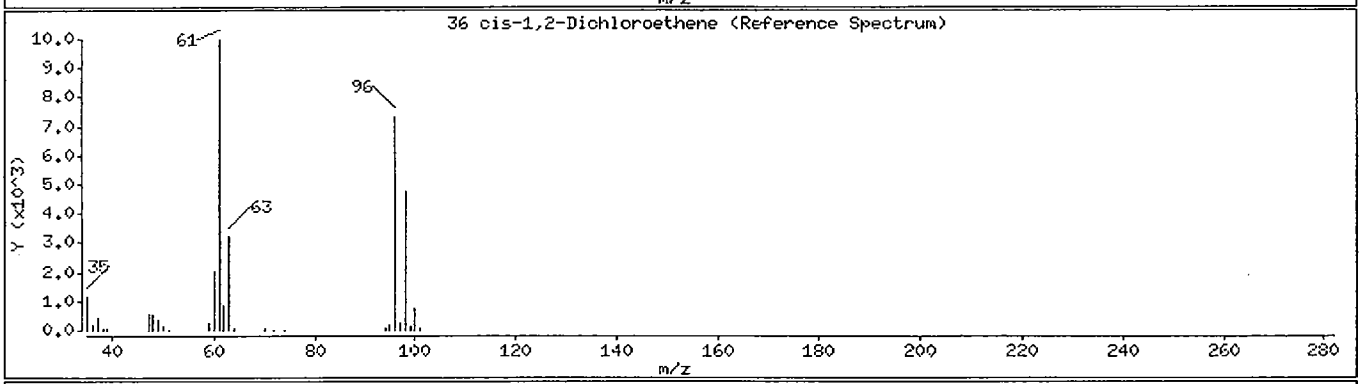
Purge Volume: 25.0 Operator: JAO

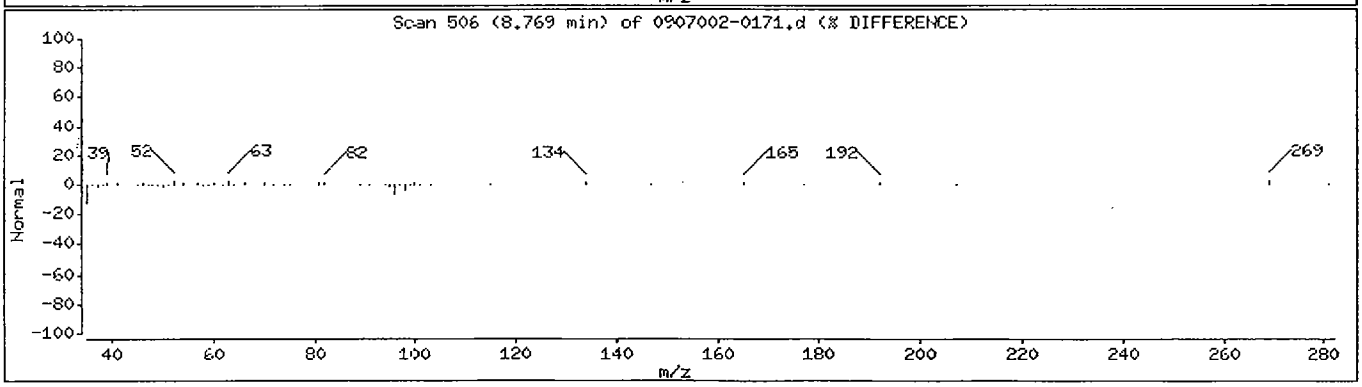
Column phase: SPB-624 Column diameter: 0.32

36 cis-1,2-Dichloroethene Concentration: 0.25 ug/L









Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d

Date : 02-JUL-2009 14:29

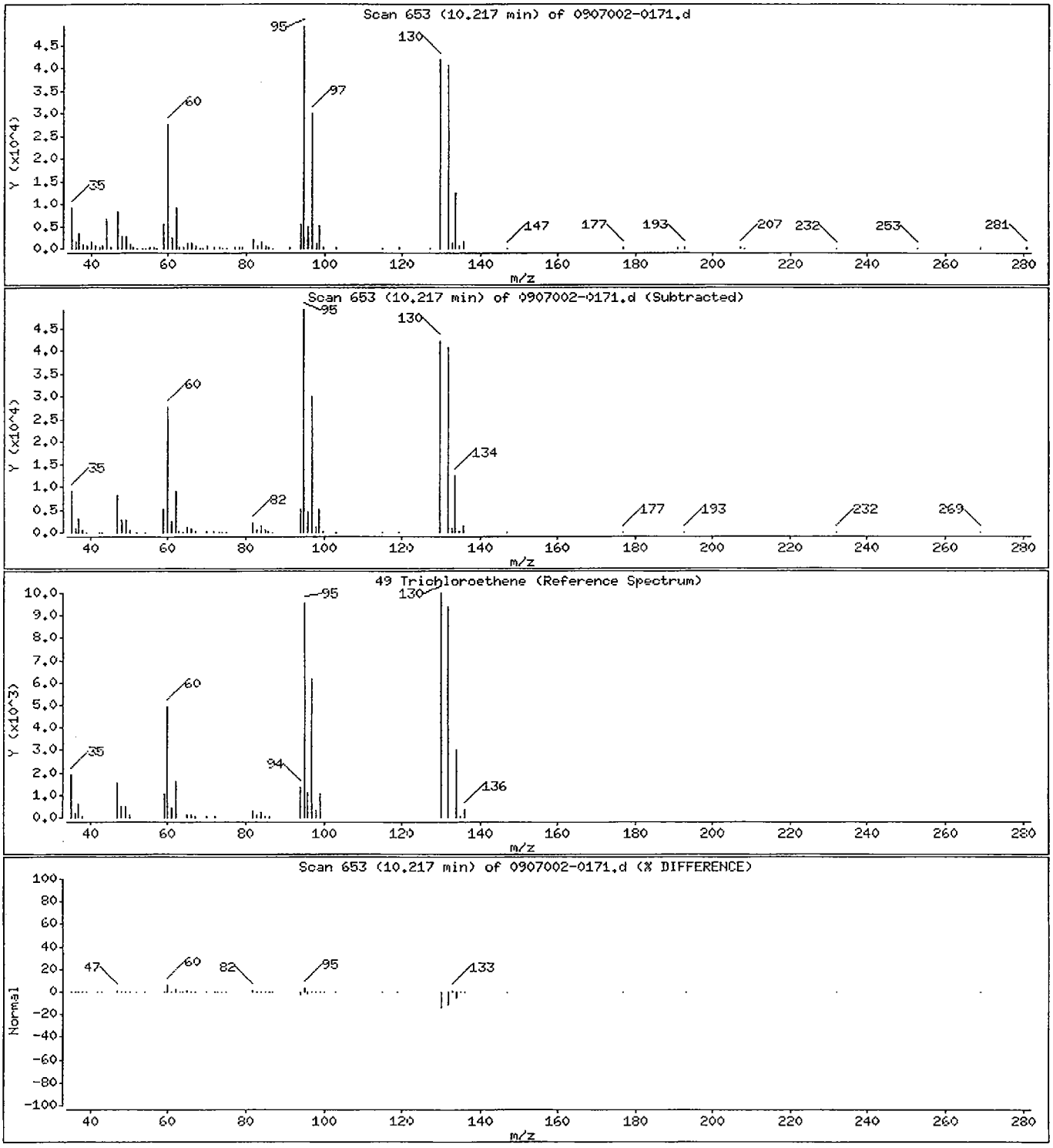
Client ID: YS06-GW16-0609 Instrument: 5972hp71.i

Sample Info: 0907002-01:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

49 Trichloroethene Concentration: 1.9 ug/L



Data File: /chem/5972hp71.i/DF090702A71.b/0907002-0171.d

Date : 02-JUL-2009 14:29

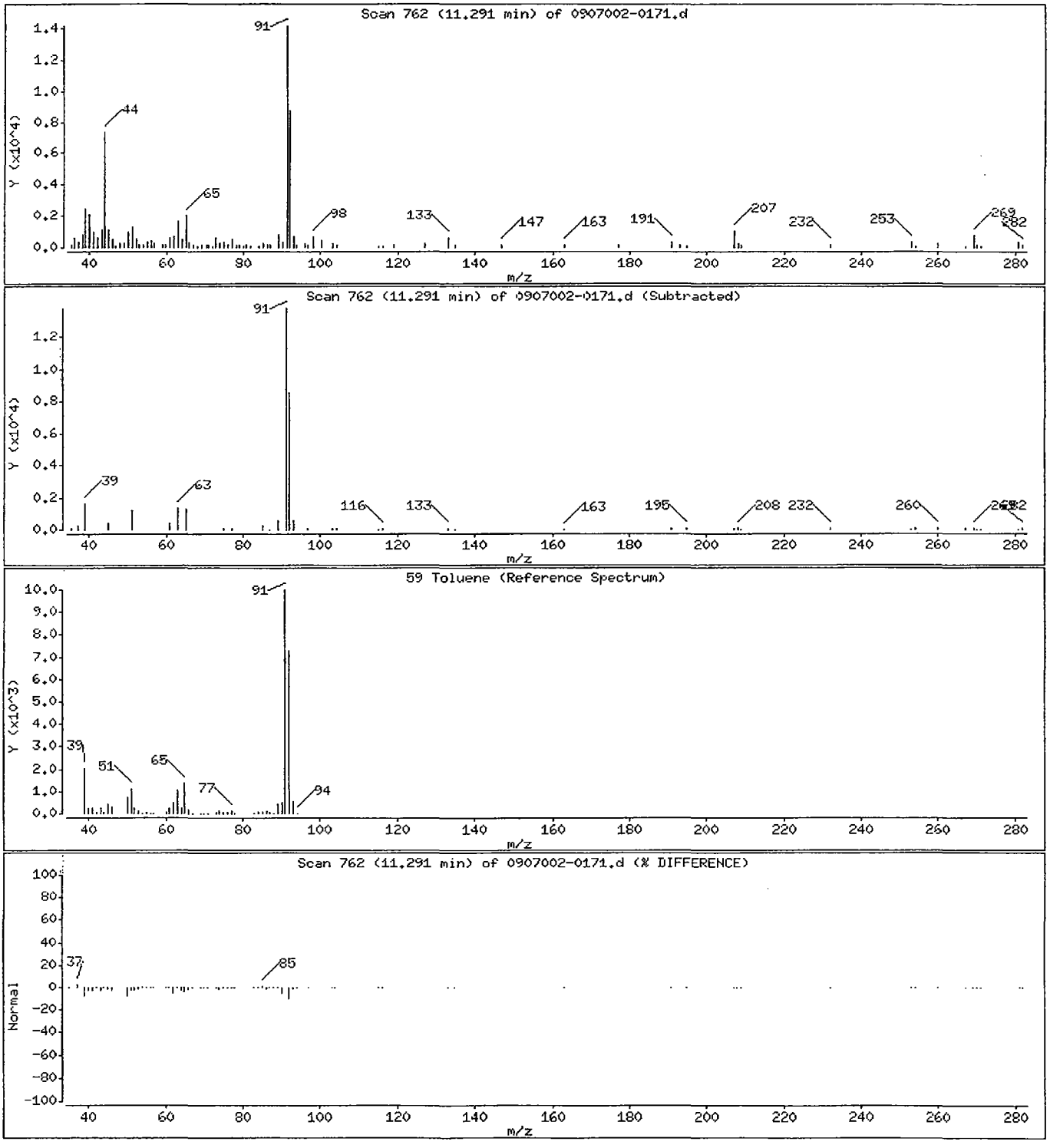
Client ID: YS06-GW16-0609 Instrument: 5972hp71.i

Sample Info: 0907002-01:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

59 Toluene Concentration: 0.16 ug/L



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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-04R71

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-063009

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-04R71

Level: (low/med) LOW Date Received: 07/01/09

% Moisture: not dec. _____ Date Analyzed: 07/06/09

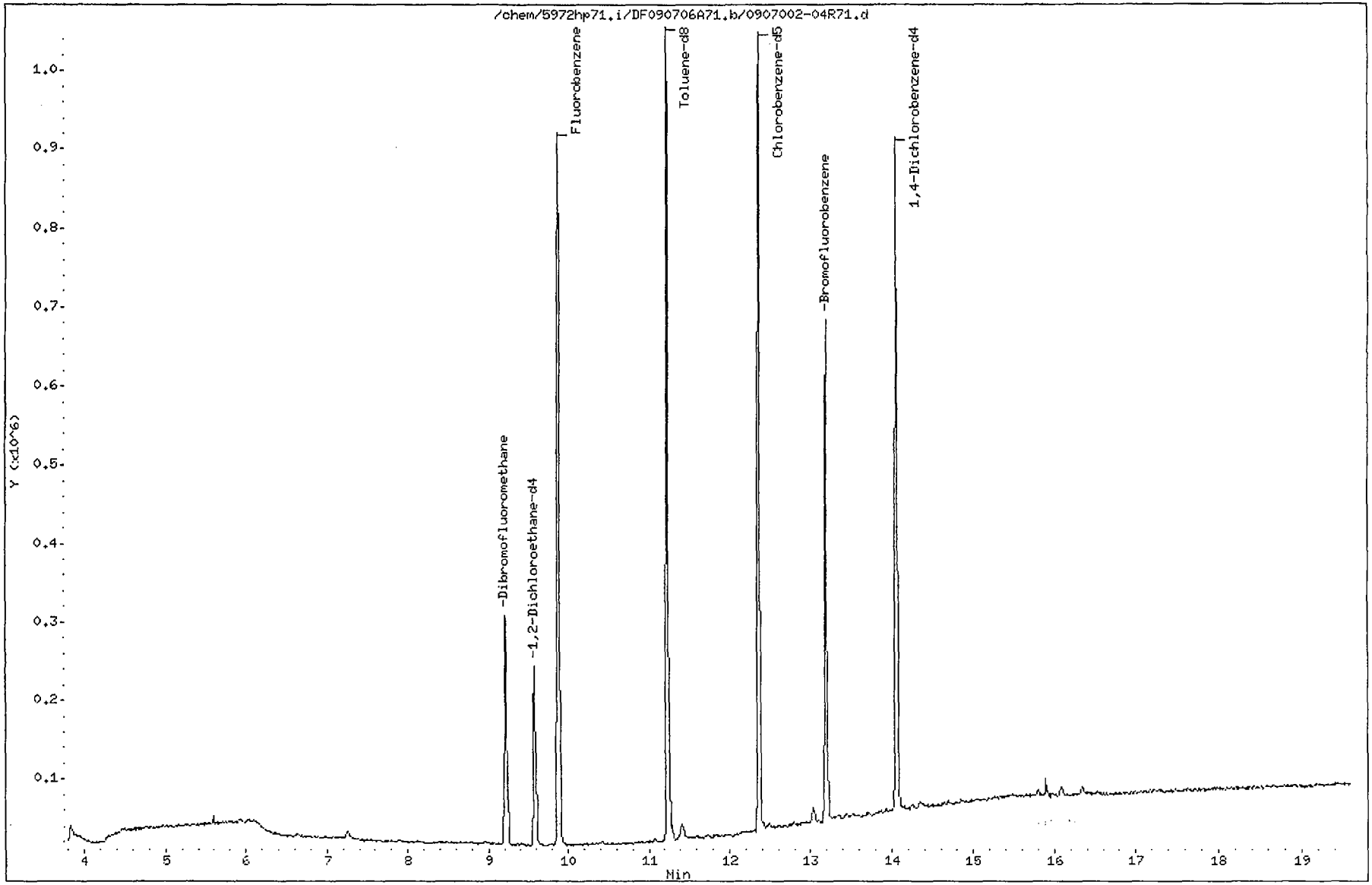
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DF090706A71.b/0907002-04R71.d
Date : 06-JUL-2009 14:03
Client ID: YS06-TB01-063009
Sample Info: 0907002-04:JA0
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JA0
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090706A71.b/0907002-04R71.d
Report Date: 07-Jul-2009 15:18

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

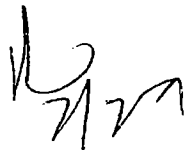
Data file : /chem/5972hp71.i/DF090706A71.b/0907002-04R71.d
Lab Smp Id: 0907002-04 Client Smp ID: YS06-TB01-063009
Inj Date : 06-JUL-2009 14:03
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-04:JAO
Misc Info : YS06-TB01-063009
Comment :
Method : /chem/5972hp71.i/DF090706A71.b/W8260-B-25MLv11.m
Meth Date : 07-Jul-2009 14:53 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 1 Fluorobenzene	96	9.881	9.882	(1.000)	755388	125.000	
* 2 Chlorobenzene-d5	117	12.363	12.365	(1.000)	483282	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.058	14.059	(1.000)	204024	125.000	
$ 4 Dibromofluoromethane	113	9.221	9.212	(0.933)	194533	116.963	4.7
$ 5 1,2-Dichloroethane-d4	65	9.575	9.577	(0.969)	169638	131.250	5.2
$ 6 Toluene-d8	98	11.230	11.232	(0.908)	619739	117.484	4.7
$ 7 Bromofluorobenzene	95	13.191	13.192	(0.938)	218589	124.185	5.0
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	Compound Not Detected.					
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					



Data File: /chem/5972hp71.i/DF090706A71.b/0907002-04R71.d
Report Date: 07-Jul-2009 15:18

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.629	6.631	(0.671)	7067	41.0433	1.6(a)
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	Compound Not Detected.					
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	Compound Not Detected.					
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090706A71.b/0907002-04R71.d
Report Date: 07-Jul-2009 15:18

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DF090706A71.b/0907002-04R71.d

Date : 06-JUL-2009 14:03

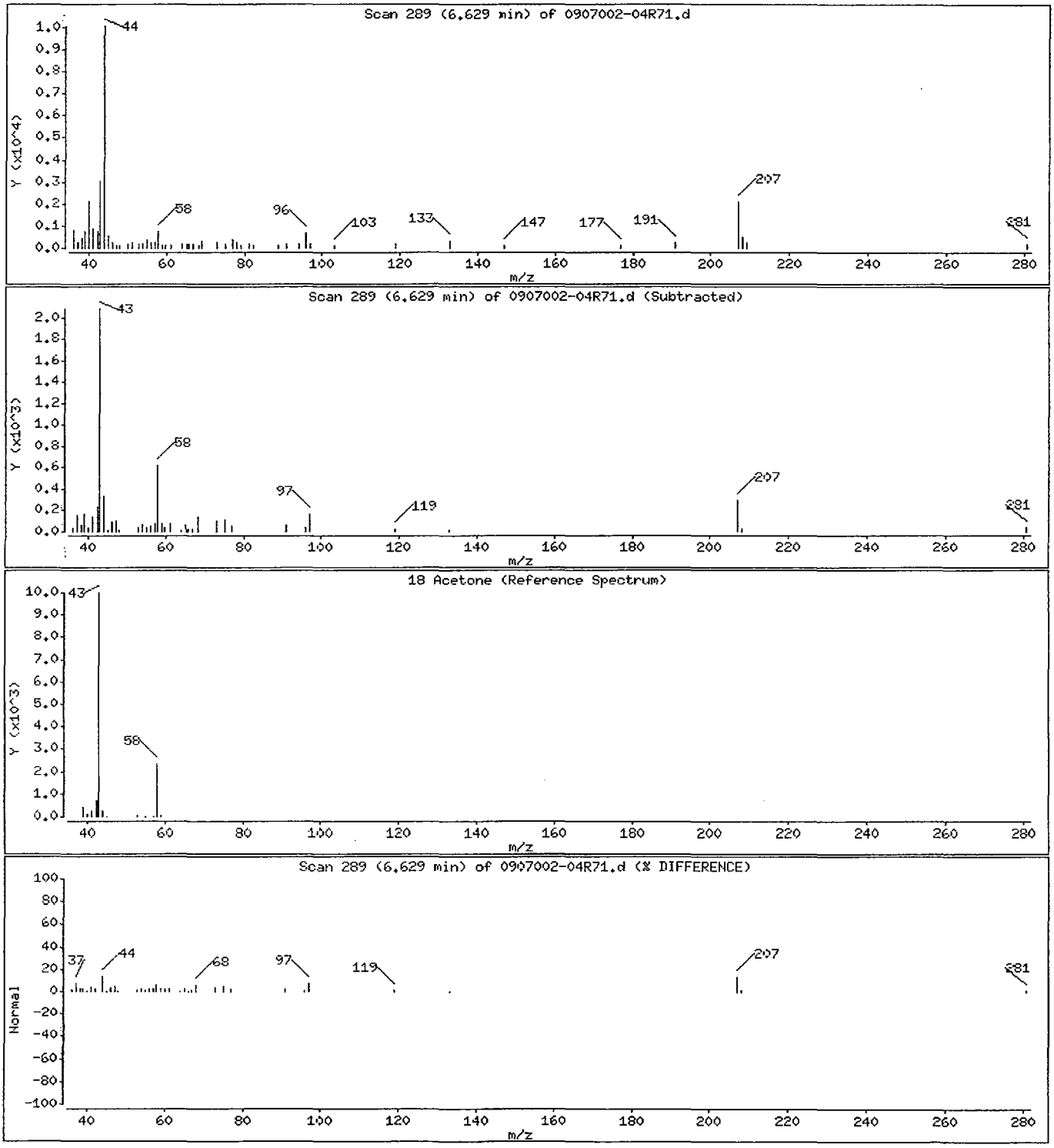
Client ID: YS06-TB01-063009 Instrument: 5972hp71.i

Sample Info: 0907002-04:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 1.6 ug/L



FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1071

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	18	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.91	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.20	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-EB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1071

Level: (low/med) LOW Date Received: 07/08/09

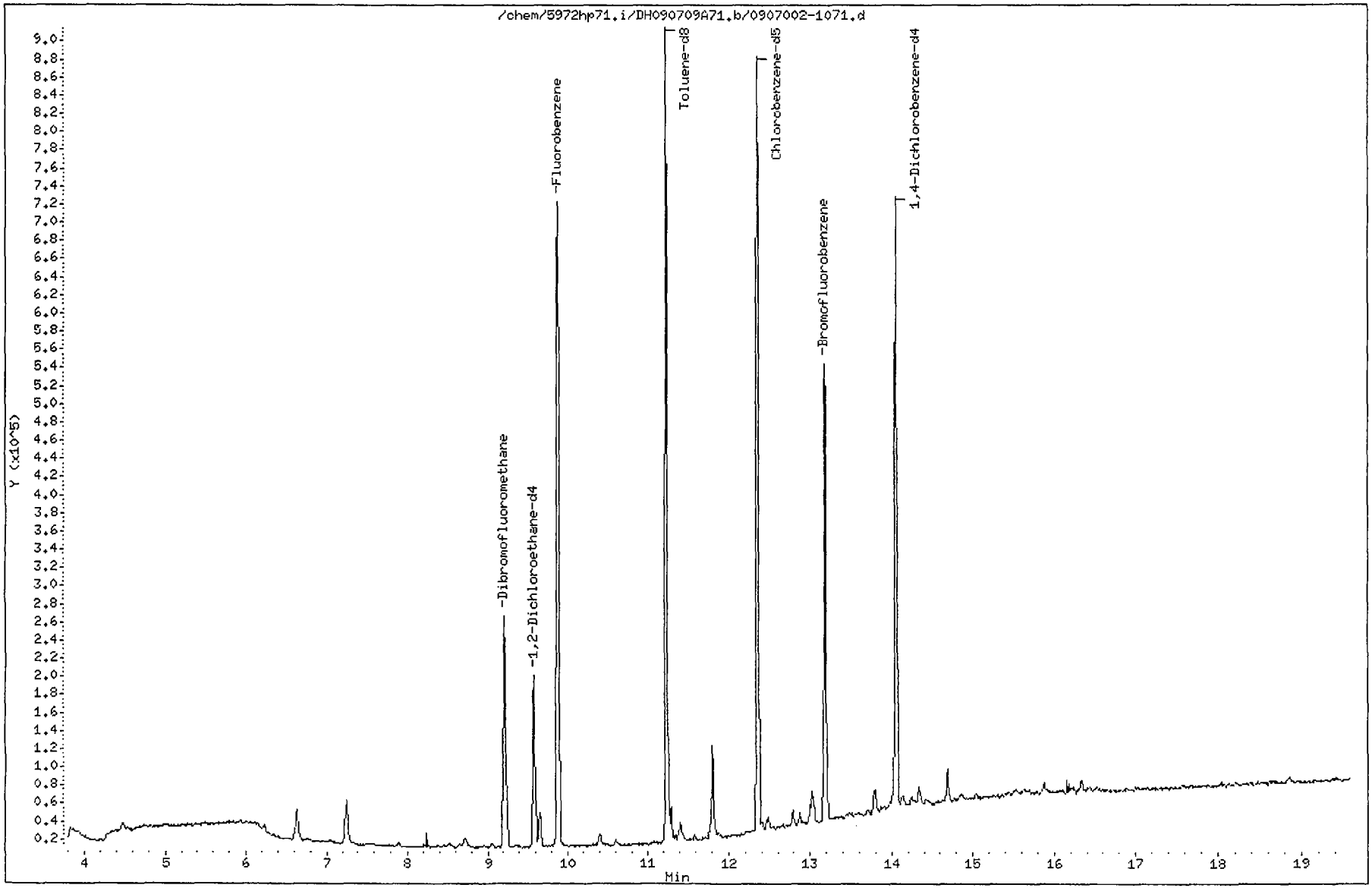
% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d
Date : 09-JUL-2009 21:12
Client ID: YS07-EB01-070709
Instrument: 5972hp71.i
Sample Info: 0907002-10;JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d
Report Date: 10-Jul-2009 18:38

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/0907002-1071.d
Lab Smp Id: 0907002-10 Client Smp ID: YS07-EB01-070709
Inj Date : 09-JUL-2009 21:12
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-10:JAO
Misc Info : YS07-EB01-070709
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 1 Fluorobenzene	96	9.883	9.883	(1.000)	597613	125.000	
* 2 Chlorobenzene-d5	117	12.356	12.356	(1.000)	380641	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.050	14.060	(1.000)	159449	125.000	
$ 4 Dibromofluoromethane	113	9.213	9.213	(0.932)	158520	120.589	4.8
$ 5 1,2-Dichloroethane-d4	65	9.577	9.577	(0.969)	137378	134.398	5.4
$ 6 Toluene-d8	98	11.233	11.233	(0.909)	521906	127.665	5.1
$ 7 Bromofluorobenzene	95	13.183	13.183	(0.938)	183666	135.033	5.4
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	Compound Not Detected.					
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

7/10/09

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d
Report Date: 10-Jul-2009 18:38

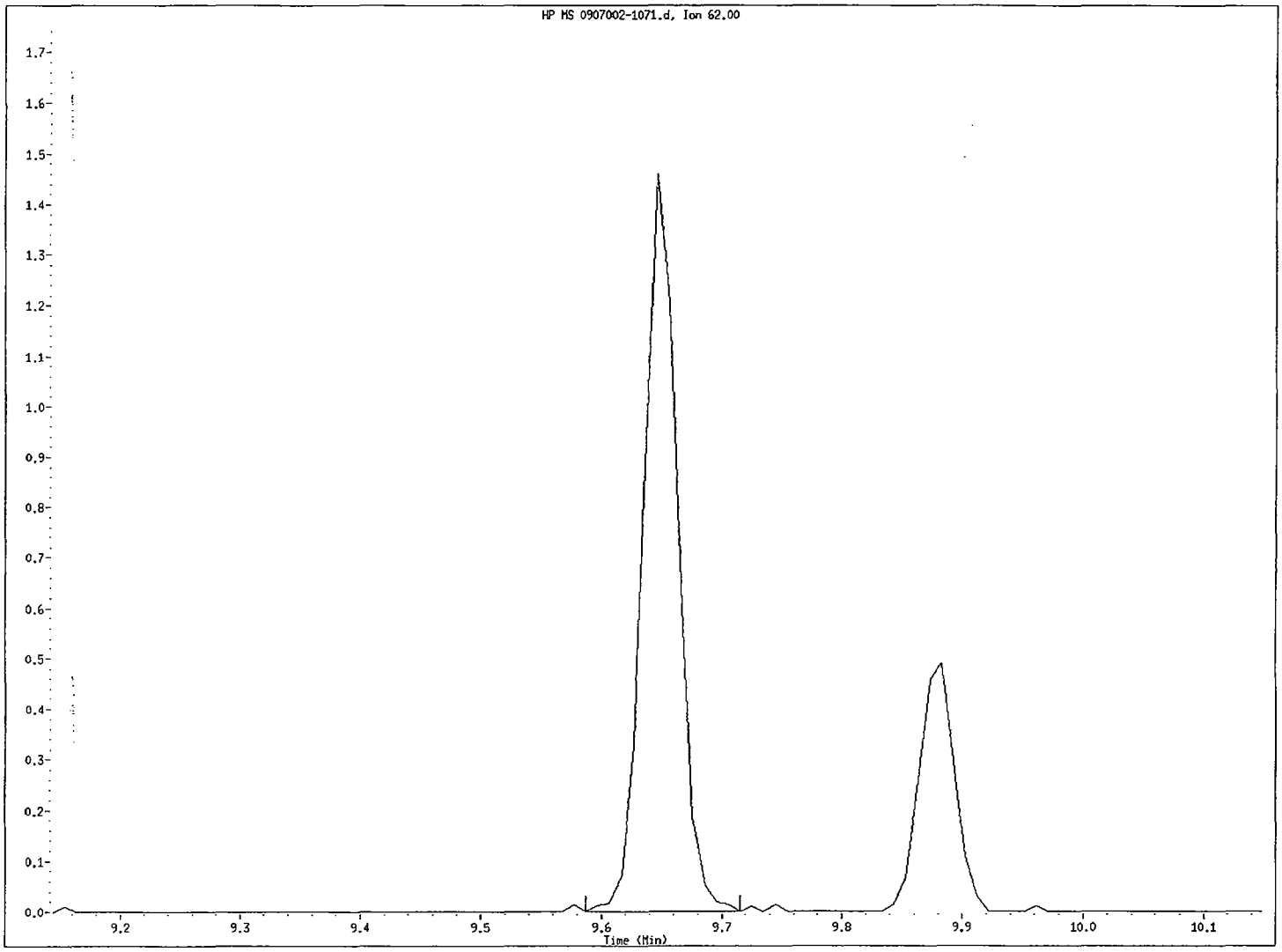
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	18 Acetone	43	6.632	6.632	(0.671)	59688	438.172	18
	20 Carbon disulfide	76	Compound Not Detected.					
	24 Methyl acetate	43	Compound Not Detected.					
	25 Methylene Chloride	84	7.252	7.252	(0.734)	23552	2.93009	0.12(a)
	27 Methyl-tert-butyl ether	73	Compound Not Detected.					
	28 trans-1,2-Dichloroethene	96	Compound Not Detected.					
	32 1,1-Dichloroethane	63	Compound Not Detected.					
	34 2-butanone	43	Compound Not Detected.					
	36 cis-1,2-Dichloroethene	96	Compound Not Detected.					
	40 Chloroform	83	Compound Not Detected.					
	42 1,1,1-Trichloroethane	97	Compound Not Detected.					
	43 Cyclohexane	84	Compound Not Detected.					
	46 Carbon Tetrachloride	117	Compound Not Detected.					
	47 Benzene	78	Compound Not Detected.					
	48 1,2-Dichloroethane	62	9.646	9.646	(0.976)	29200	22.7364	0.91(H)
	49 Trichloroethene	130	Compound Not Detected.					
	50 Methylcyclohexane	83	Compound Not Detected.					
	51 1,2-Dichloropropane	63	Compound Not Detected.					
	55 Bromodichloromethane	83	Compound Not Detected.					
	57 cis-1,3-Dichloropropene	75	Compound Not Detected.					
	58 4-Methyl-2-pentanone	43	Compound Not Detected.					
	59 Toluene	92	11.292	11.292	(0.914)	14584	4.88419	0.20(a)
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.					
	62 1,1,2-Trichloroethane	97	Compound Not Detected.					
	63 2-hexanone	43	Compound Not Detected.					
	65 Tetrachloroethene	164	Compound Not Detected.					
	66 Dibromochloromethane	129	Compound Not Detected.					
	67 1,2-Dibromoethane	107	Compound Not Detected.					
	69 Chlorobenzene	112	Compound Not Detected.					
	70 Ethylbenzene	106	Compound Not Detected.					
	72 m,p-Xylene	106	Compound Not Detected.					
	73 o-Xylene	106	Compound Not Detected.					
	74 Styrene	104	Compound Not Detected.					
	75 Bromoform	173	Compound Not Detected.					
	76 Isopropyl Benzene	105	Compound Not Detected.					
	77 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	90 1,3-Dichlorobenzene	146	Compound Not Detected.					
	91 1,4-Dichlorobenzene	146	Compound Not Detected.					
	93 1,2-Dichlorobenzene	146	Compound Not Detected.					
	94 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
	95 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M	99 1,2-Dichloroethene (total)	96	Compound Not Detected.					
M	100 Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d
Report Date: 10-Jul-2009 18:38

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
H - Operator selected an alternate compound hit.

1,2-Dichloroethane CAS Number 107-06-2 Area = 29200 User selected hit



File name: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d
Client ID: YS07-EB01-070709
Instrument ID: 5972hp71.i
Injection Date and Time: 09-JUL-2009 21:12
Retention Time: 9.65
Operator ID: JAO

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d

Date : 09-JUL-2009 21:12

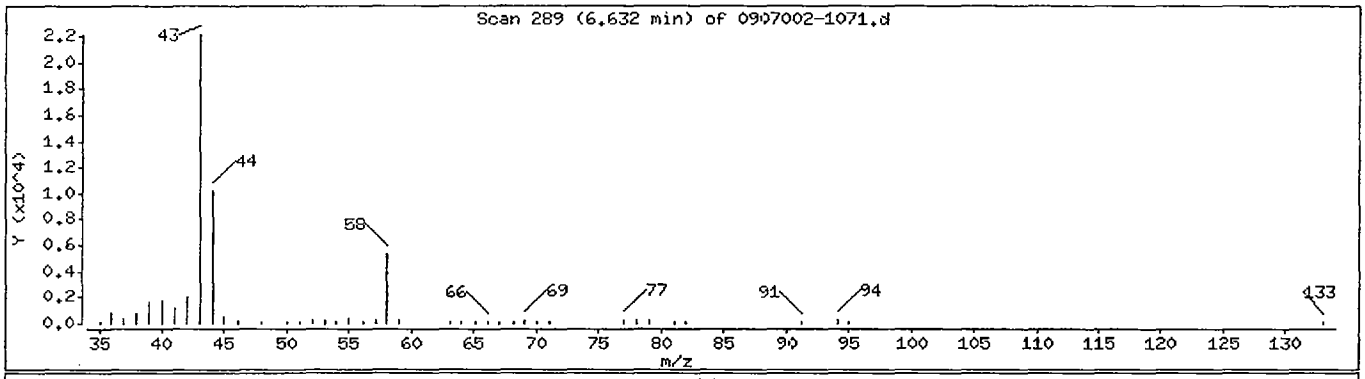
Client ID: YS07-EB01-070709 Instrument: 5972hp71.i

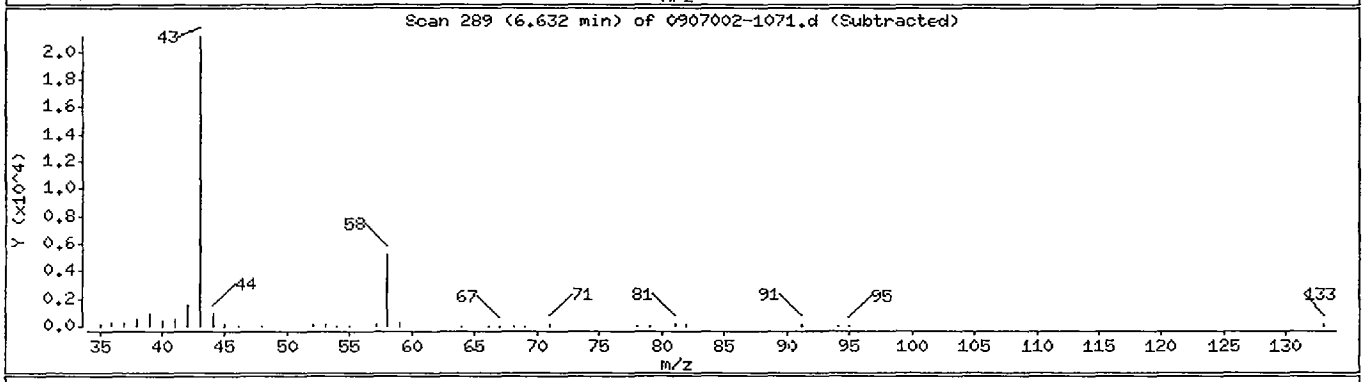
Sample Info: 0907002-10;JAO

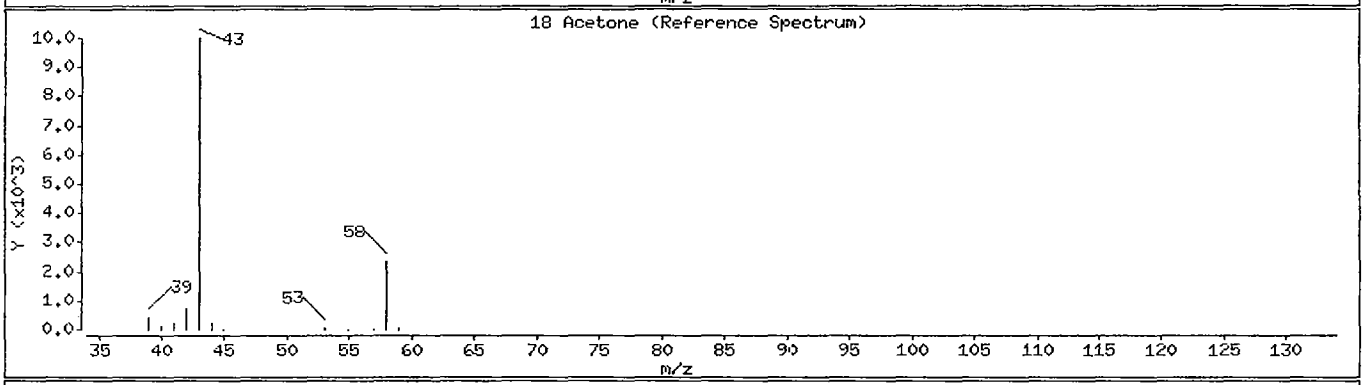
Purge Volume: 25.0 Operator: JAO

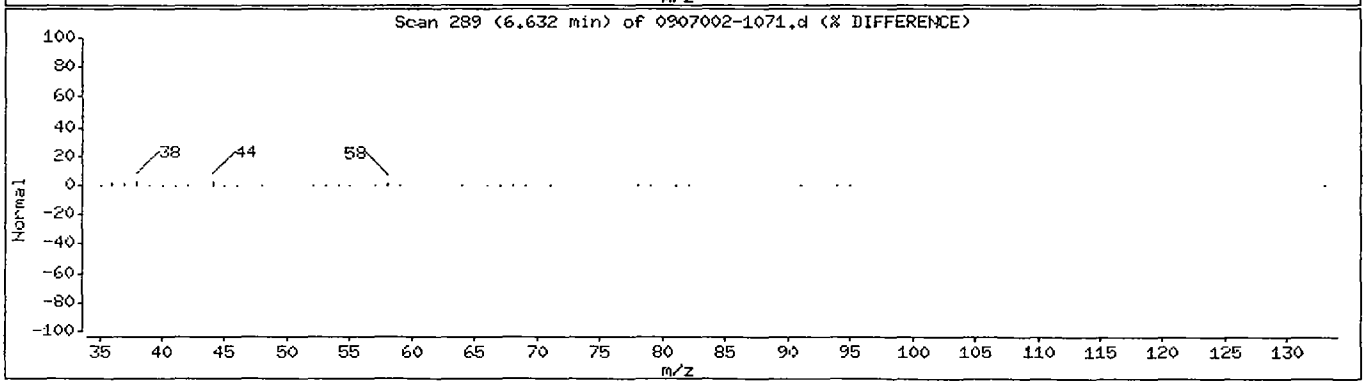
Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 18 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d

Date : 09-JUL-2009 21:12

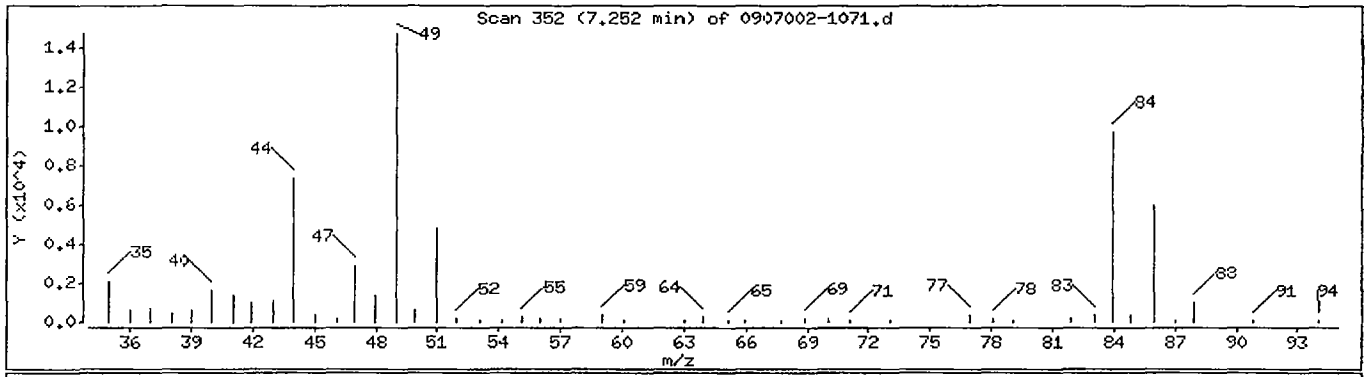
Client ID: YS07-EB01-070709 Instrument: 5972hp71.i

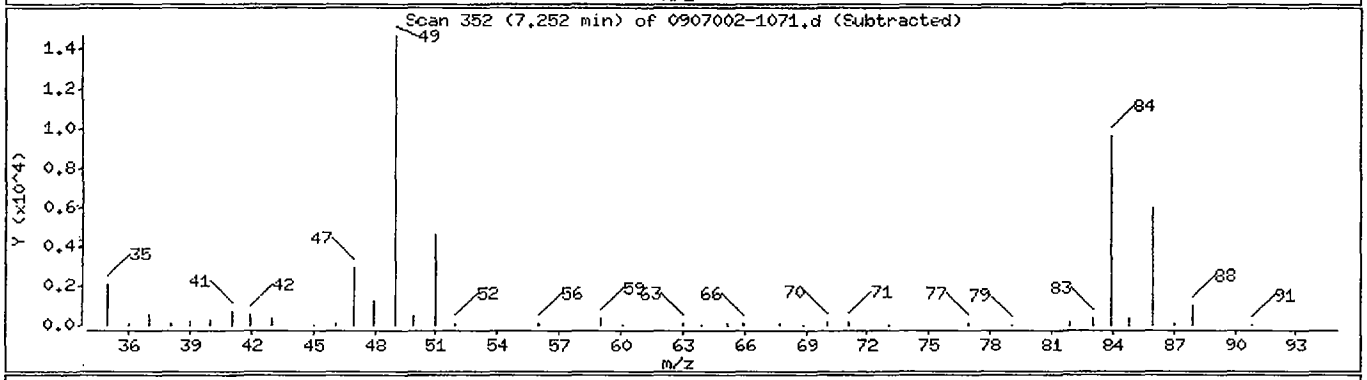
Sample Info: 0907002-10:JAO

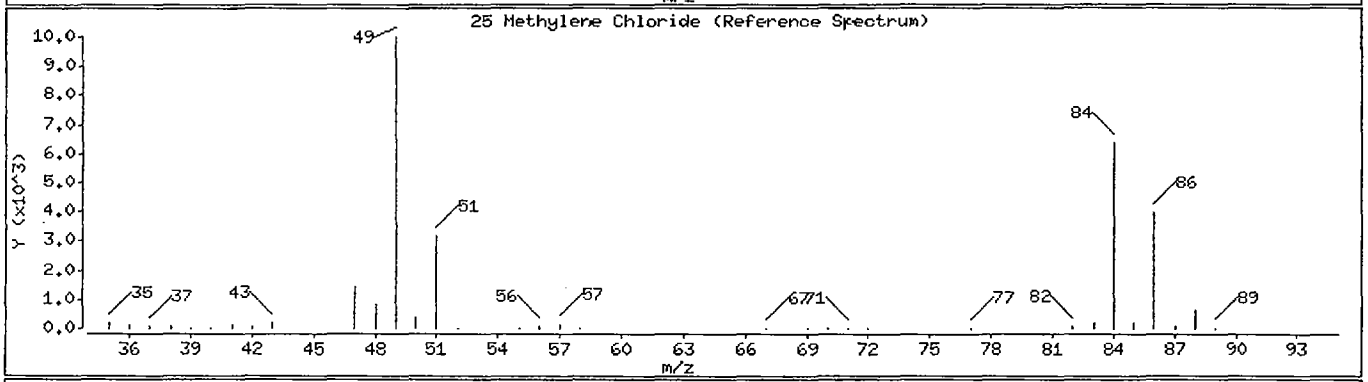
Purge Volume: 25.0 Operator: JAO

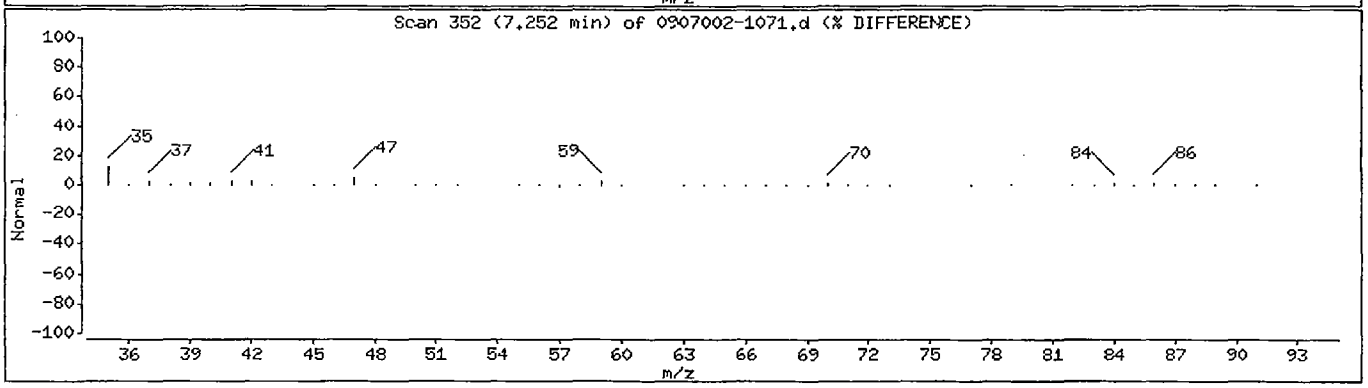
Column phase: SPB-624 Column diameter: 0.32

25 Methylene Chloride Concentration: 0.12 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1071.d

Date : 09-JUL-2009 21:12

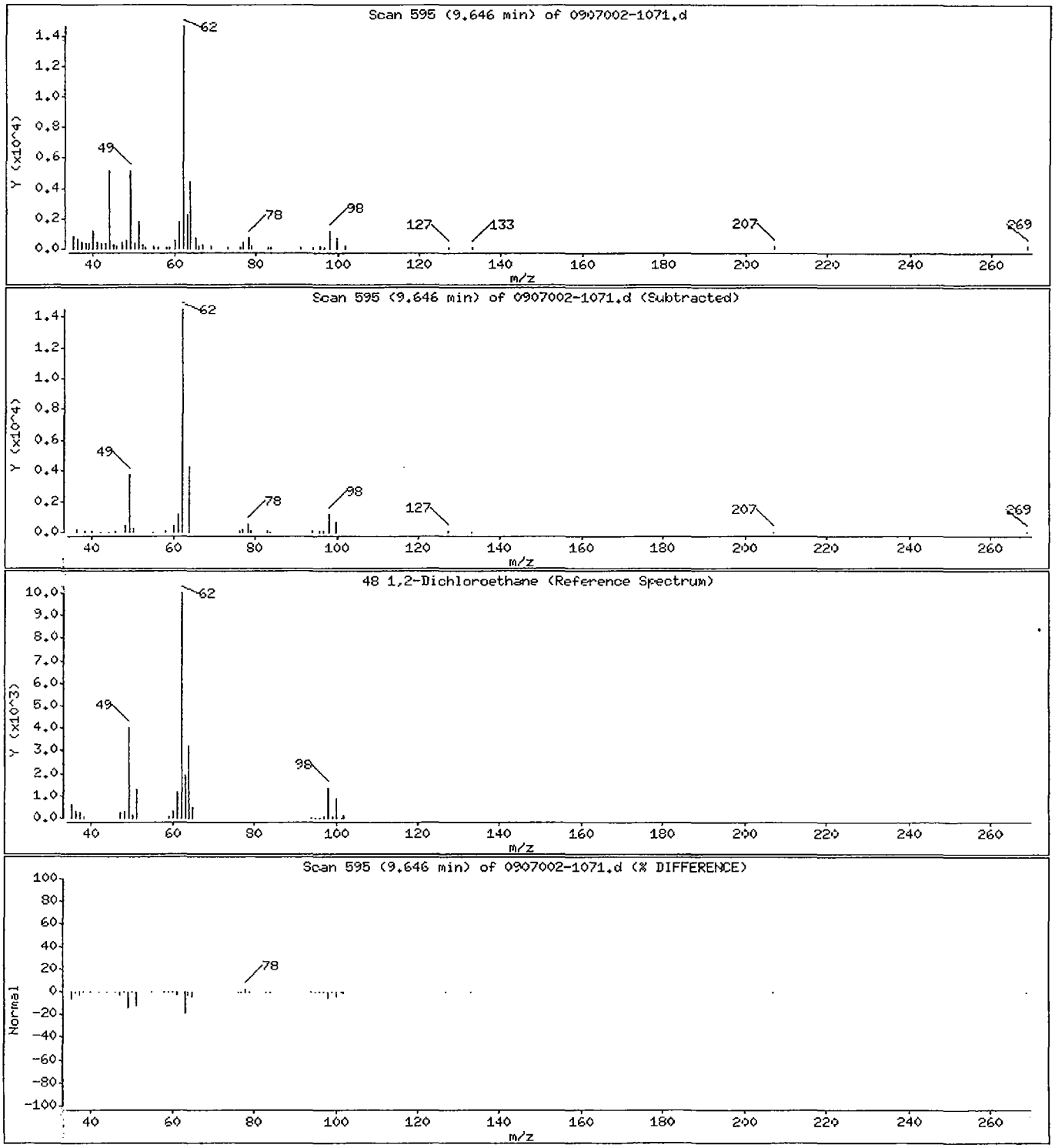
Client ID: YS07-EB01-070709 Instrument: 5972hp71.i

Sample Info: 0907002-10;JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

48 1,2-Dichloroethane Concentration: 0.91 ug/L



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Date : 09-JUL-2009 21:12

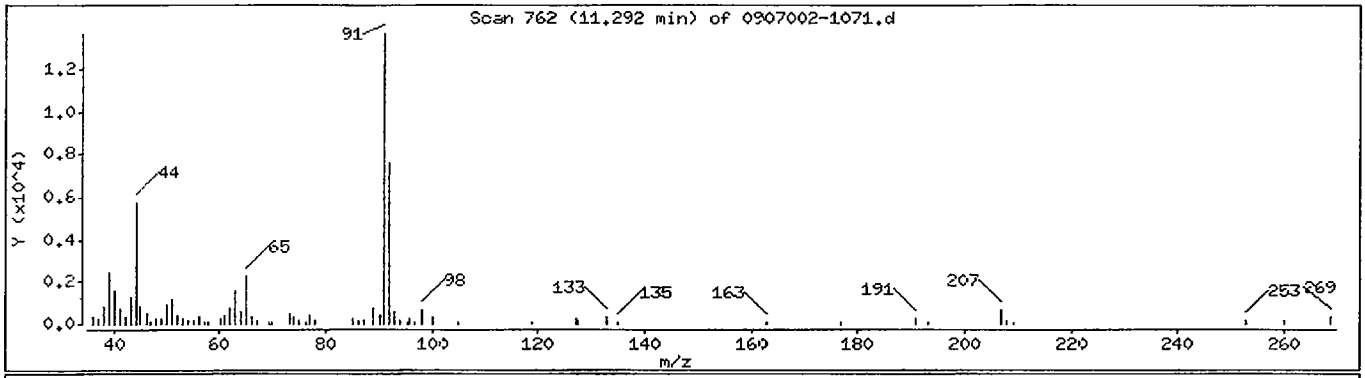
Client ID: YS07-EB01-070709 Instrument: 5972hp71.i

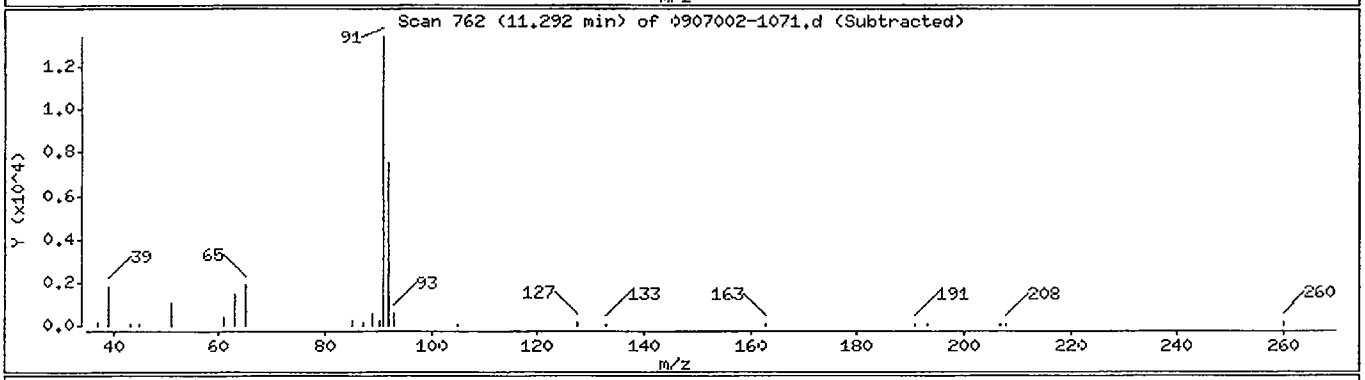
Sample Info: 0907002-10:JAO

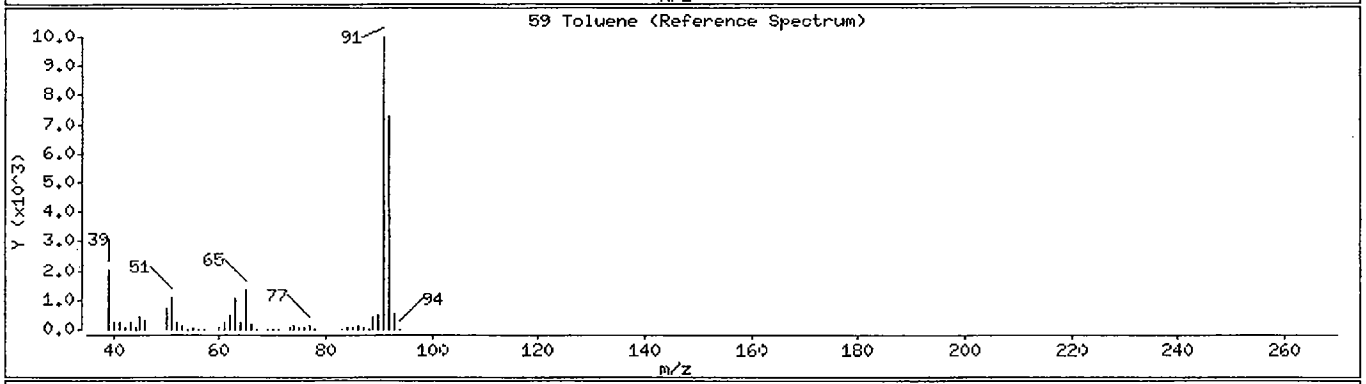
Purge Volume: 25.0 Operator: JAO

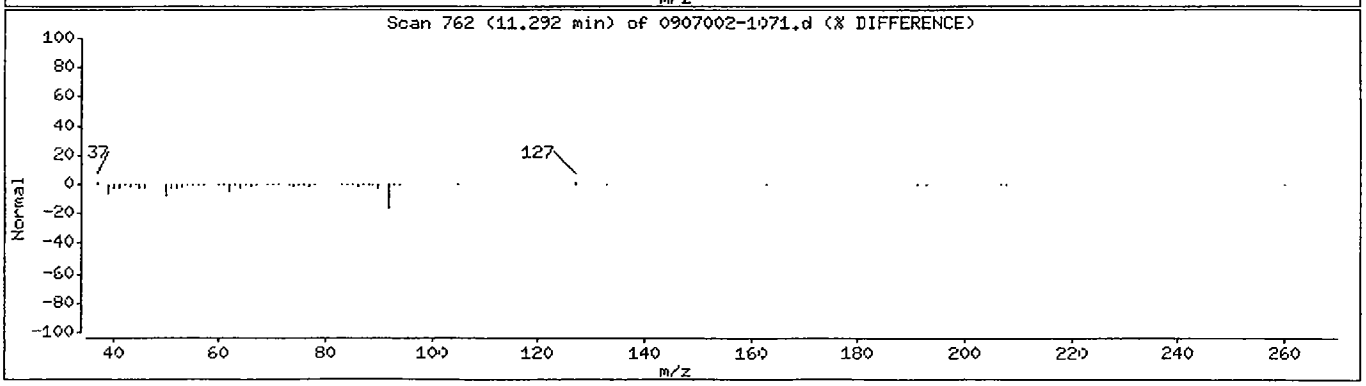
Column phase: SPB-624 Column diameter: 0.32

59 Toluene Concentration: 0.20 ug/L









FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-FB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1271

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	22	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.31	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	4.3	
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	1.1	
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.26	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-FB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1271

Level: (low/med) LOW Date Received: 07/09/09

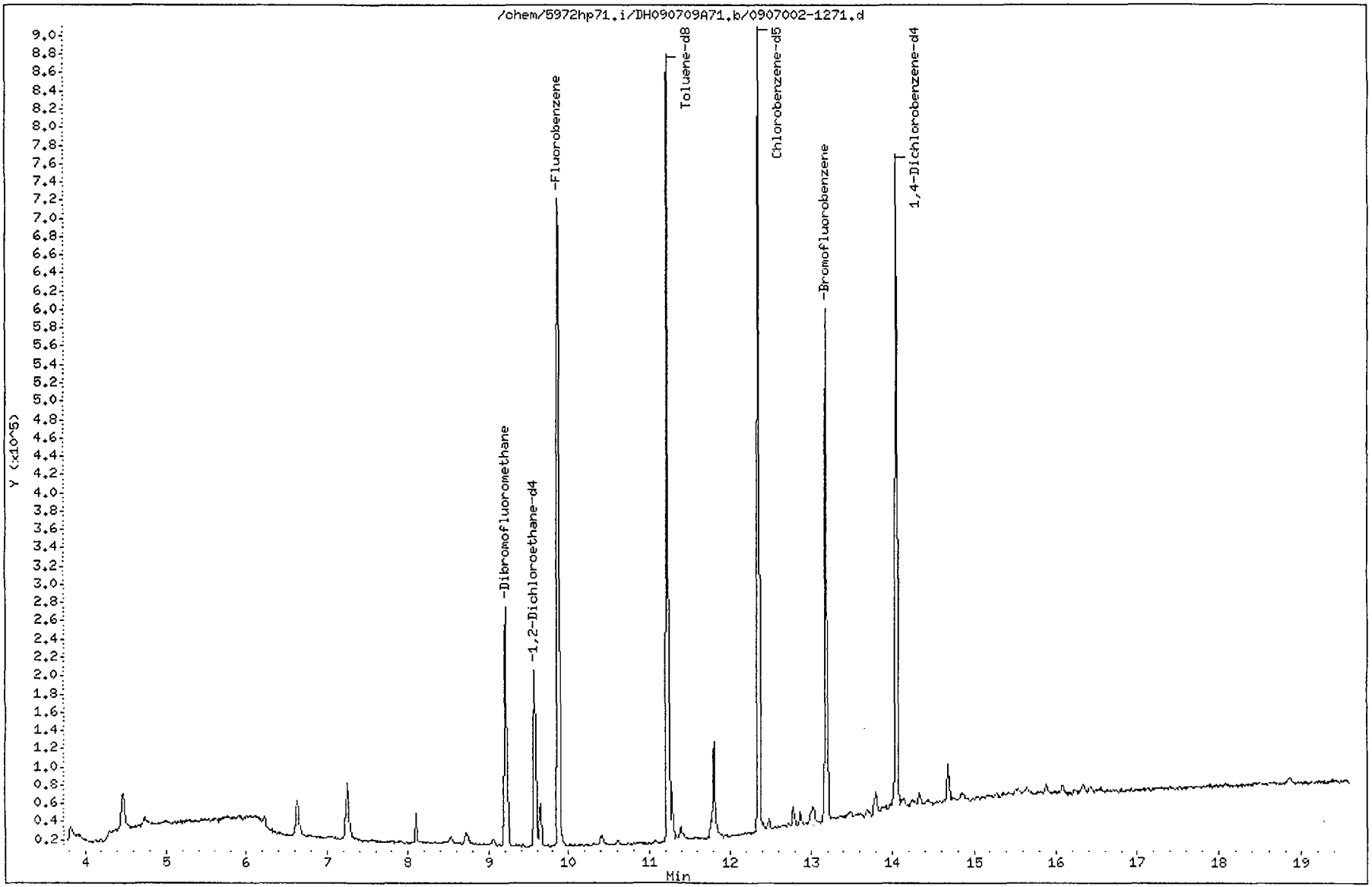
% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d
Date : 09-JUL-2009 22:08
Client ID: YS07-FB01-070809
Instrument: 5972hp71.i
Sample Info: 0907002-12:JA0
Purge Volume: 25.0
Operator: JA0
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d
Report Date: 10-Jul-2009 18:38

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/0907002-1271.d
Lab Smp Id: 0907002-12 Client Smp ID: YS07-FB01-070809
Inj Date : 09-JUL-2009 22:08
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-12:JAO
Misc Info : YS07-FB01-070809
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 12
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1 Fluorobenzene	96	9.878	9.883	(1.000)	603159	125.000	
* 2 Chlorobenzene-d5	117	12.360	12.356	(1.000)	386994	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.055	14.060	(1.000)	163519	125.000	
$ 4 Dibromofluoromethane	113	9.217	9.213	(0.933)	164735	124.280	5.0
$ 5 1,2-Dichloroethane-d4	65	9.572	9.577	(0.969)	143671	139.334	5.6
$ 6 Toluene-d8	98	11.237	11.233	(0.909)	535205	129.024	5.2
$ 7 Bromofluorobenzene	95	13.188	13.183	(0.938)	190992	137.207	5.5
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	Compound Not Detected.					
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d
Report Date: 10-Jul-2009 18:38

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.626	6.632	(0.671)	74681	543.195	22
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	7.257	7.252	(0.735)	29941	7.87373	0.31(a)
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	8.725	8.701	(0.883)	23905	107.685	4.3
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	Compound Not Detected.					
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	9.651	9.646	(0.977)	36545	28.1939	1.1
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	11.286	11.292	(0.913)	19782	6.51625	0.26(a)
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d
Report Date: 10-Jul-2009 18:38

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d

Date : 09-JUL-2009 22:08

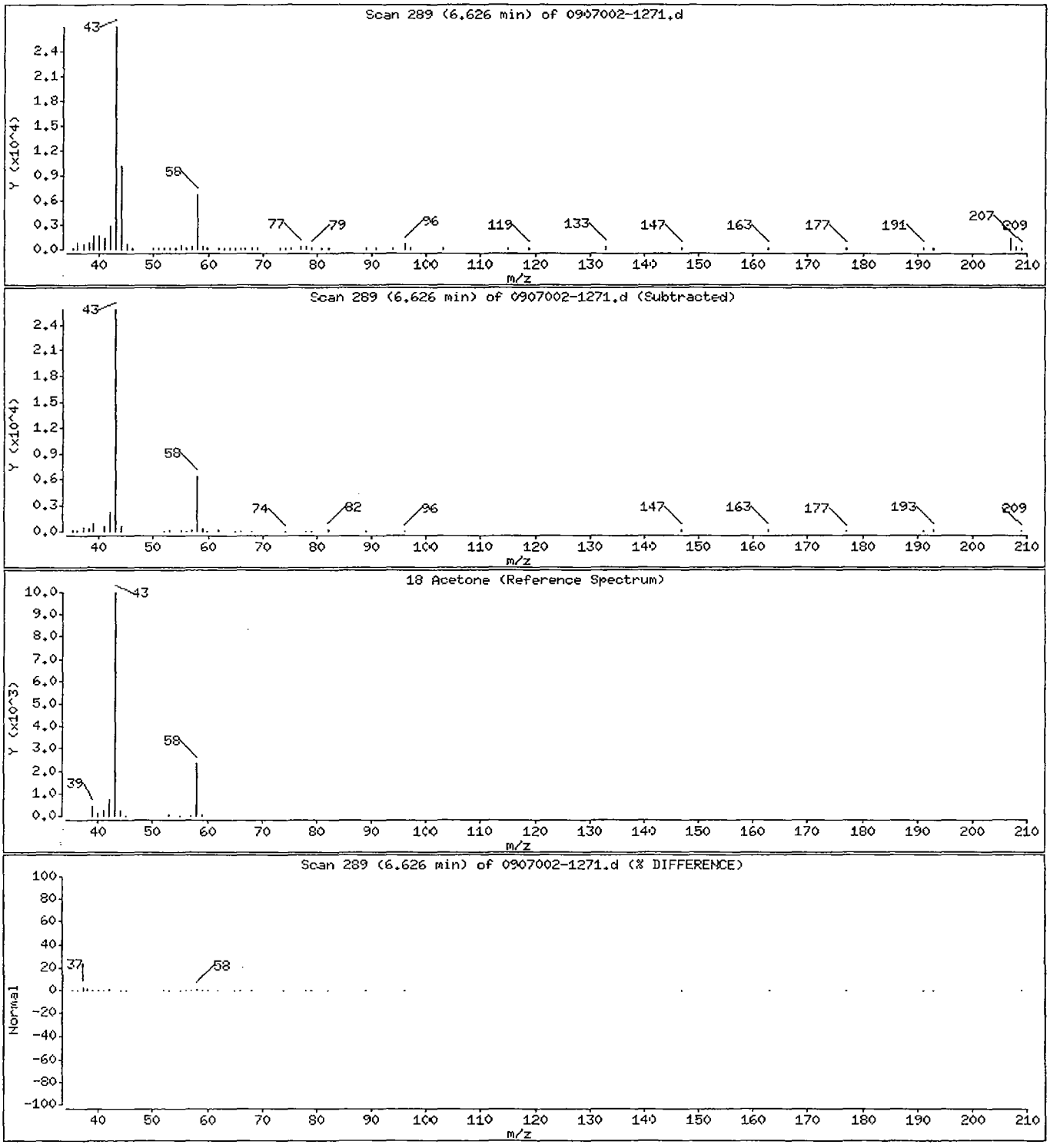
Client ID: YS07-FB01-070909 Instrument: 5972hp71.i

Sample Info: 0907002-12:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 22 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d

Date : 09-JUL-2009 22:08

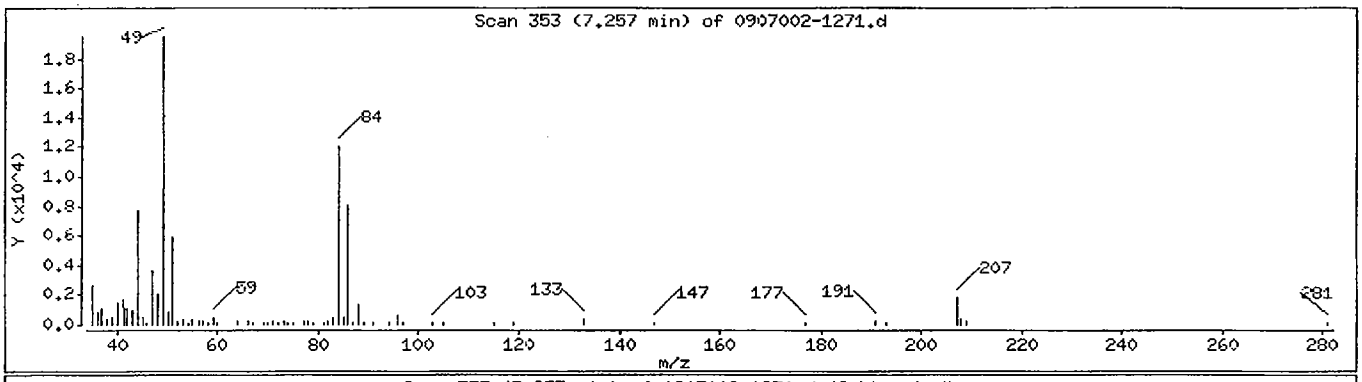
Client ID: YS07-FB01-070809 Instrument: 5972hp71.i

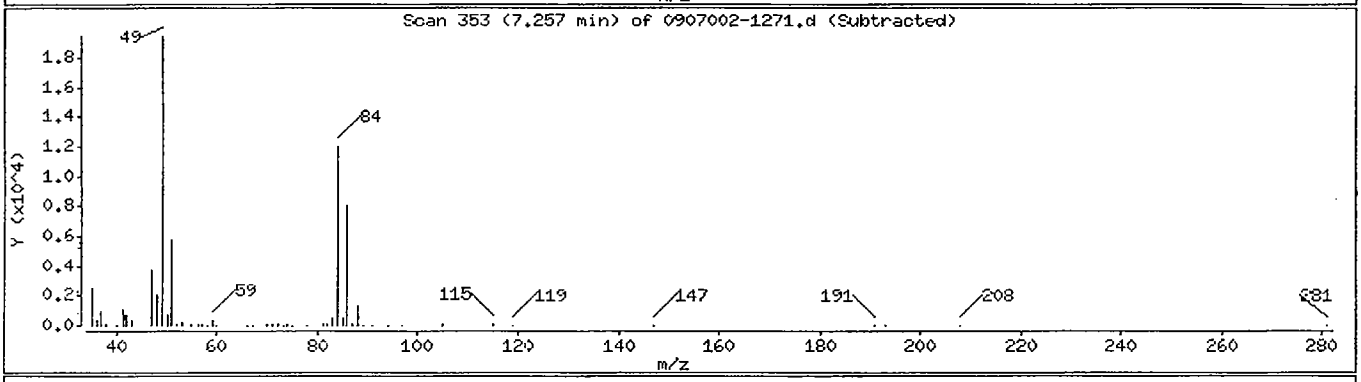
Sample Info: 0907002-12:JAD

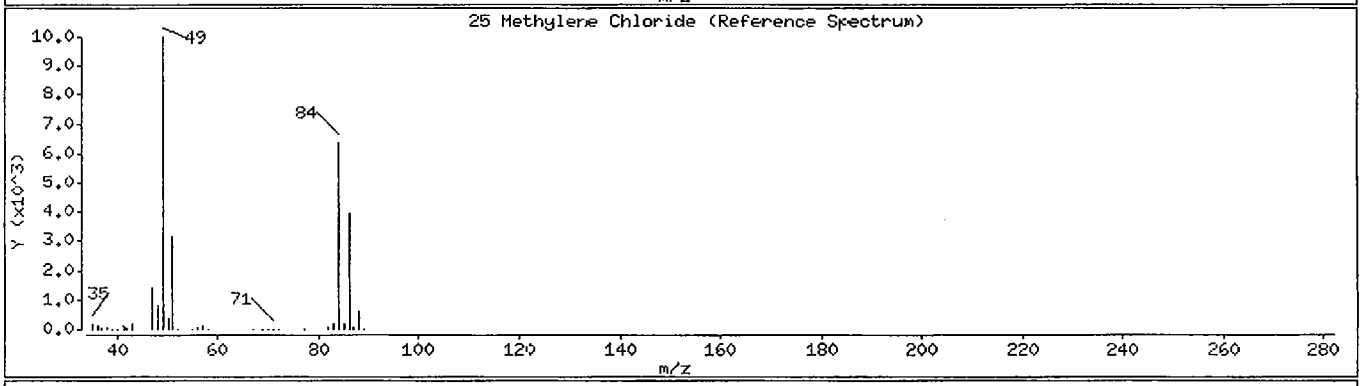
Purge Volume: 25.0 Operator: JAD

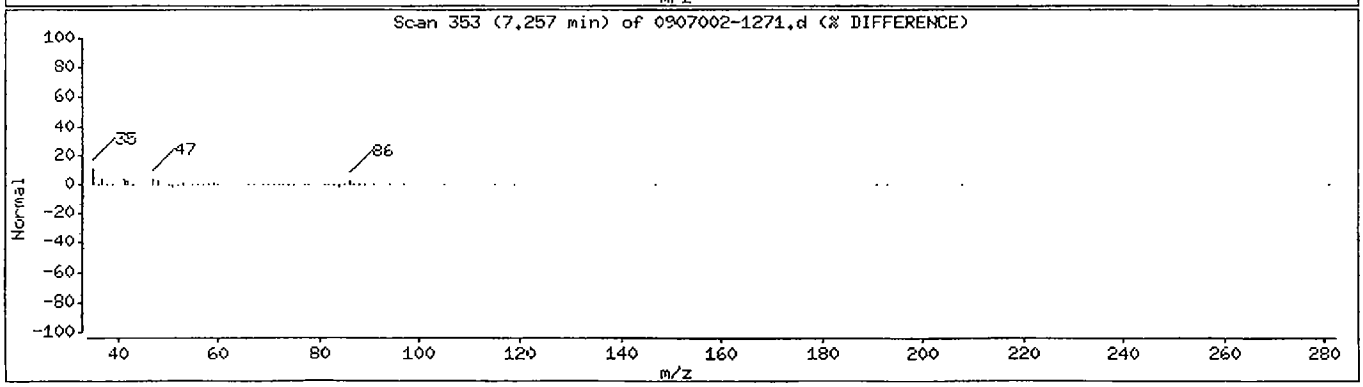
Column phase: SPB-624 Column diameter: 0.32

25 Methylene Chloride Concentration: 0.31 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d

Date : 09-JUL-2009 22:08

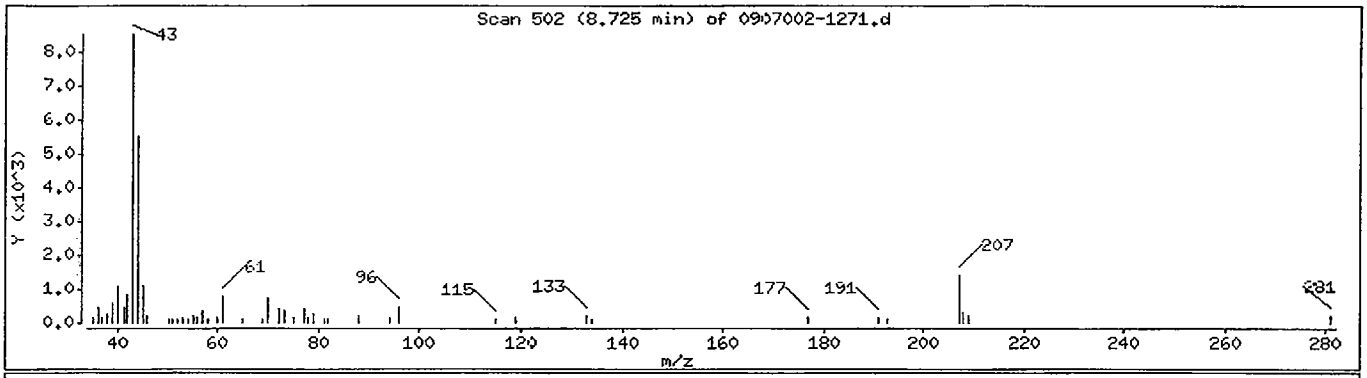
Client ID: YS07-FB01-070809 Instrument: 5972hp71.i

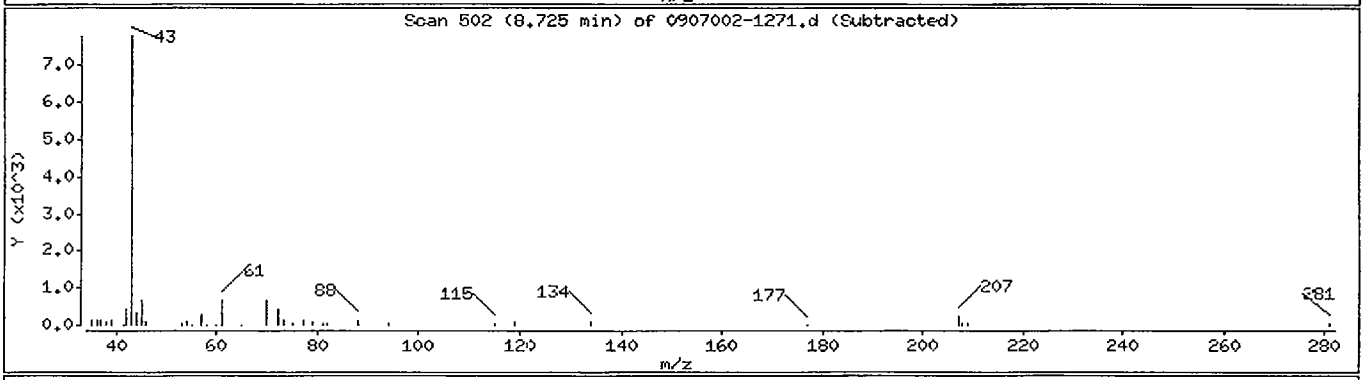
Sample Info: 0907002-12:JAO

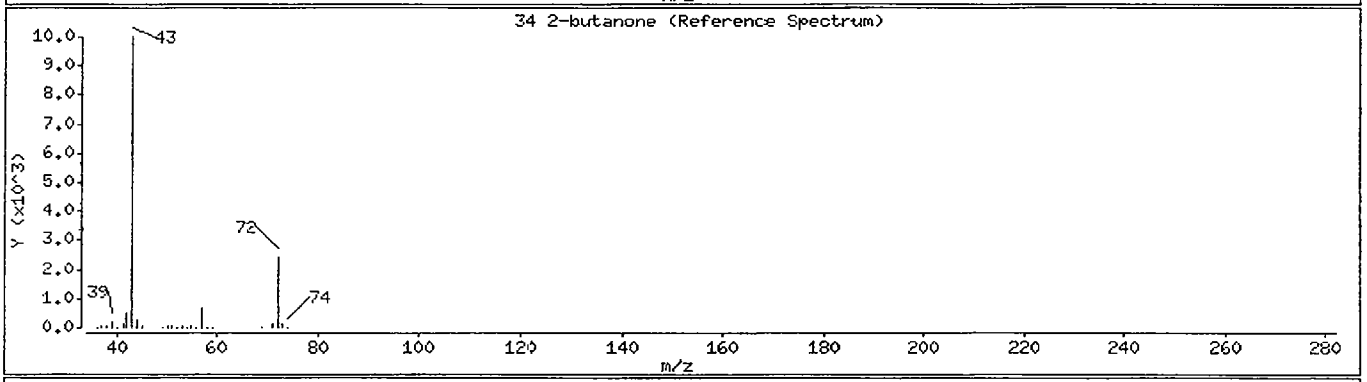
Purge Volume: 25.0 Operator: JAO

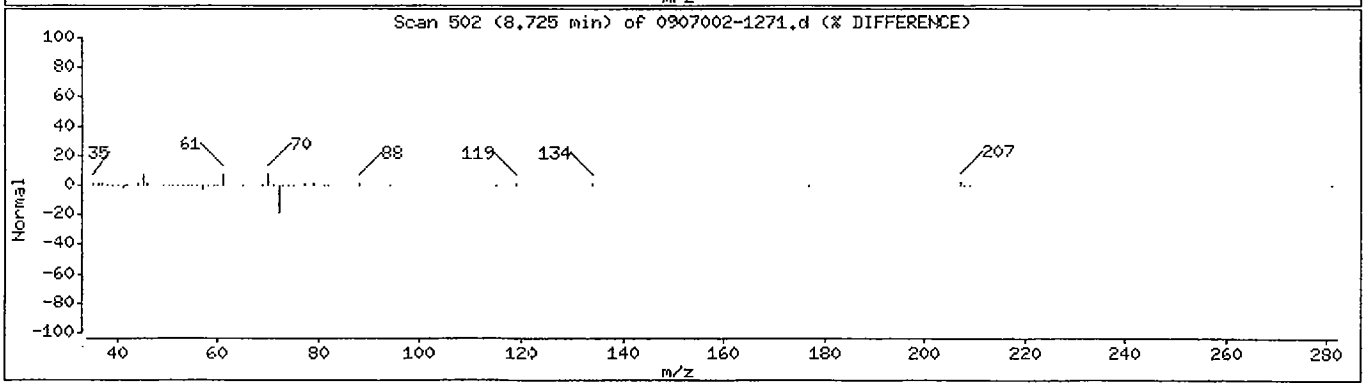
Column phase: SPB-624 Column diameter: 0.32

34 2-butanone Concentration: 4.3 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d

Date : 09-JUL-2009 22:08

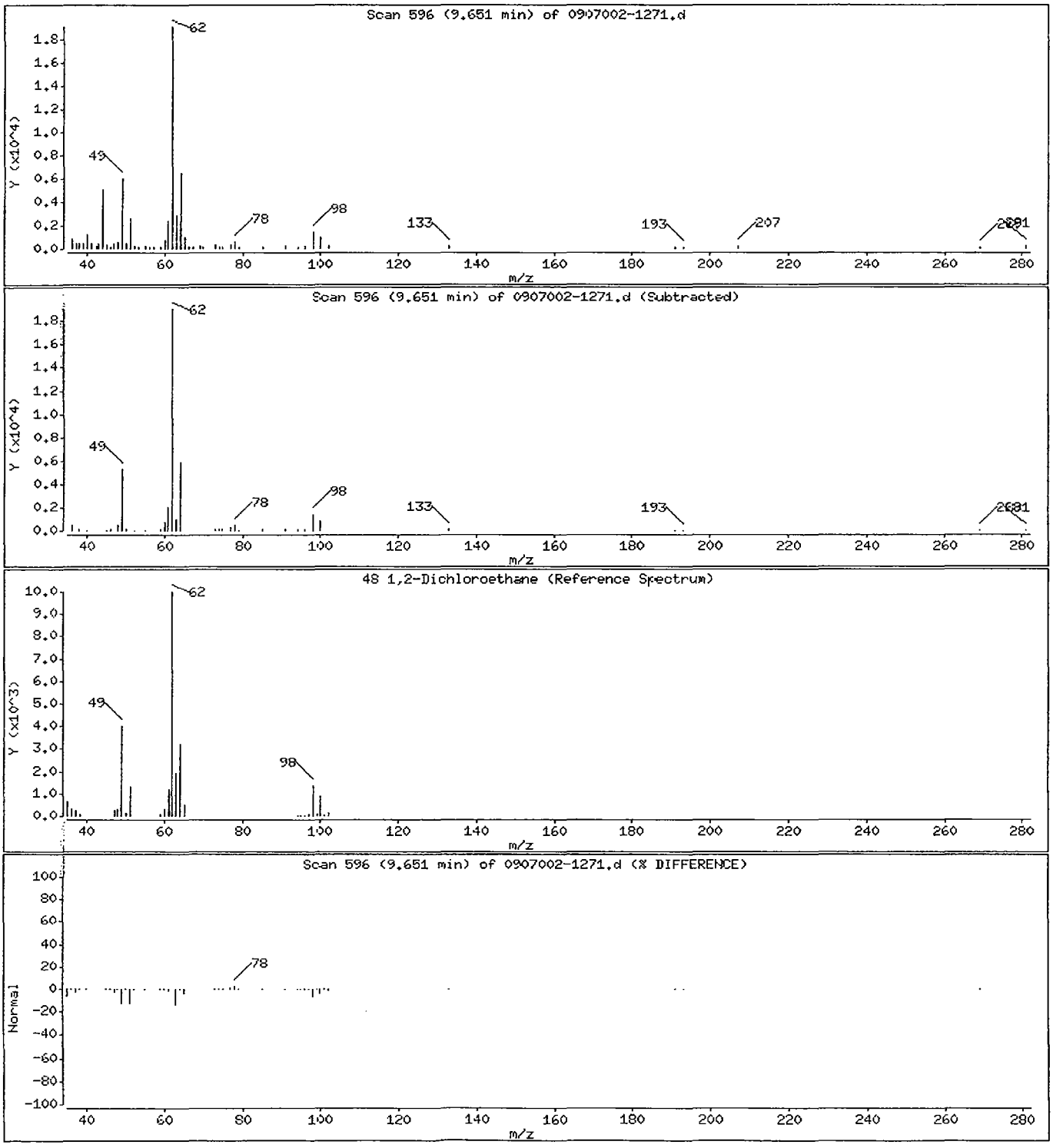
Client ID: YS07-FB01-070809 Instrument: 5972hp71.i

Sample Info: 0907002-12:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

48 1,2-Dichloroethane Concentration: 1.1 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1271.d

Date : 09-JUL-2009 22:08

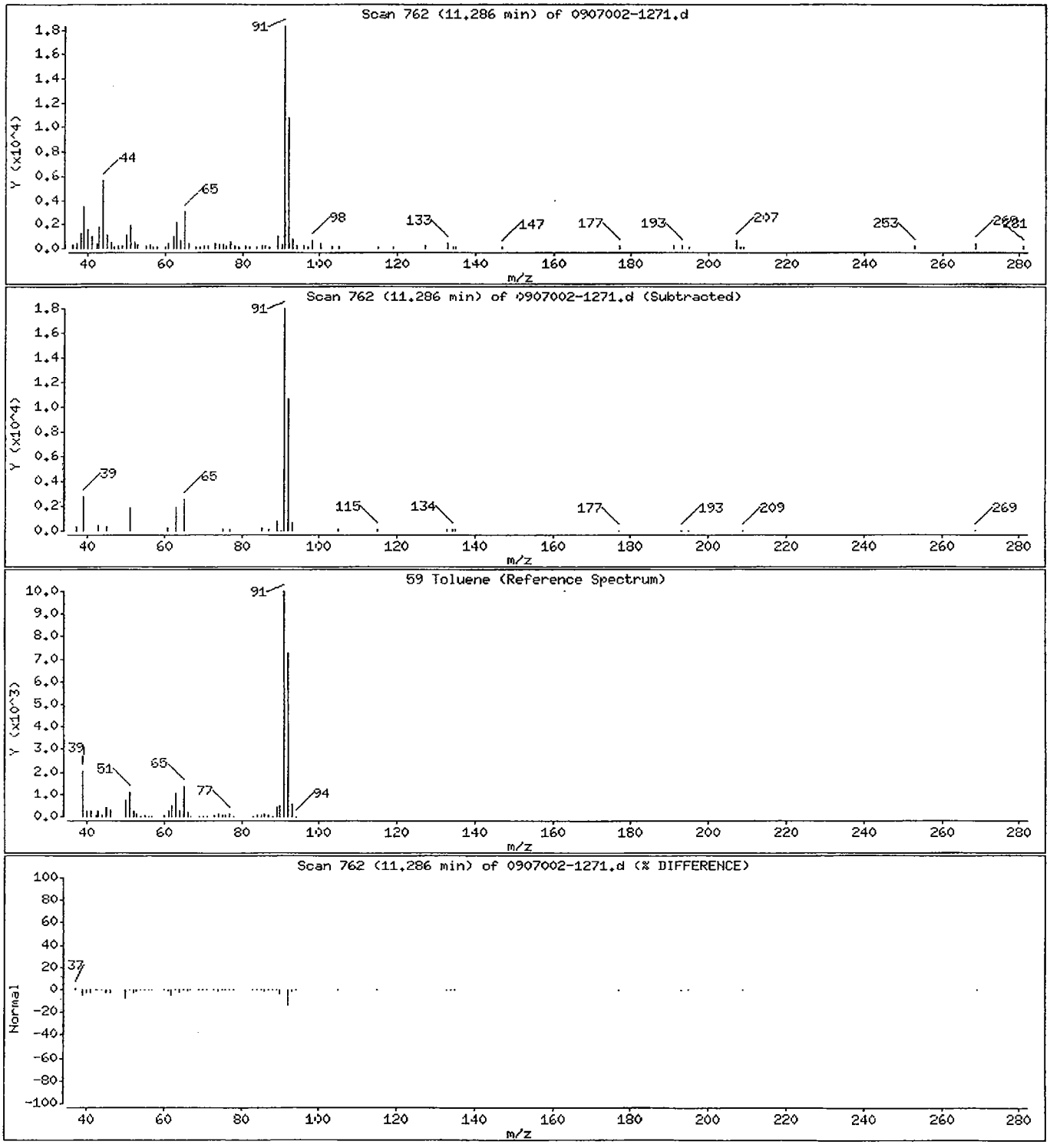
Client ID: YS07-FB01-070809 Instrument: 5972hp71.i

Sample Info: 0907002-12:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

59 Toluene Concentration: 0.26 ug/L



FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0871

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.7	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.6	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.11	J
75-34-3	1,1-Dichloroethane	7.0	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	
71-55-6	1,1,1-Trichloroethane	3.4	
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.32	J
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.21	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.11	J

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0871

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

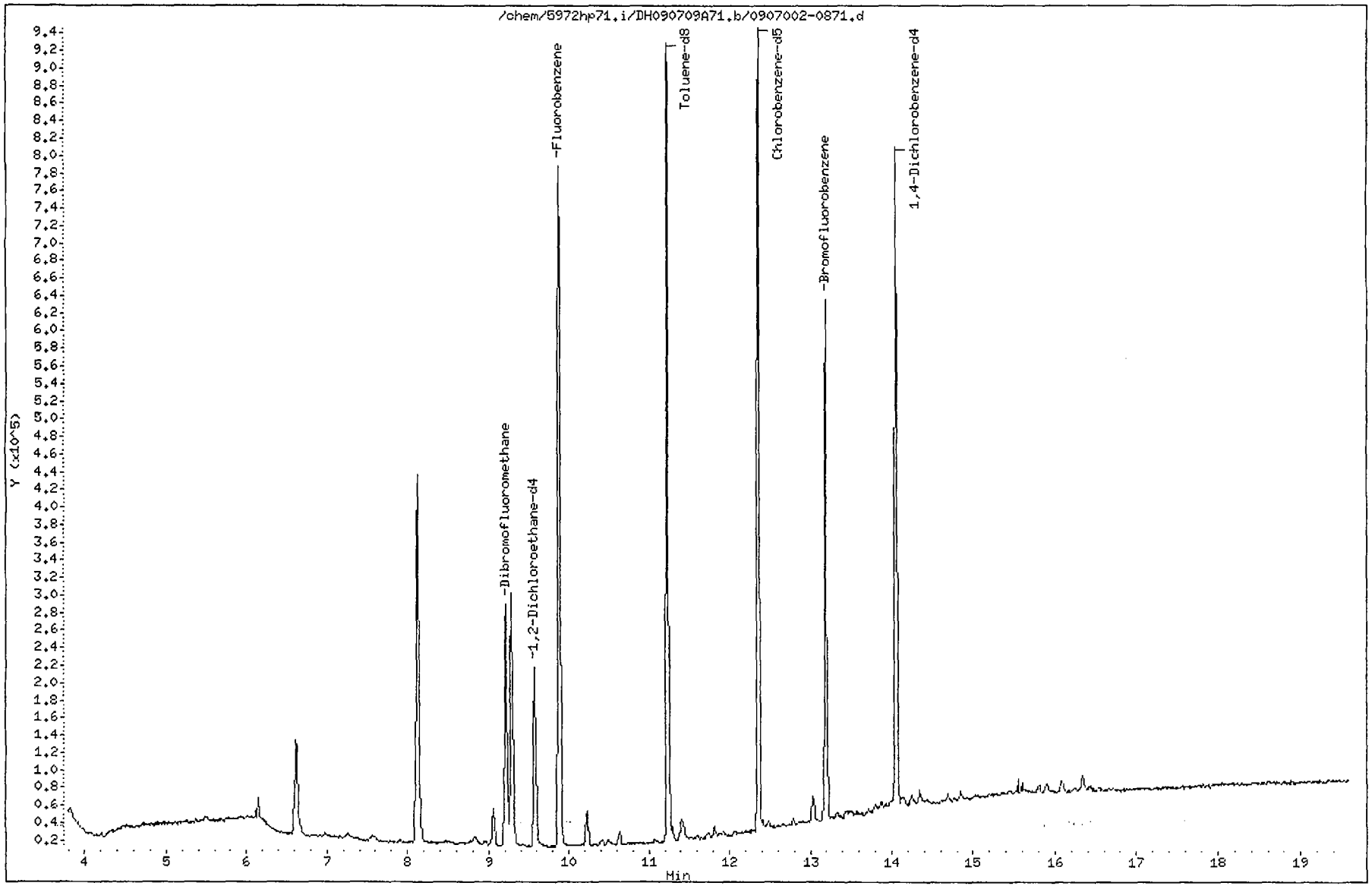
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d
Date : 09-JUL-2009 20:03
Client ID: YS07-GW05-0709
Sample Info: 0907002-08;JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d
Report Date: 10-Jul-2009 18:43

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/0907002-0871.d
Lab Smp Id: 0907002-08 Client Smp ID: YS07-GW05-0709
Inj Date : 09-JUL-2009 20:03
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-08:JAO
Misc Info : YS07-GW05-0709
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1 Fluorobenzene	96	9.879	9.883	(1.000)	655988	125.000	
* 2 Chlorobenzene-d5	117	12.362	12.356	(1.000)	428572	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.057	14.060	(1.000)	180463	125.000	
$ 4 Dibromofluoromethane	113	9.219	9.213	(0.933)	177636	123.188	4.9
$ 5 1,2-Dichloroethane-d4	65	9.574	9.577	(0.969)	153635	136.965	5.5
$ 6 Toluene-d8	98	11.229	11.233	(0.908)	572800	123.697	4.9
$ 7 Bromofluorobenzene	95	13.190	13.183	(0.938)	205574	133.317	5.3
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	6.618	6.622	(0.670)	56747	42.9758	1.7
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

7/10/09

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d
Report Date: 10-Jul-2009 18:43

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.628	6.632	(0.671)	9605	64.2360	2.6
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	7.554	7.548	(0.765)	6300	2.77596	0.11(a)
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	8.126	8.119	(0.822)	490356	174.239	7.0
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	9.062	9.055	(0.917)	35351	12.5094	0.50
42	1,1,1-Trichloroethane	97	9.288	9.292	(0.940)	204794	84.6556	3.4
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	10.224	10.218	(1.035)	11689	8.01666	0.32(a)
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	10.638	10.632	(1.077)	9646	5.15552	0.21(a)
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	Compound Not Detected.					
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	11.919	11.912	(0.964)	2855	2.71850	0.11(a)
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d
Report Date: 10-Jul-2009 18:43

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

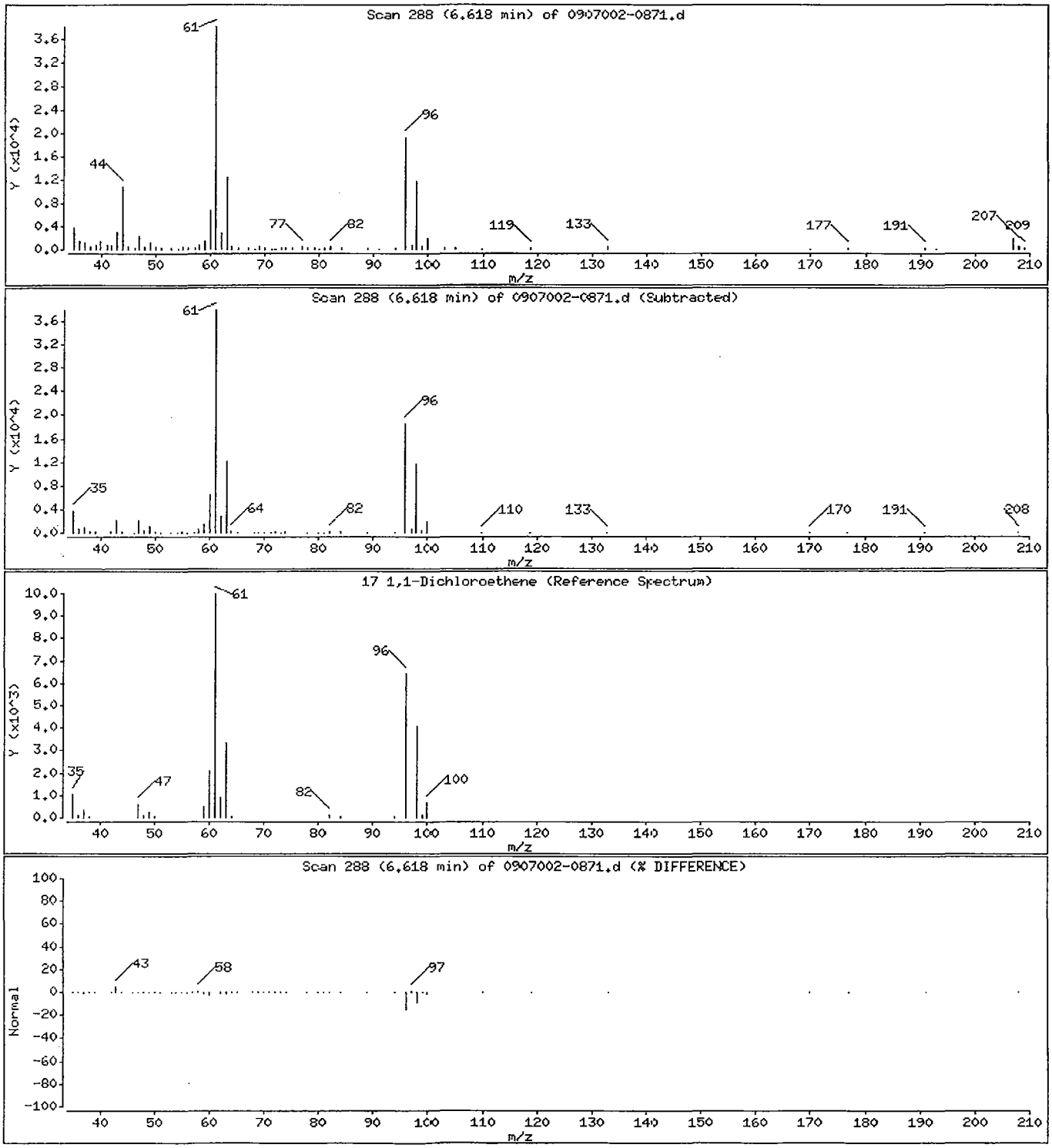
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

Sample Info: 0907002-08:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

17 1,1-Dichloroethene Concentration: 1.7 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

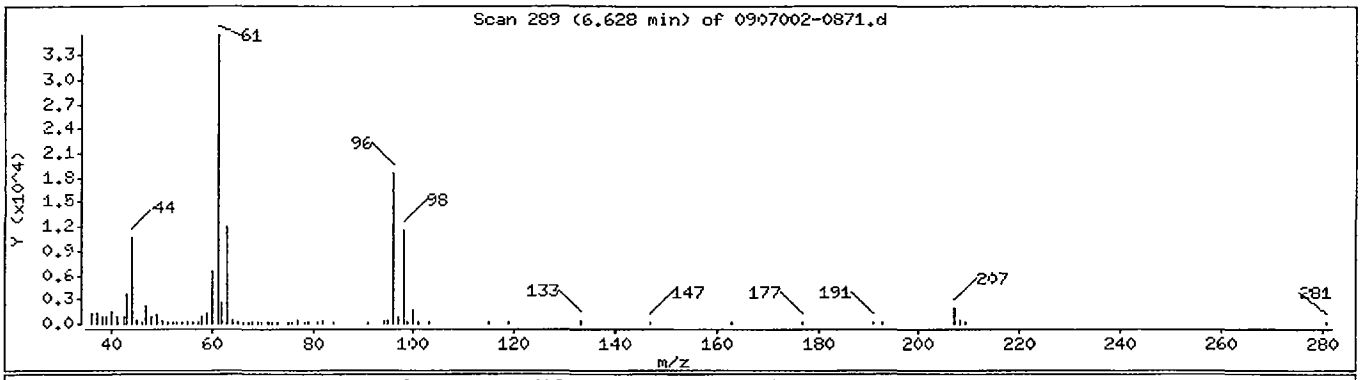
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

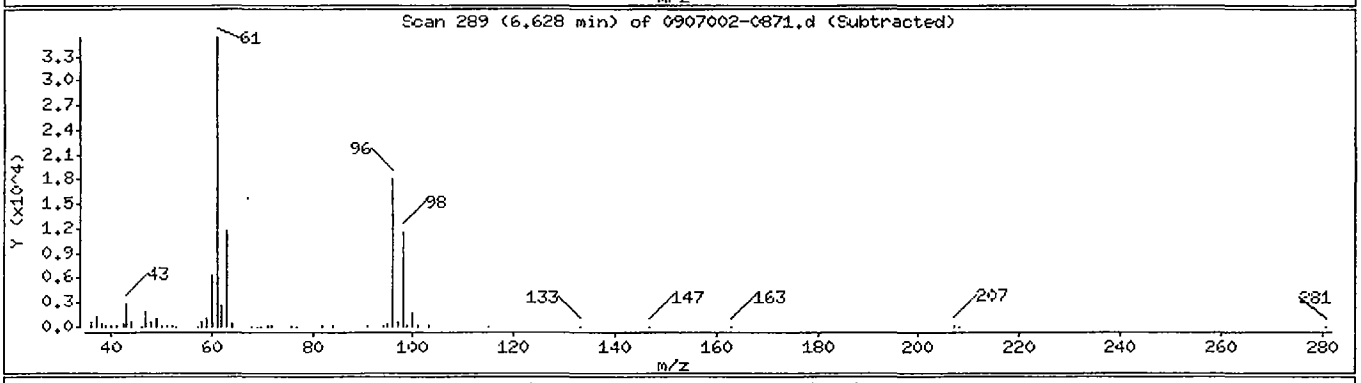
Sample Info: 0907002-08:JAO

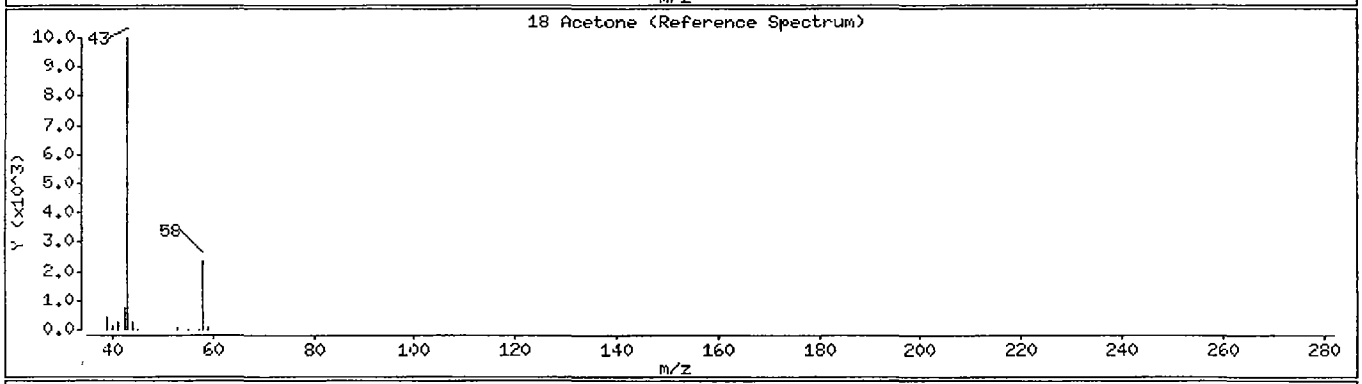
Purge Volume: 25.0 Operator: JAO

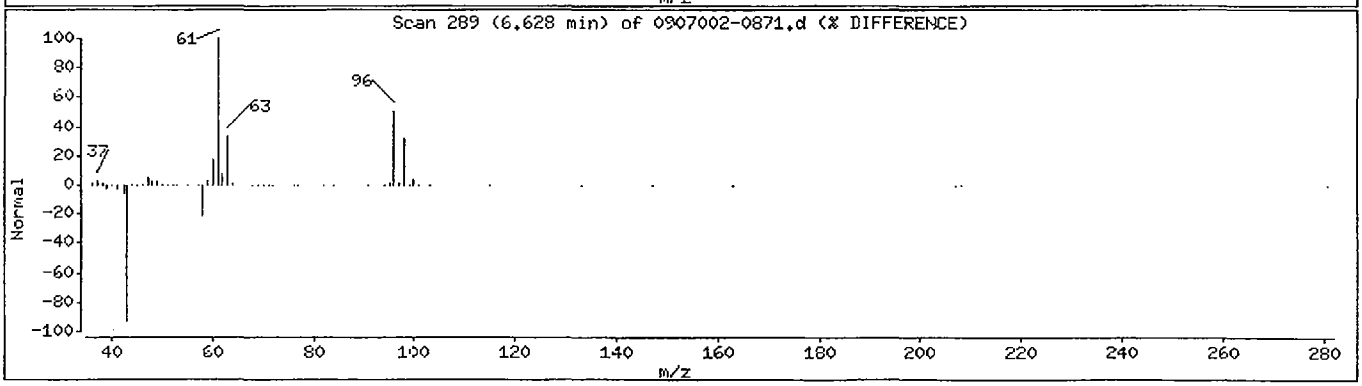
Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 2.6 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

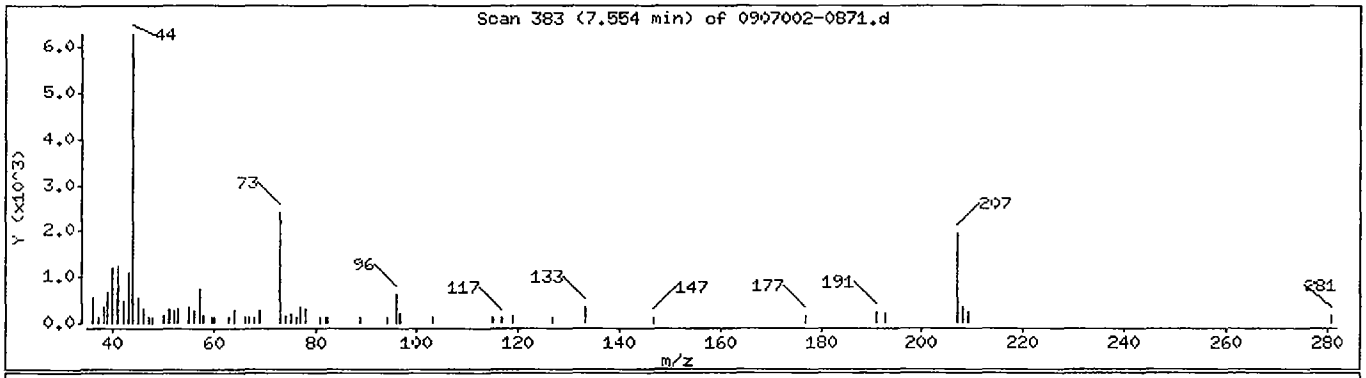
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

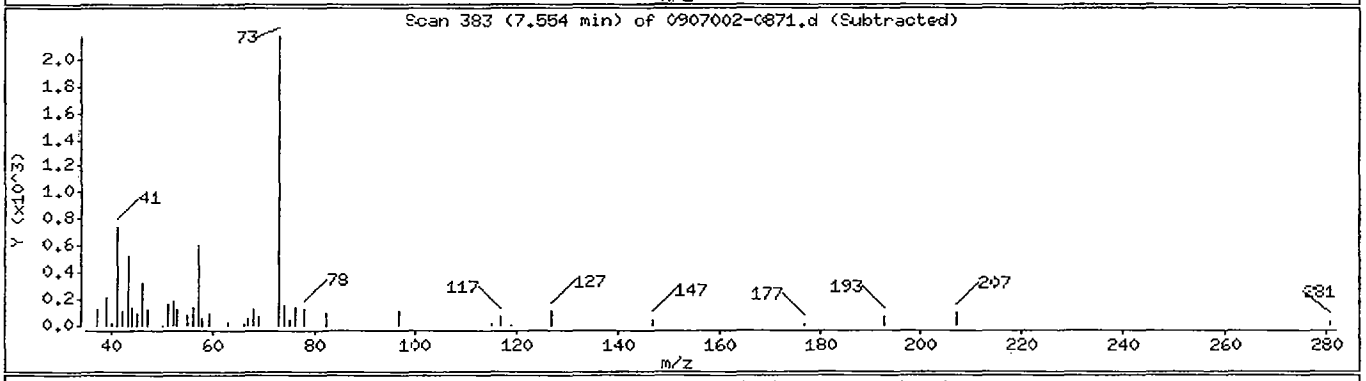
Sample Info: 0907002-08:JAO

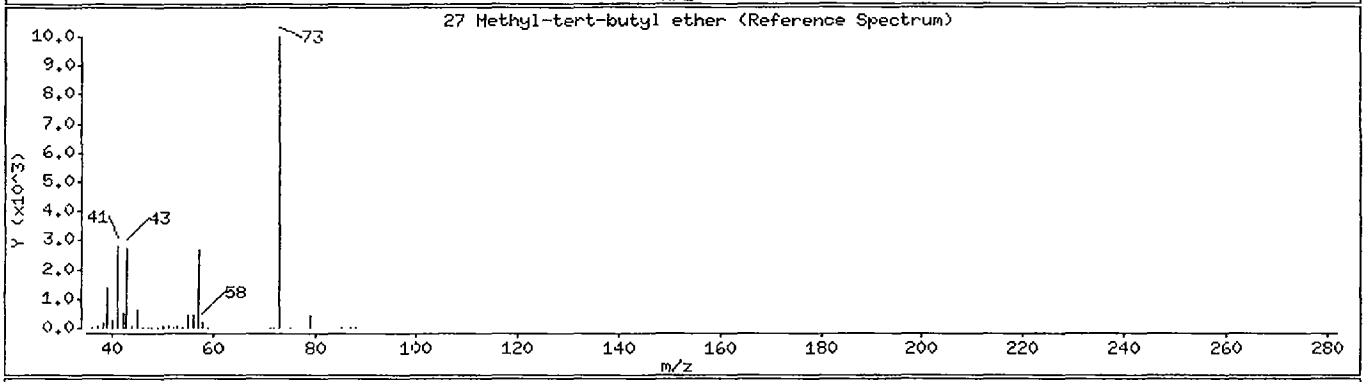
Purge Volume: 25.0 Operator: JAO

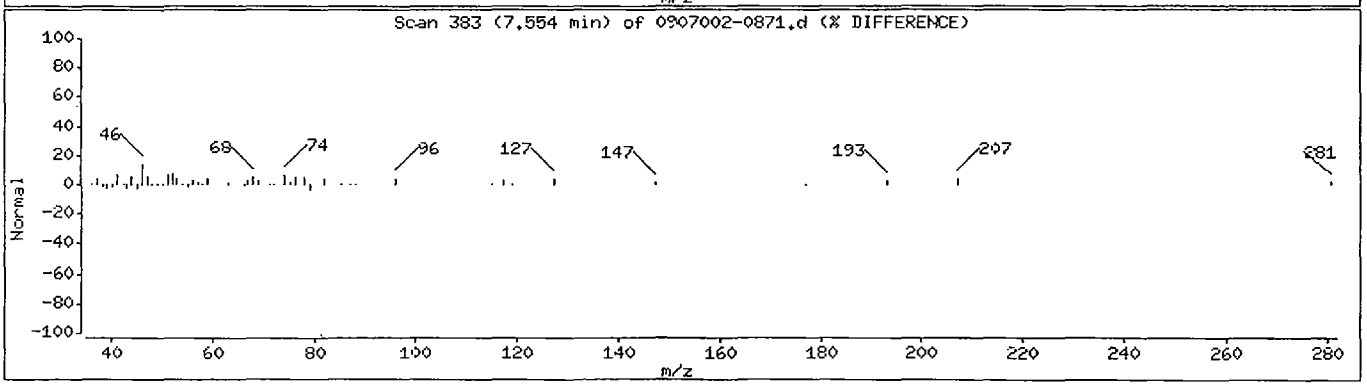
Column phase: SPB-624 Column diameter: 0.32

27 Methyl-tert-butyl ether Concentration: 0.11 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

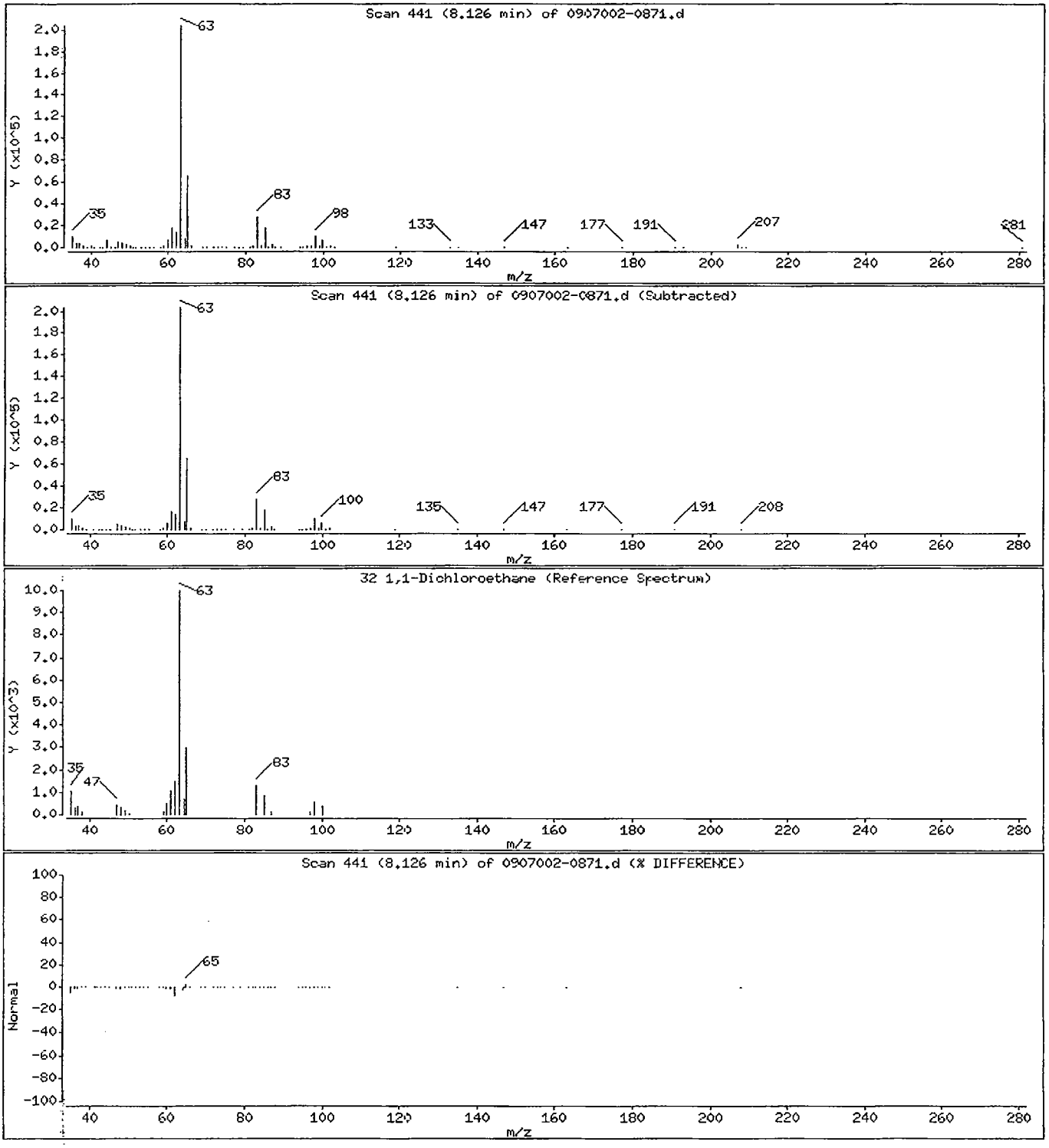
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

Sample Info: 0907002-08:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

32 1,1-Dichloroethane Concentration: 7.0 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

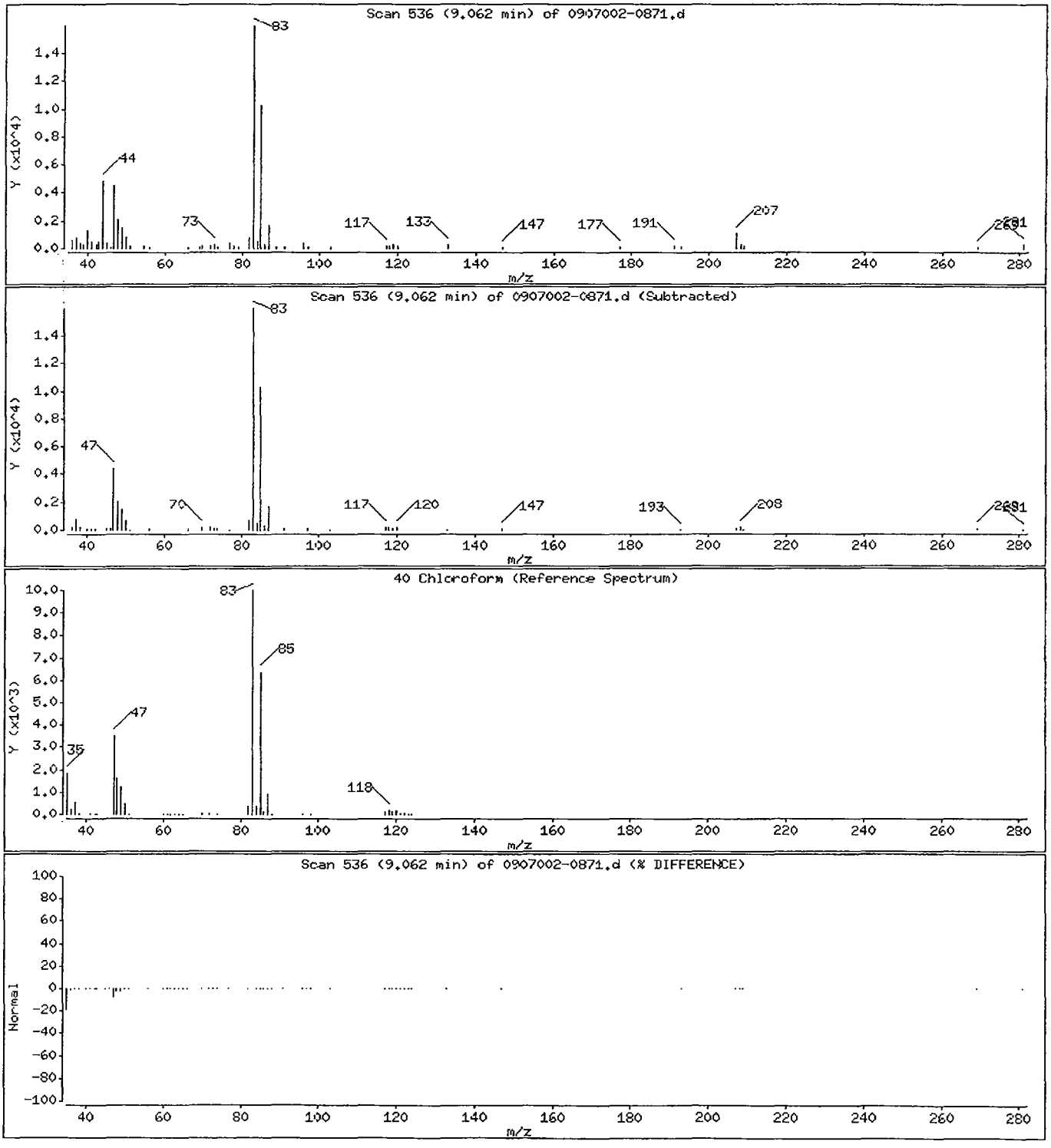
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

Sample Info: 0907002-08;JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

40 Chloroform Concentration: 0.50 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

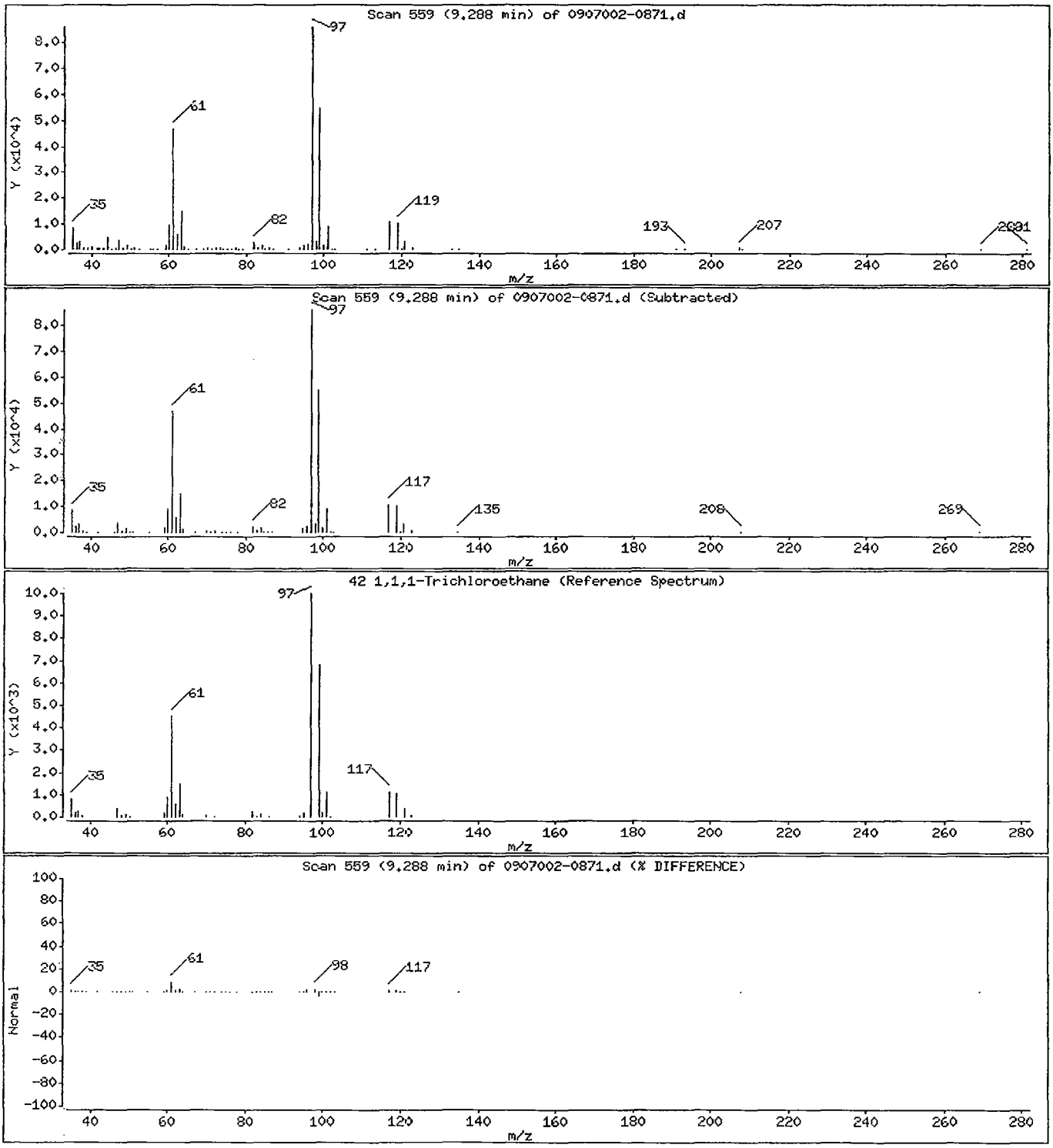
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

Sample Info: 0907002-08:JA0

Purge Volume: 25.0 Operator: JA0

Column phase: SPB-624 Column diameter: 0.32

42 1,1,1-Trichloroethane Concentration: 3.4 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

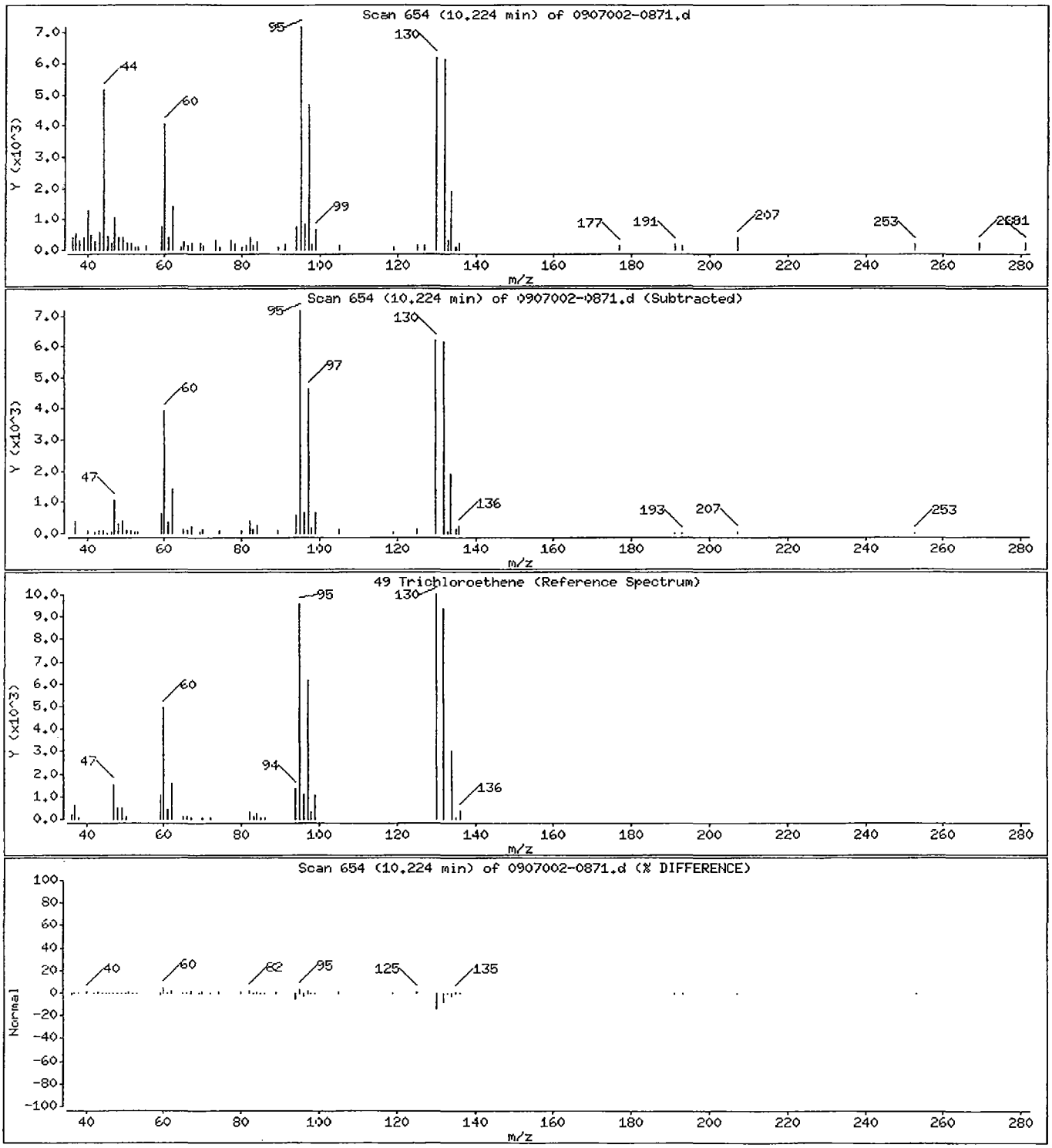
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

Sample Info: 0907002-08:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

49 Trichloroethene Concentration: 0.32 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

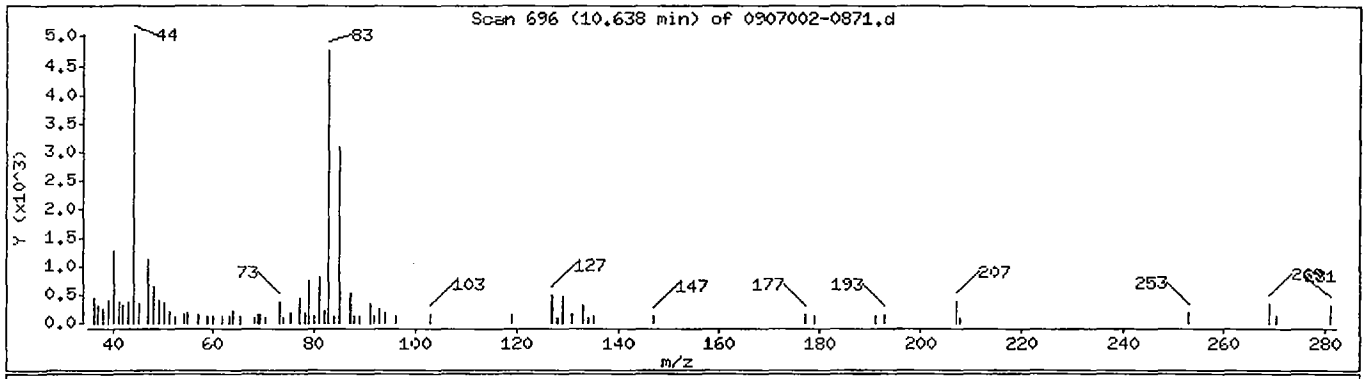
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

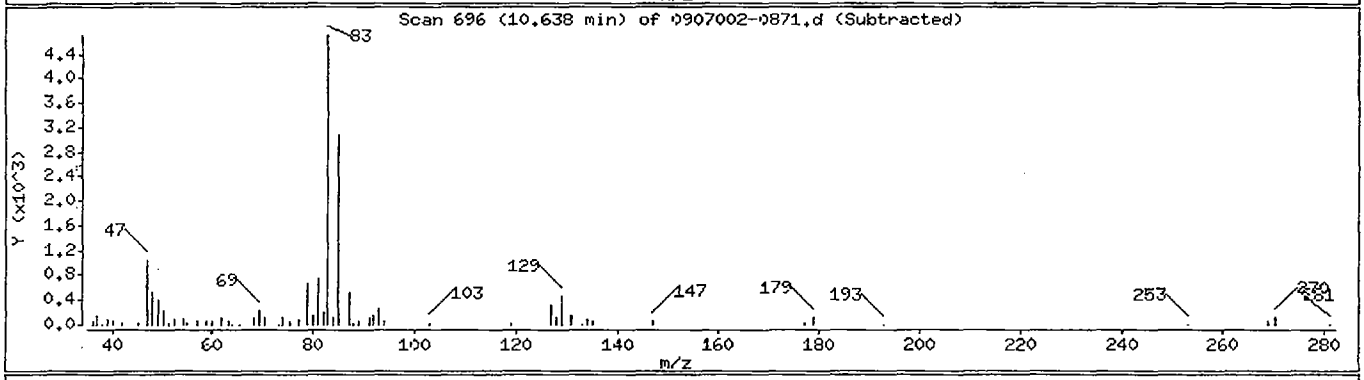
Sample Info: 0907002-08:JAO

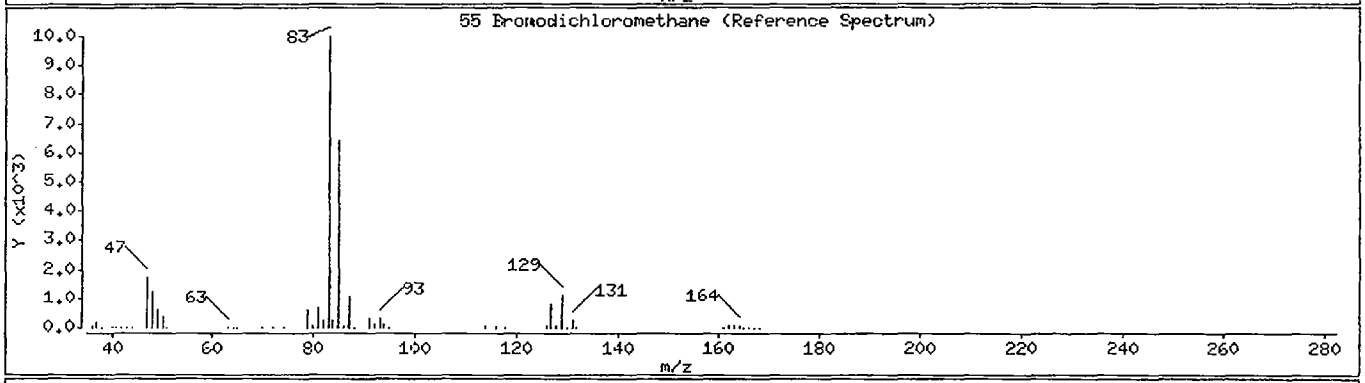
Purge Volume: 25.0 Operator: JAO

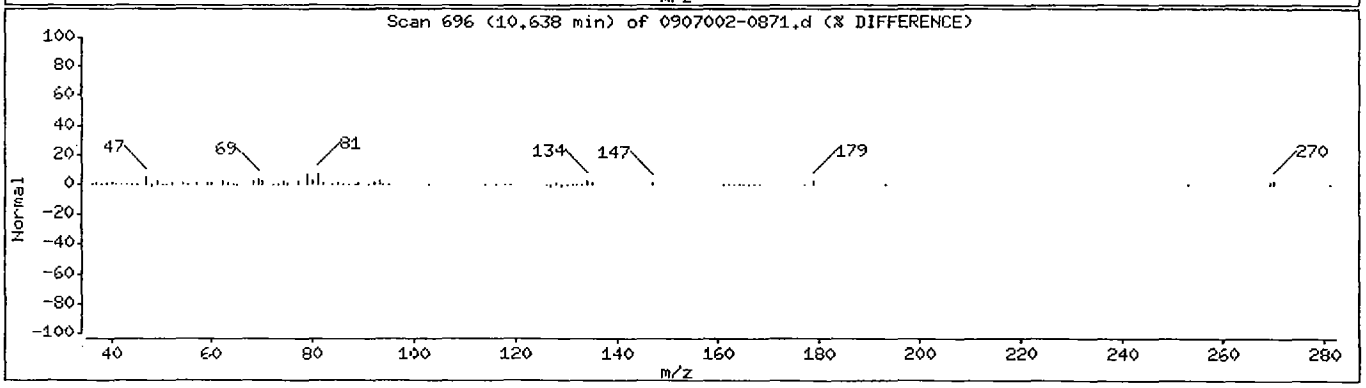
Column phase: SPB-624 Column diameter: 0.32

55 Bromodichloromethane Concentration: 0.21 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0871.d

Date : 09-JUL-2009 20:03

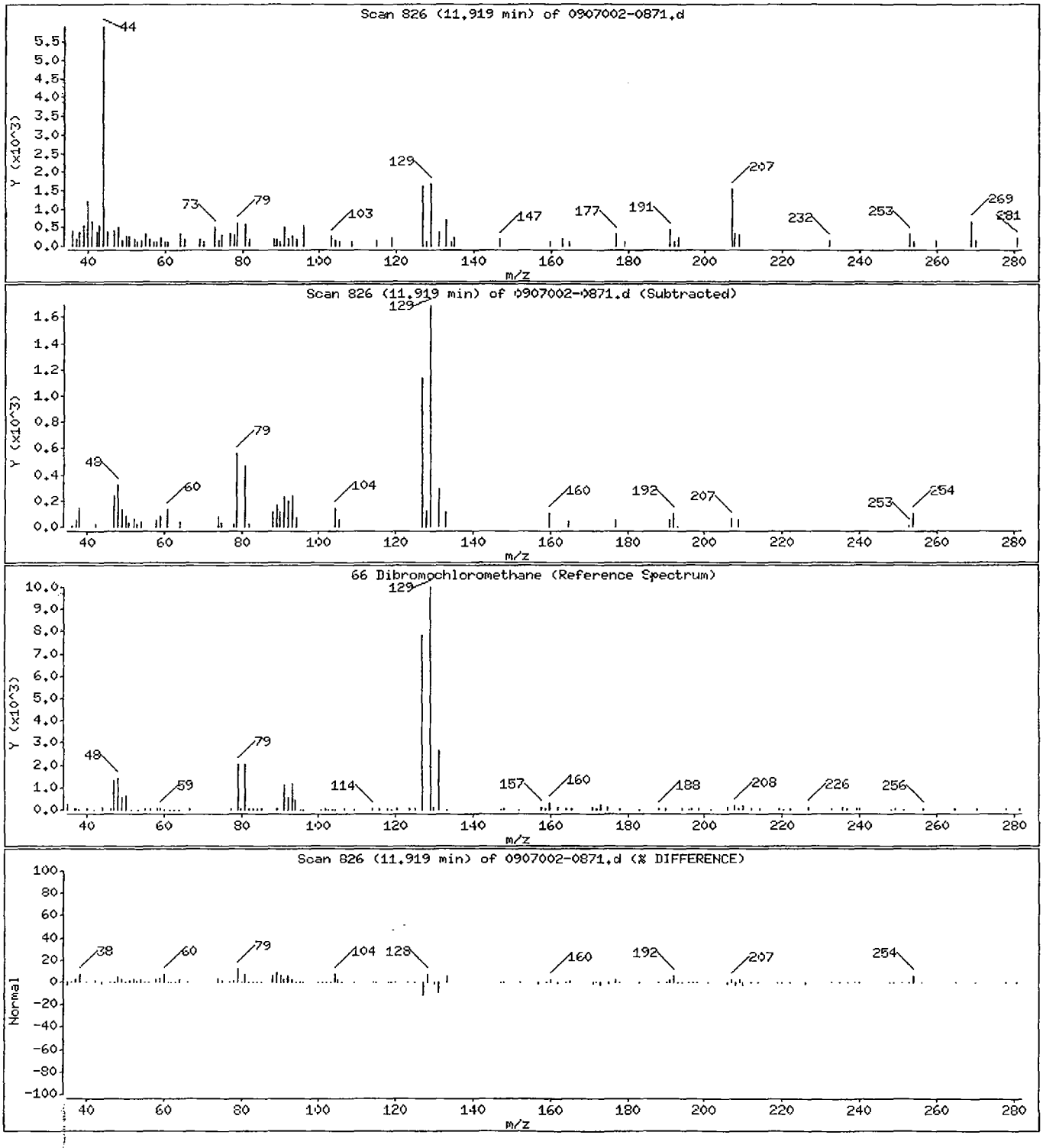
Client ID: YS07-GW05-0709 Instrument: 5972hp71.i

Sample Info: 0907002-08:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

66 Dibromochloromethane Concentration: 0.11 ug/L



FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0971

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.9	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.8	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.11	J
75-34-3	1,1-Dichloroethane	7.5	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.47	J
71-55-6	1,1,1-Trichloroethane	3.6	
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.32	J
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.17	J
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-0971

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

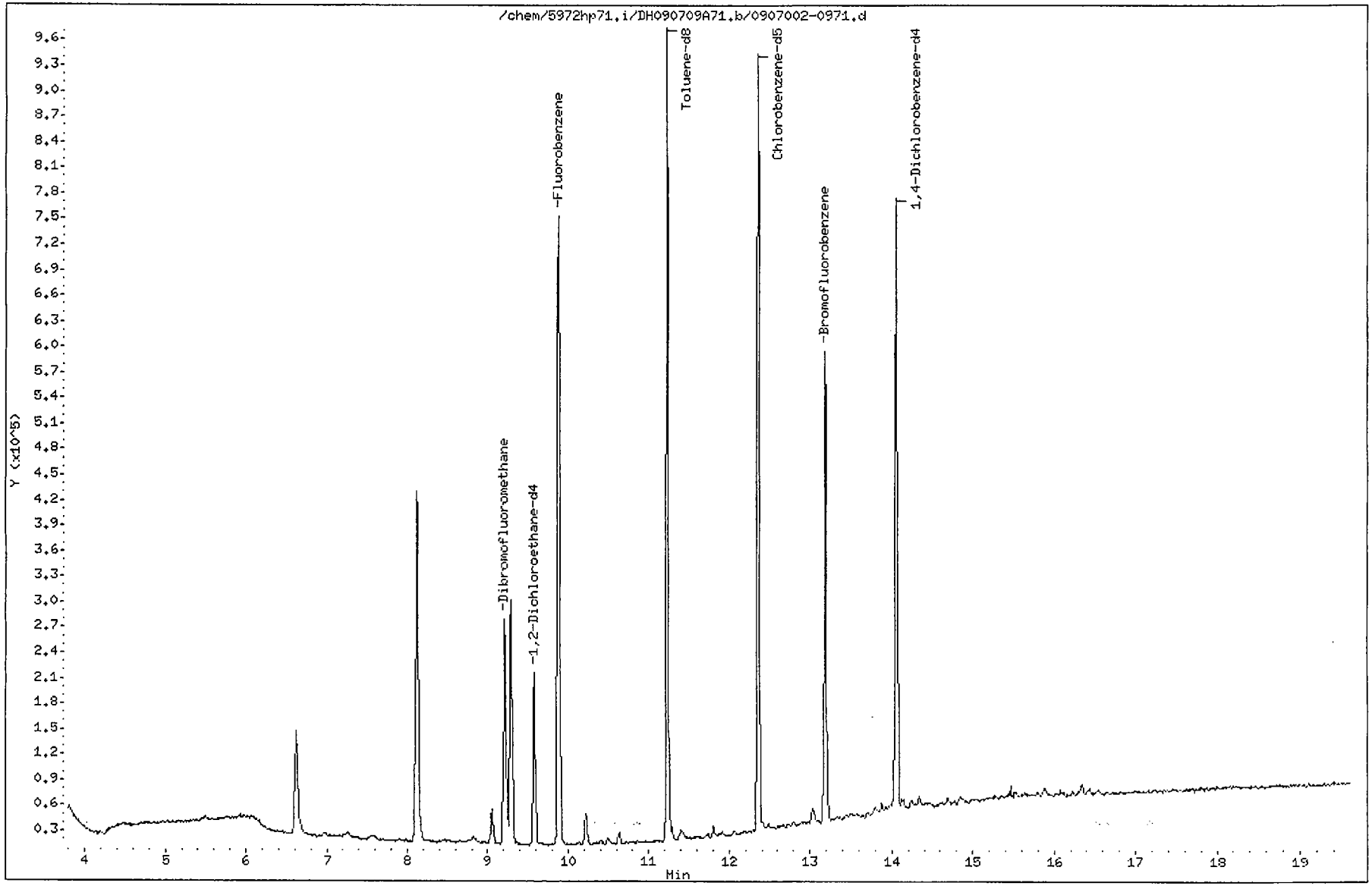
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d
Date : 09-JUL-2009 20:31
Client ID: YS07-GW05P-0709
Sample Info: 0907002-09;JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d
Report Date: 10-Jul-2009 18:38

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/0907002-0971.d
Lab Smp Id: 0907002-09 Client Smp ID: YS07-GW05P-0709
Inj Date : 09-JUL-2009 20:31
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-09:JAO
Misc Info : YS07-GW05P-0709
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1 Fluorobenzene	96	9.884	9.883	(1.000)	626242	125.000	
* 2 Chlorobenzene-d5	117	12.357	12.356	(1.000)	405271	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.052	14.060	(1.000)	170250	125.000	
$ 4 Dibromofluoromethane	113	9.214	9.213	(0.932)	169463	123.099	4.9
$ 5 1,2-Dichloroethane-d4	65	9.579	9.577	(0.969)	146396	136.707	5.5
$ 6 Toluene-d8	98	11.234	11.233	(0.909)	552976	126.900	5.1
$ 7 Bromofluorobenzene	95	13.185	13.183	(0.938)	195725	134.730	5.4
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	6.623	6.622	(0.670)	58485	46.3959	1.9
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

7/10/09

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d
Report Date: 10-Jul-2009 18:38

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.623	6.632	(0.670)	10157	71.1542	2.8
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	7.559	7.548	(0.765)	6013	2.77535	0.11(a)
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	8.121	8.119	(0.822)	505162	188.026	7.5
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	9.057	9.055	(0.916)	31862	11.8103	0.47(a)
42	1,1,1-Trichloroethane	97	9.293	9.292	(0.940)	210349	91.0821	3.6
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	10.219	10.218	(1.034)	11088	7.96568	0.32(a)
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	10.633	10.632	(1.076)	7545	4.22414	0.17(a)
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	Compound Not Detected.					
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d
Report Date: 10-Jul-2009 18:38

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

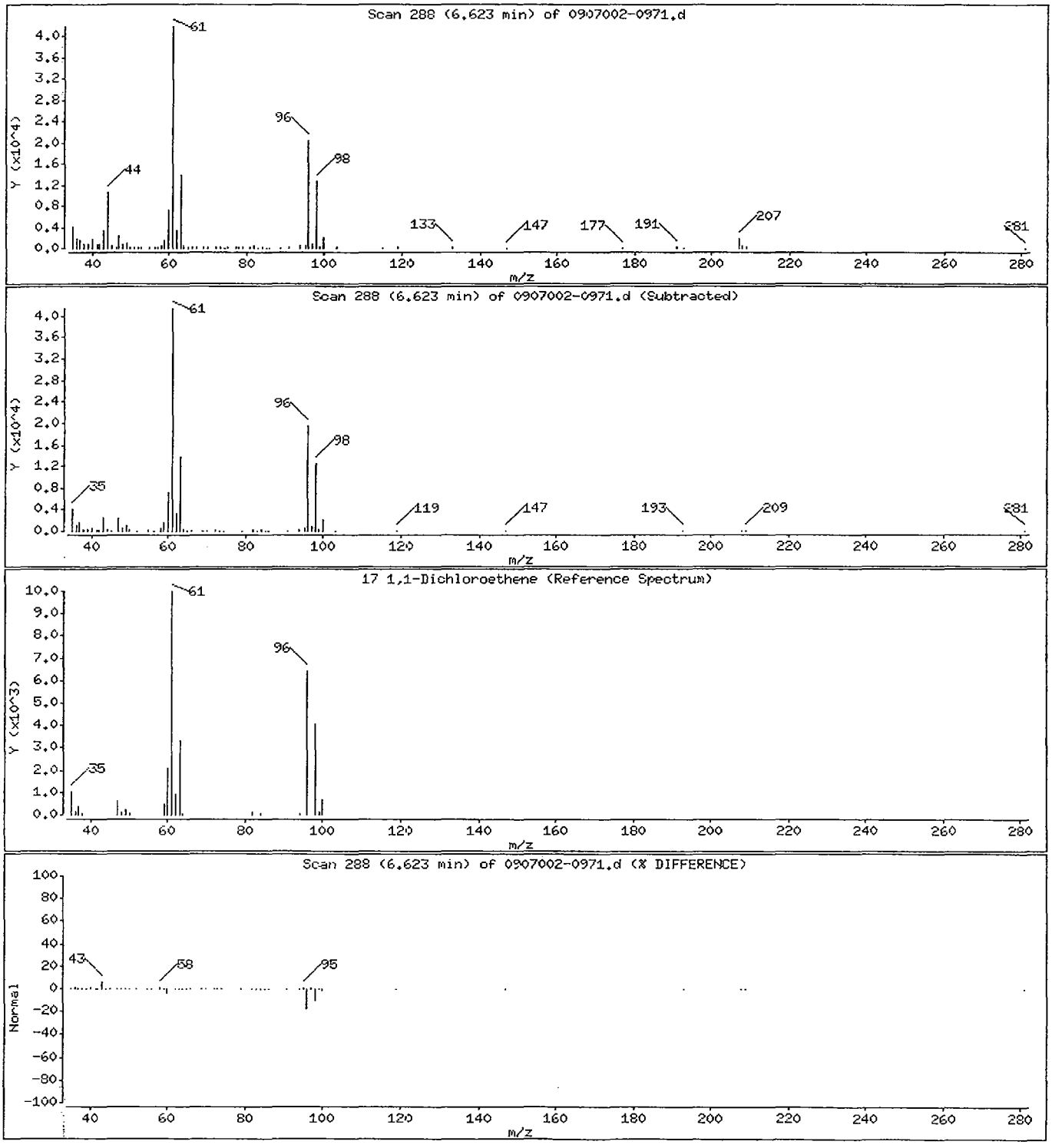
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09;JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

17 1,1-Dichloroethene Concentration: 1.9 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

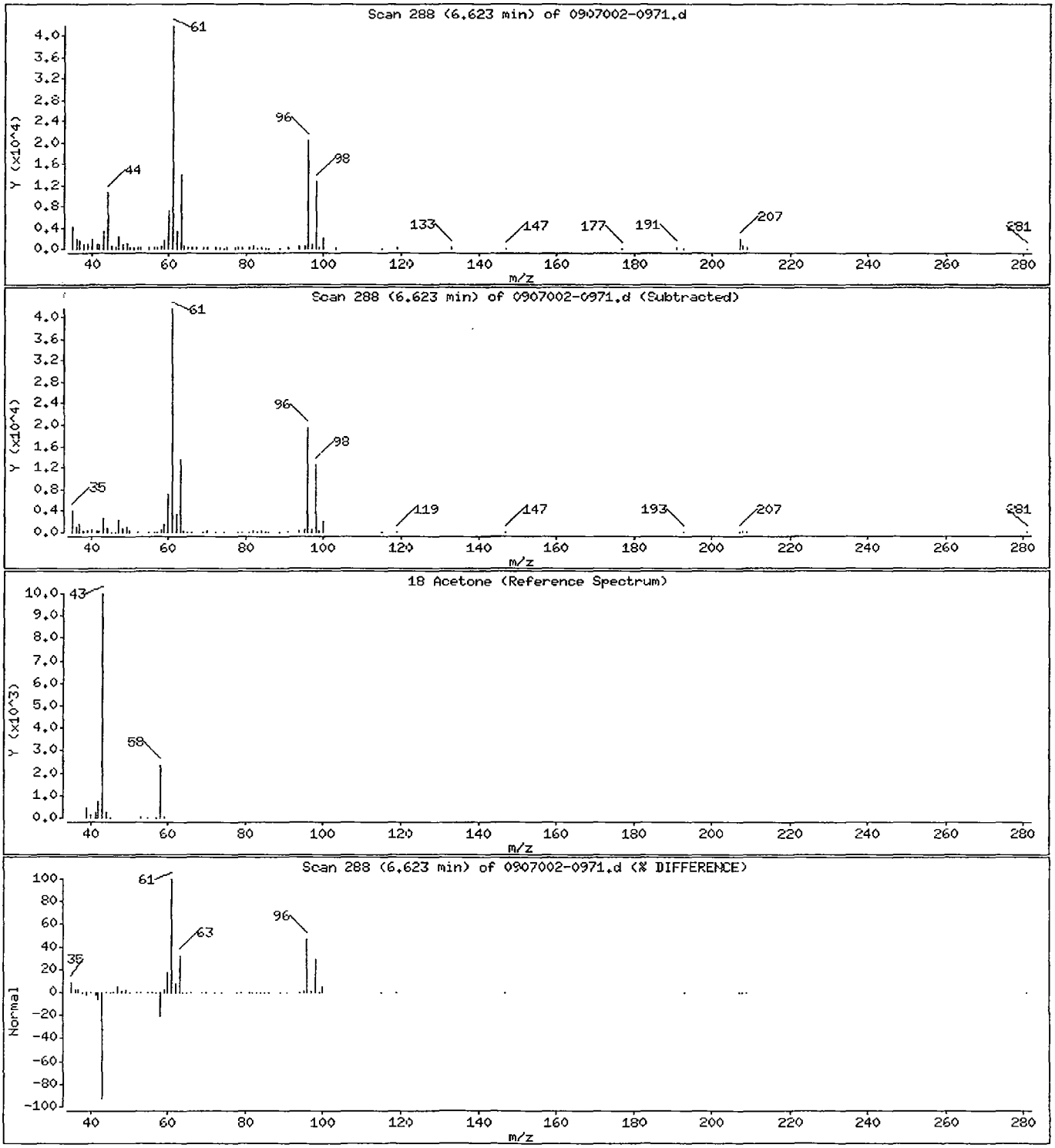
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 2.8 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

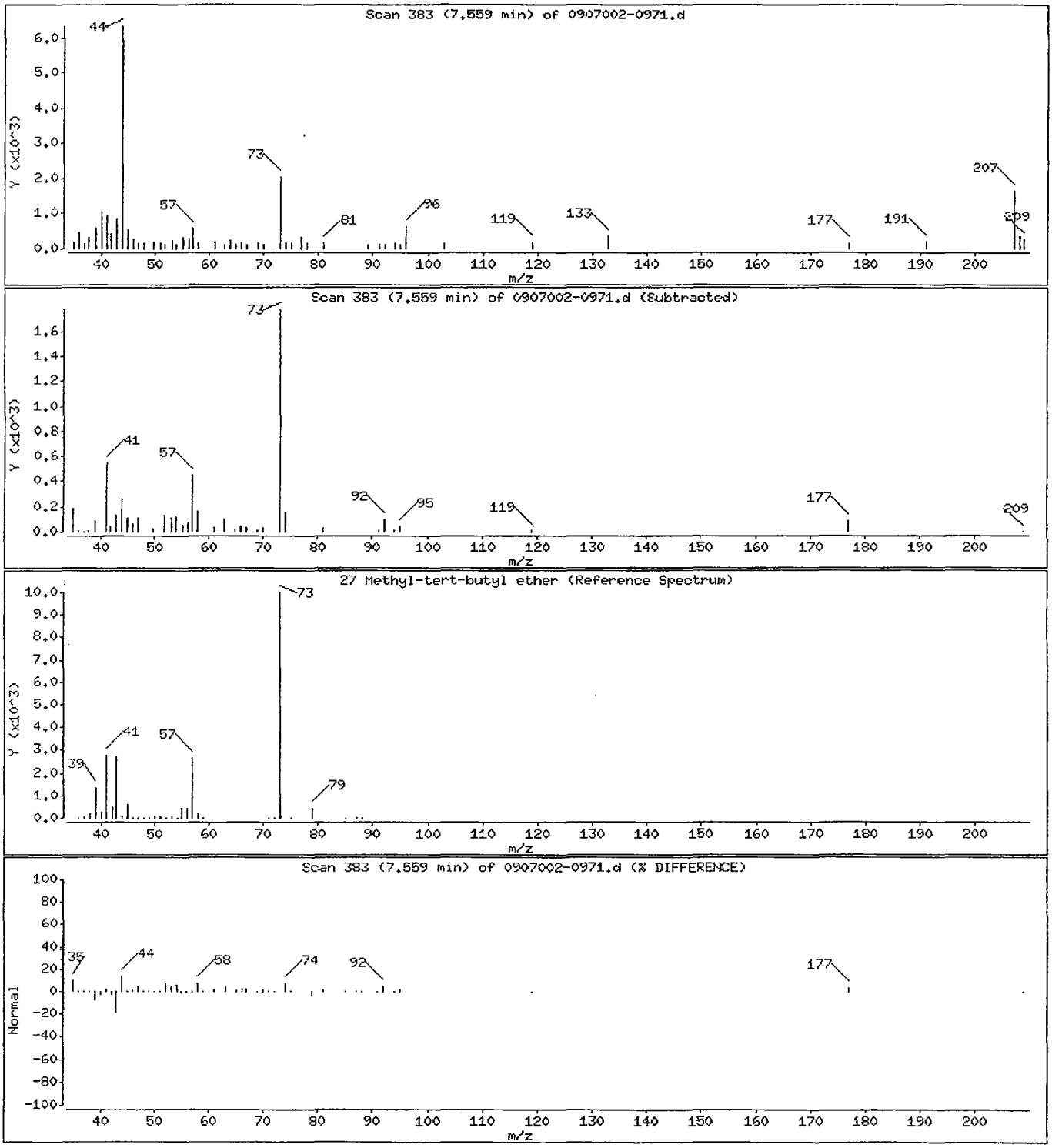
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

27 Methyl-tert-butyl ether Concentration: 0.11 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

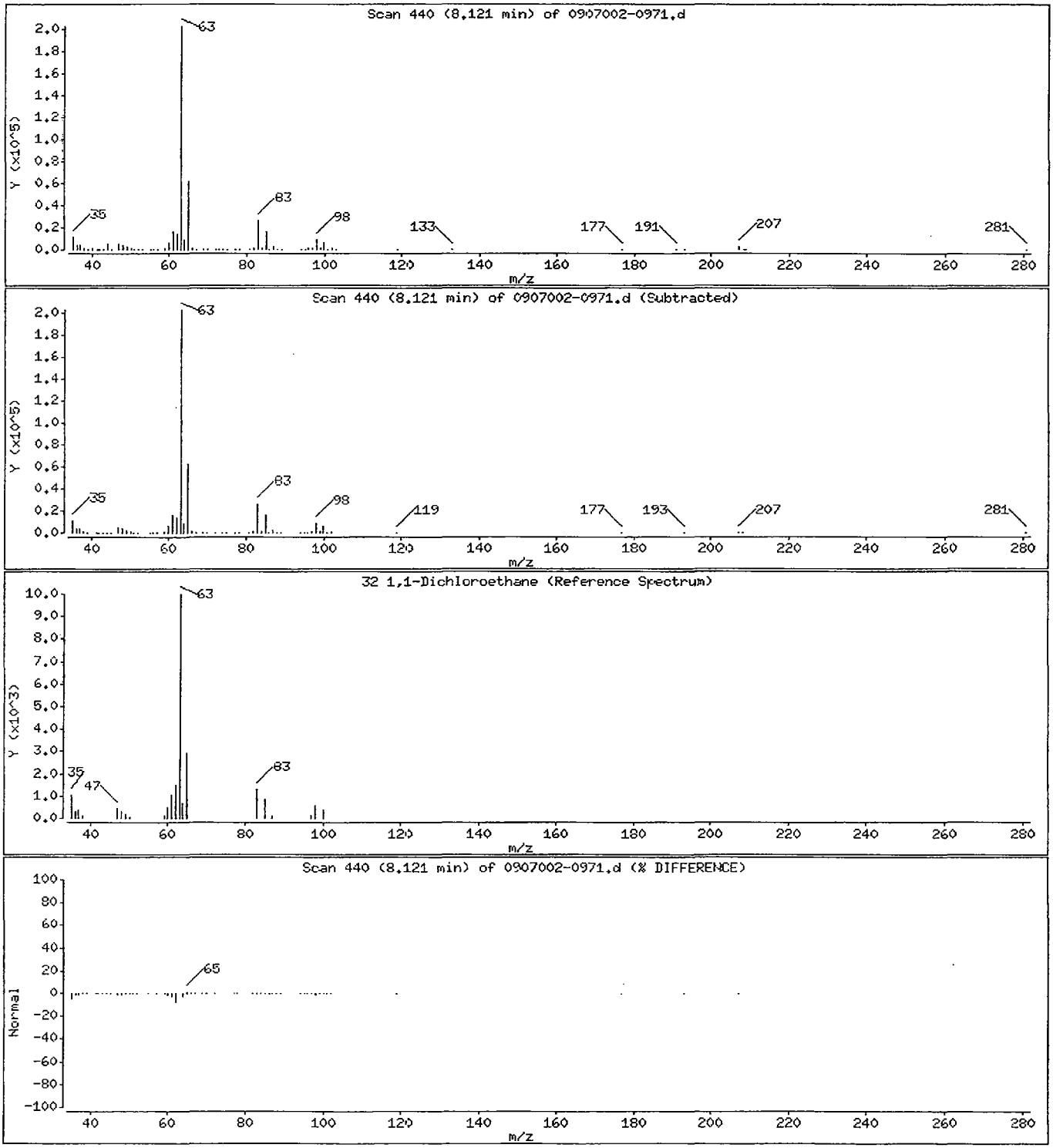
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

32 1,1-Dichloroethane Concentration: 7.5 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

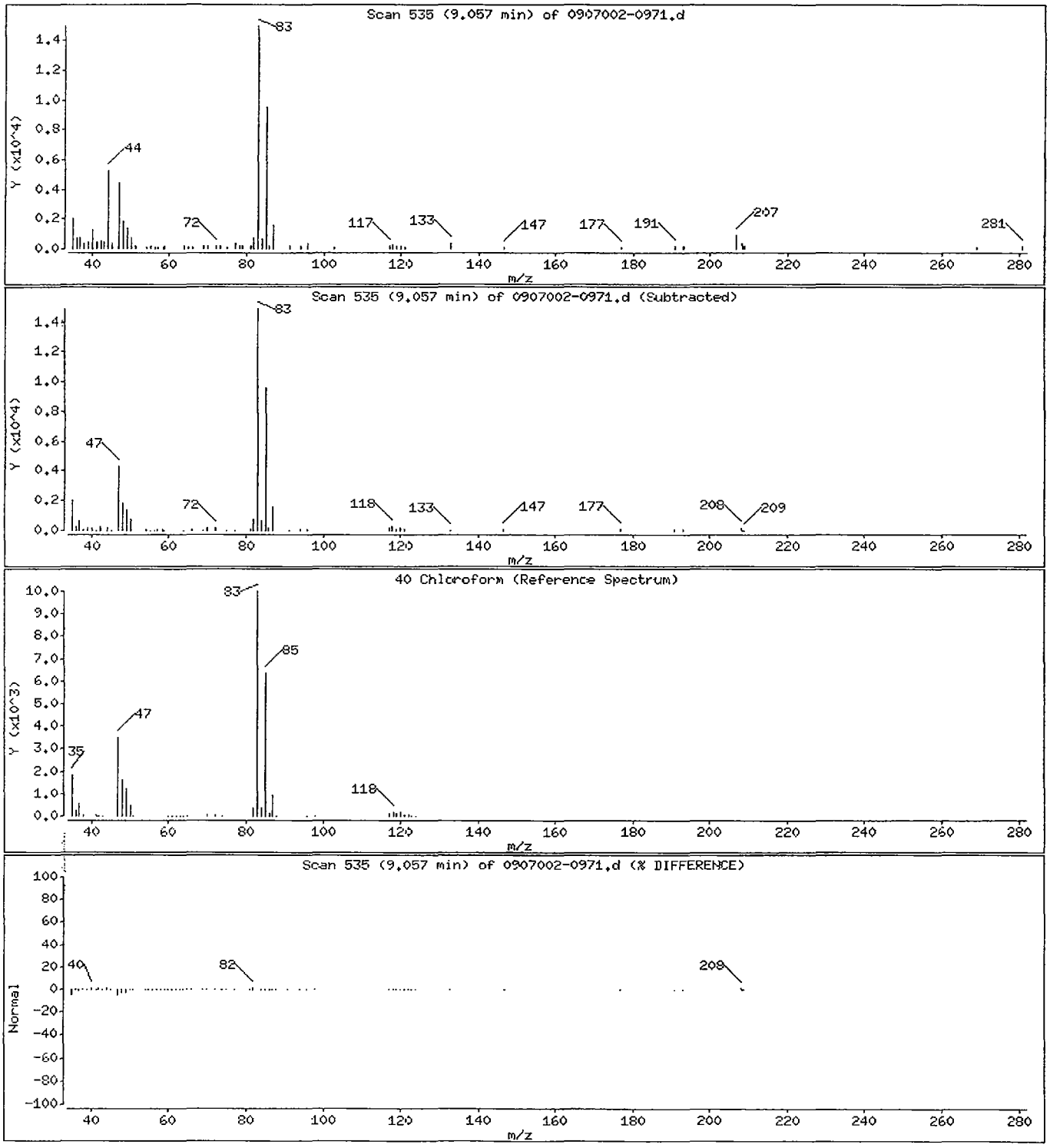
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

40 Chloroform Concentration: 0.47 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

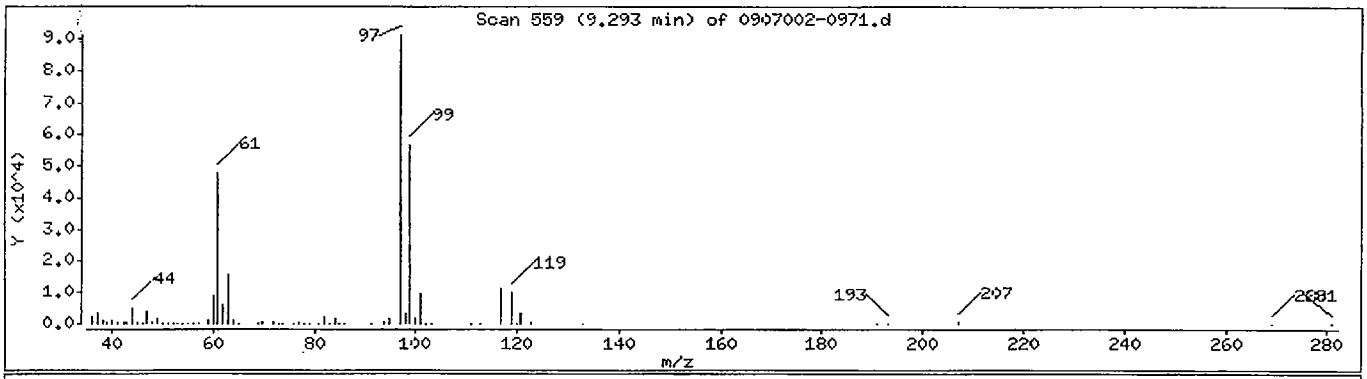
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

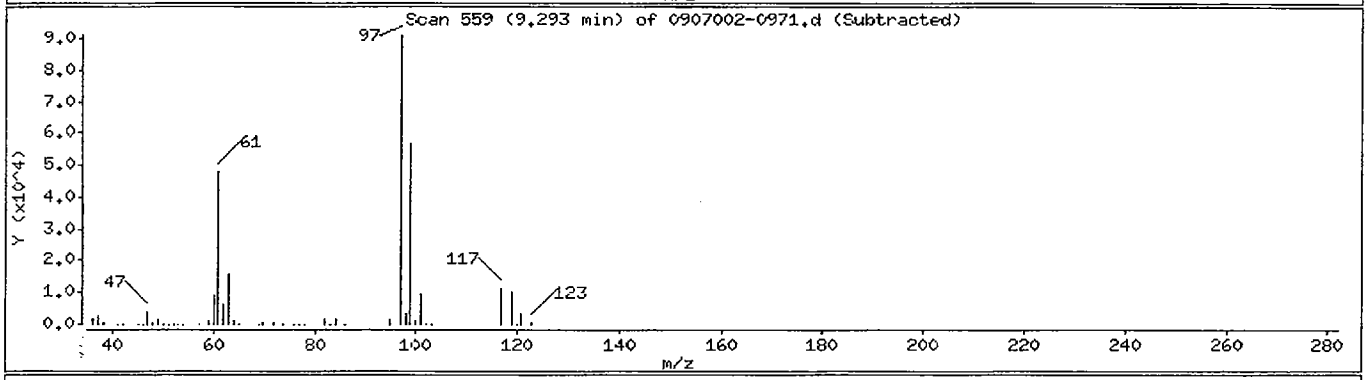
Sample Info: 0907002-09:JAO

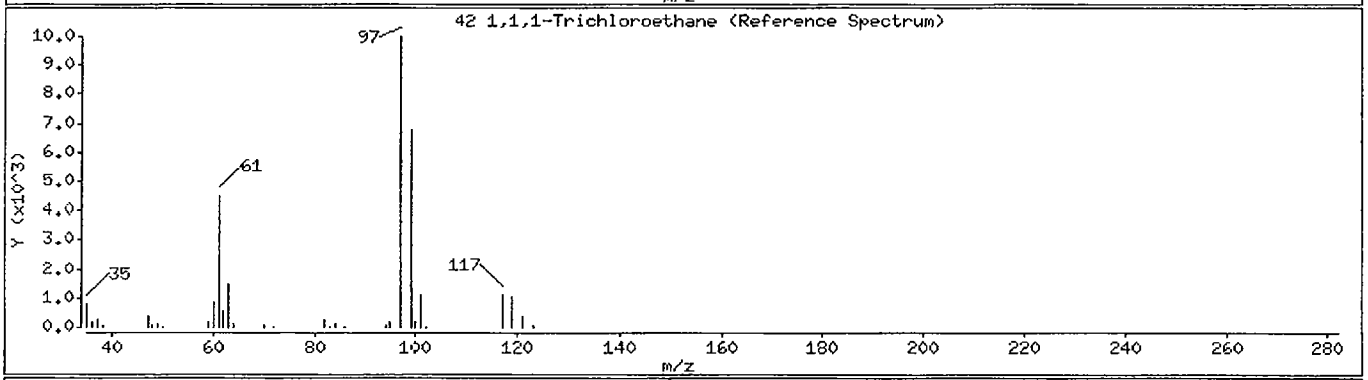
Purge Volume: 25.0 Operator: JAO

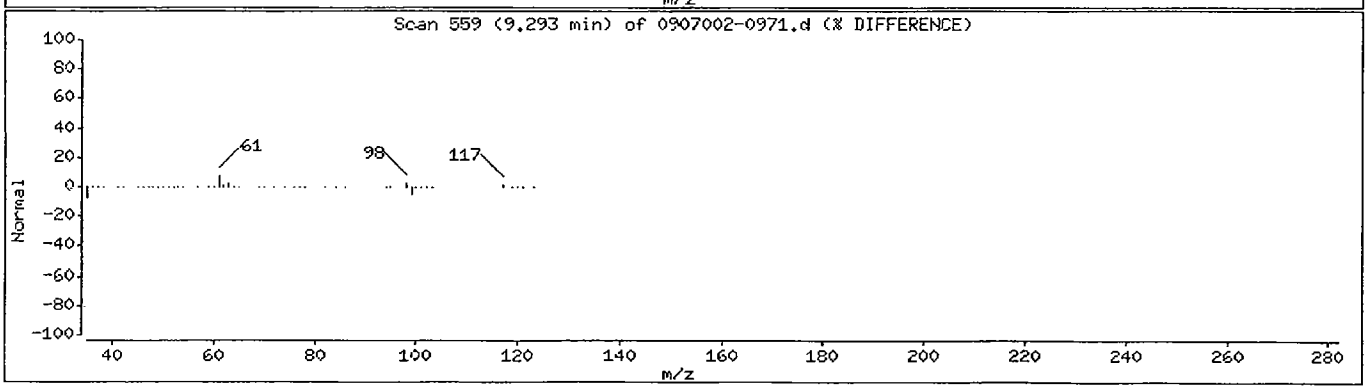
Column phase: SPB-624 Column diameter: 0.32

42 1,1,1-Trichloroethane Concentration: 3.6 ug/L









Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

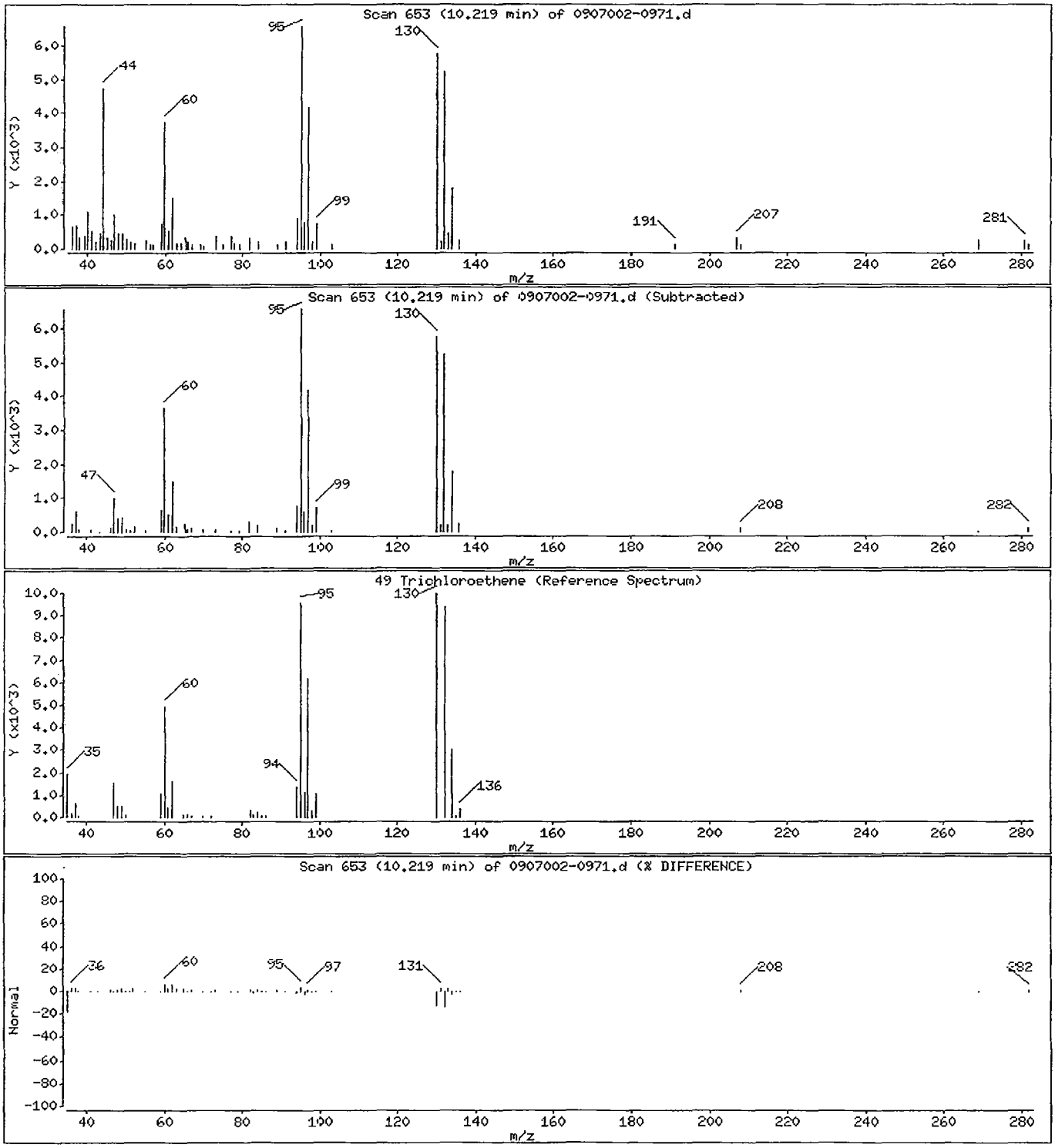
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09;JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

49 Trichloroethene Concentration: 0.32 ug/L



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-0971.d

Date : 09-JUL-2009 20:31

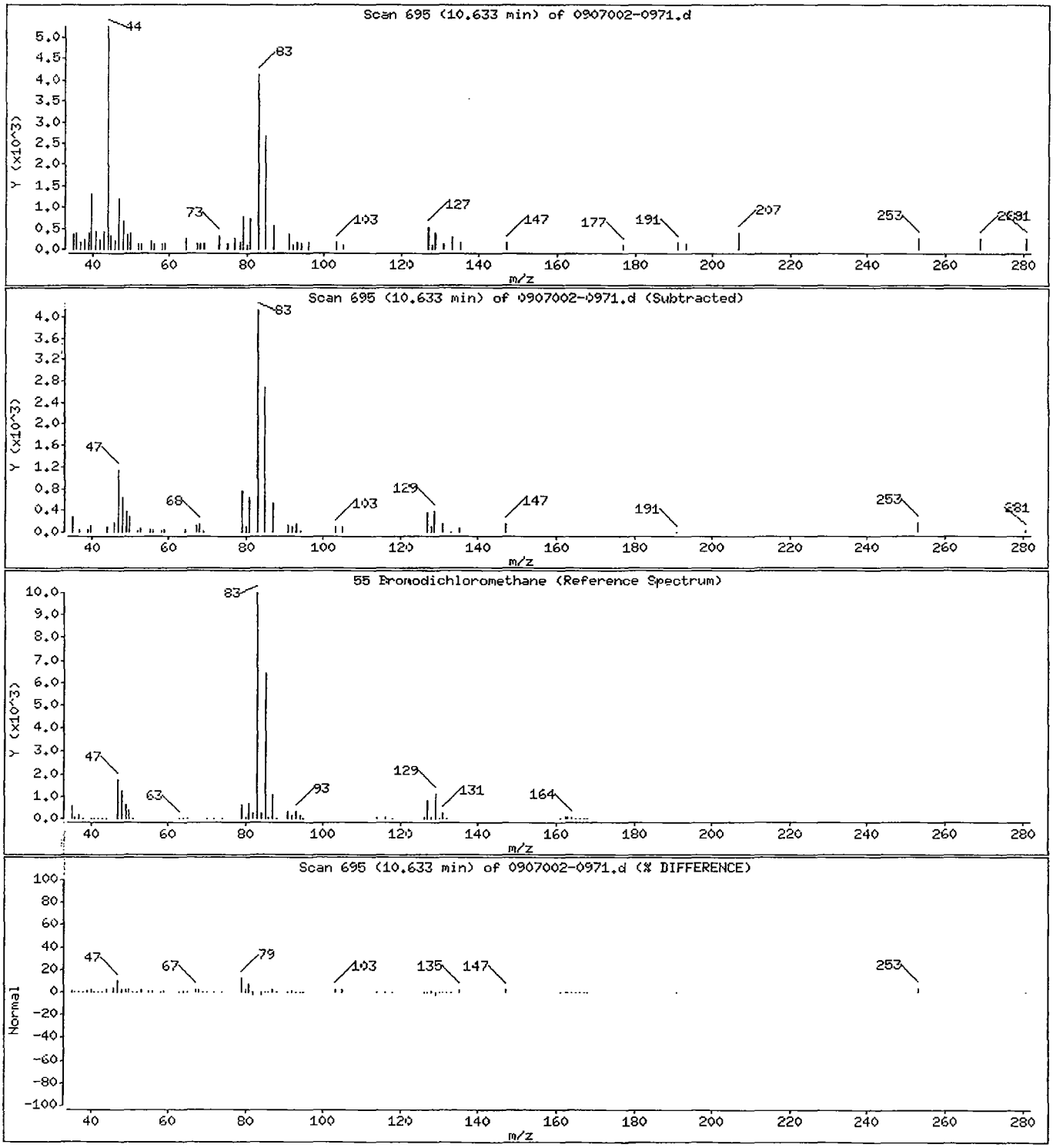
Client ID: YS07-GW05P-0709 Instrument: 5972hp71.i

Sample Info: 0907002-09:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

55 Bromodichloromethane Concentration: 0.17 ug/L



FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

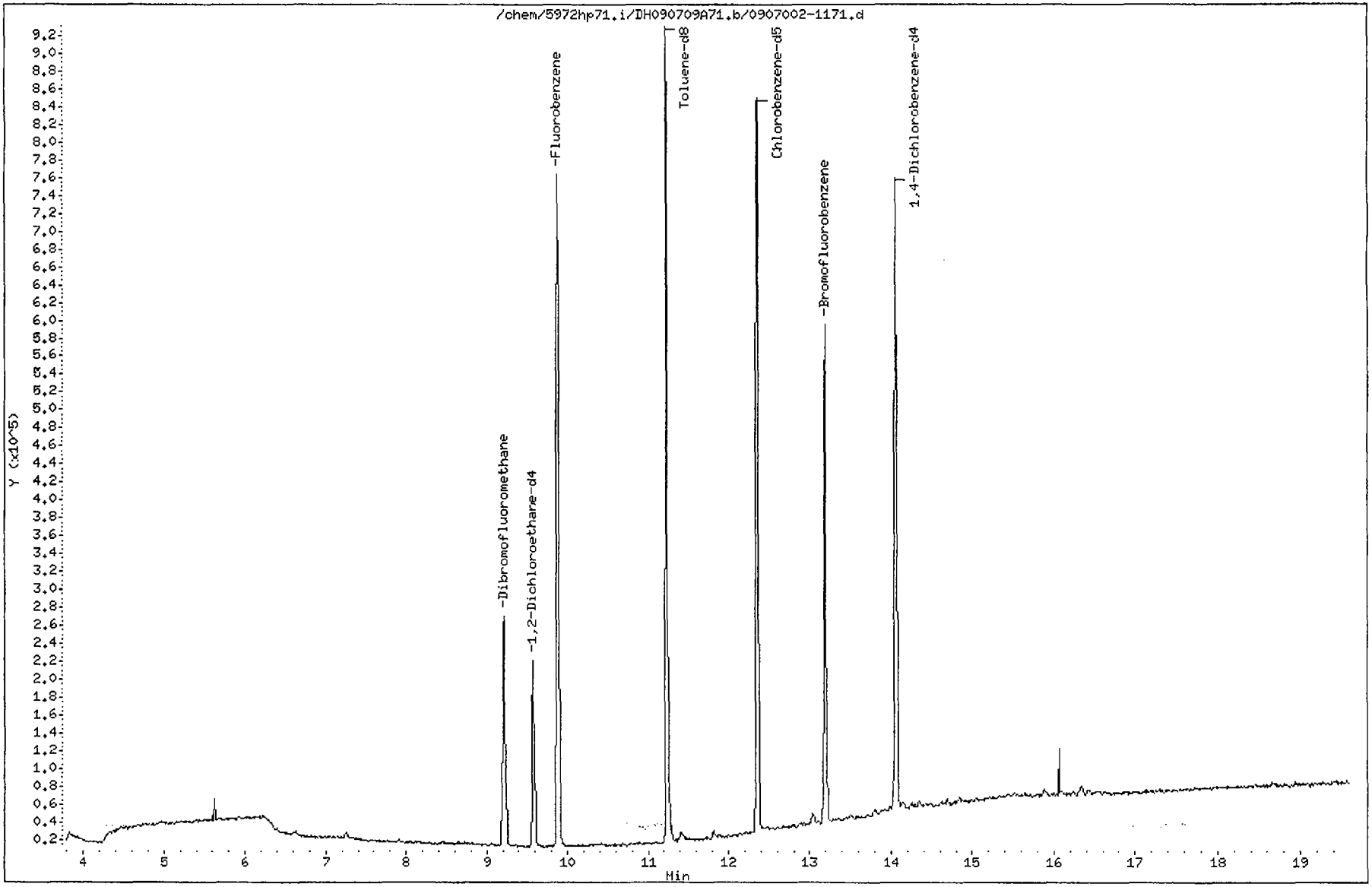
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1171.d
Date : 09-JUL-2009 21:40
Client ID: YS07-TB01-070709
Sample Info: 0907002-11:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1171.d
Report Date: 10-Jul-2009 18:38

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/0907002-1171.d
Lab Smp Id: 0907002-11 Client Smp ID: YS07-TB01-070709
Inj Date : 09-JUL-2009 21:40
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-11:JAO
Misc Info : YS07-TB01-070709
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1	Fluorobenzene	96	9.881	9.883	(1.000)	615412	125.000	
* 2	Chlorobenzene-d5	117	12.363	12.356	(1.000)	400460	125.000	
* 3	1,4-Dichlorobenzene-d4	152	14.058	14.060	(1.000)	172537	125.000	
$ 4	Dibromofluoromethane	113	9.221	9.213	(0.933)	168931	124.928	5.0
$ 5	1,2-Dichloroethane-d4	65	9.575	9.577	(0.969)	150938	143.526	5.7
$ 6	Toluene-d8	98	11.230	11.233	(0.908)	544843	126.451	5.1
$ 7	Bromofluorobenzene	95	13.191	13.183	(0.938)	198388	134.757	5.4
8	Dichlorodifluoromethane	85	Compound Not Detected.					
9	Chloromethane	50	Compound Not Detected.					
10	Vinyl Chloride	62	Compound Not Detected.					
11	Bromomethane	94	Compound Not Detected.					
12	Chloroethane	64	Compound Not Detected.					
13	Trichlorofluoromethane	101	Compound Not Detected.					
17	1,1-Dichloroethene	96	Compound Not Detected.					
16	1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

7/10/09

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1171.d
Report Date: 10-Jul-2009 18:38

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.629	6.632	(0.671)	7458	53.1660	2.1(a)
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	Compound Not Detected.					
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	Compound Not Detected.					
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1171.d
Report Date: 10-Jul-2009 18:38

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1171.d

Date : 09-JUL-2009 21:40

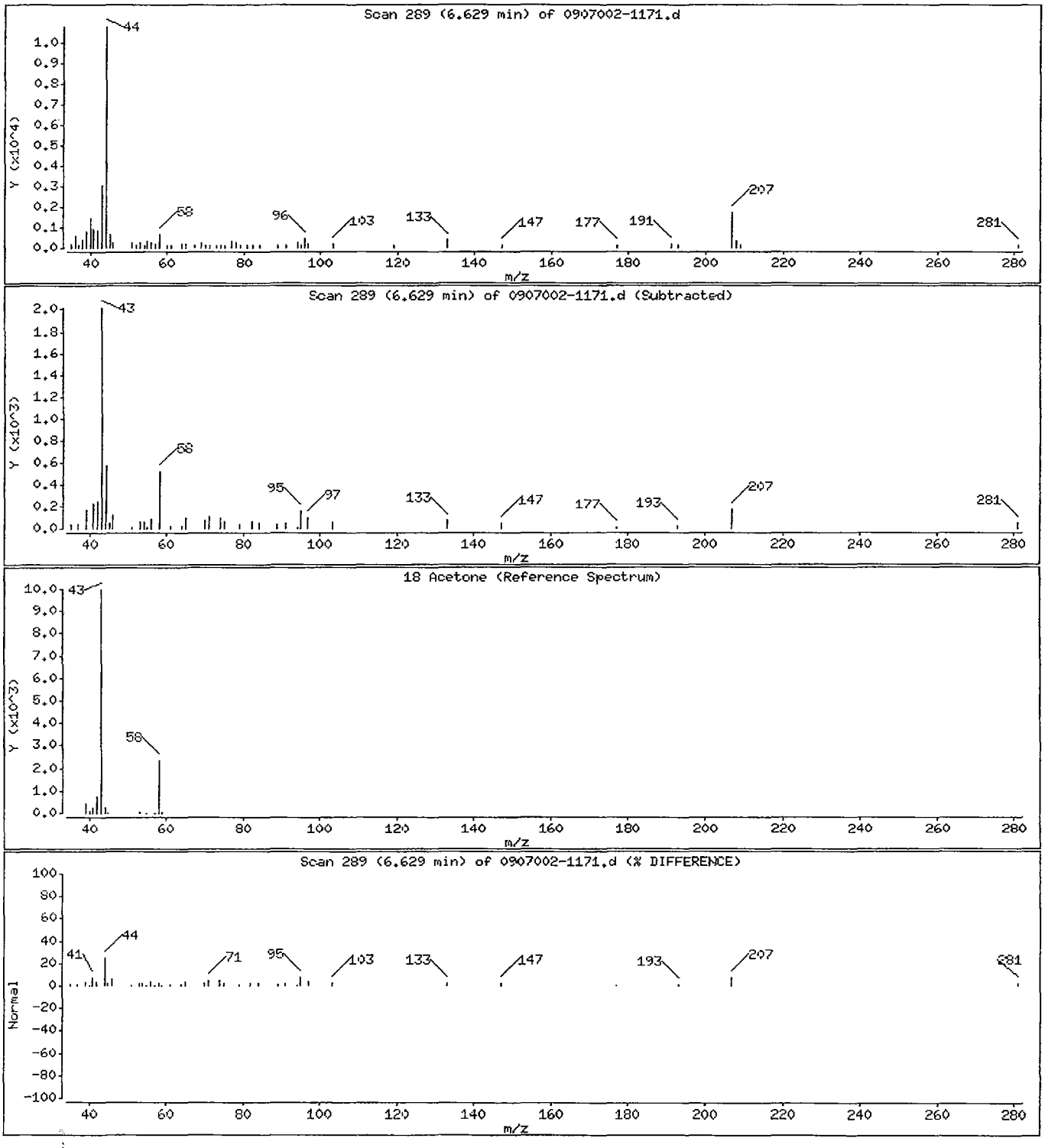
Client ID: YS07-TB01-070709 Instrument: 5972hp71.i

Sample Info: 0907002-11:JAO

Purge Volume: 25.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 2.1 ug/L



FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1371

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

AMENDED DATA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-TB0
1-070809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 0907002-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907002-1371

Level: (low/med) LOW Date Received: 07/09/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

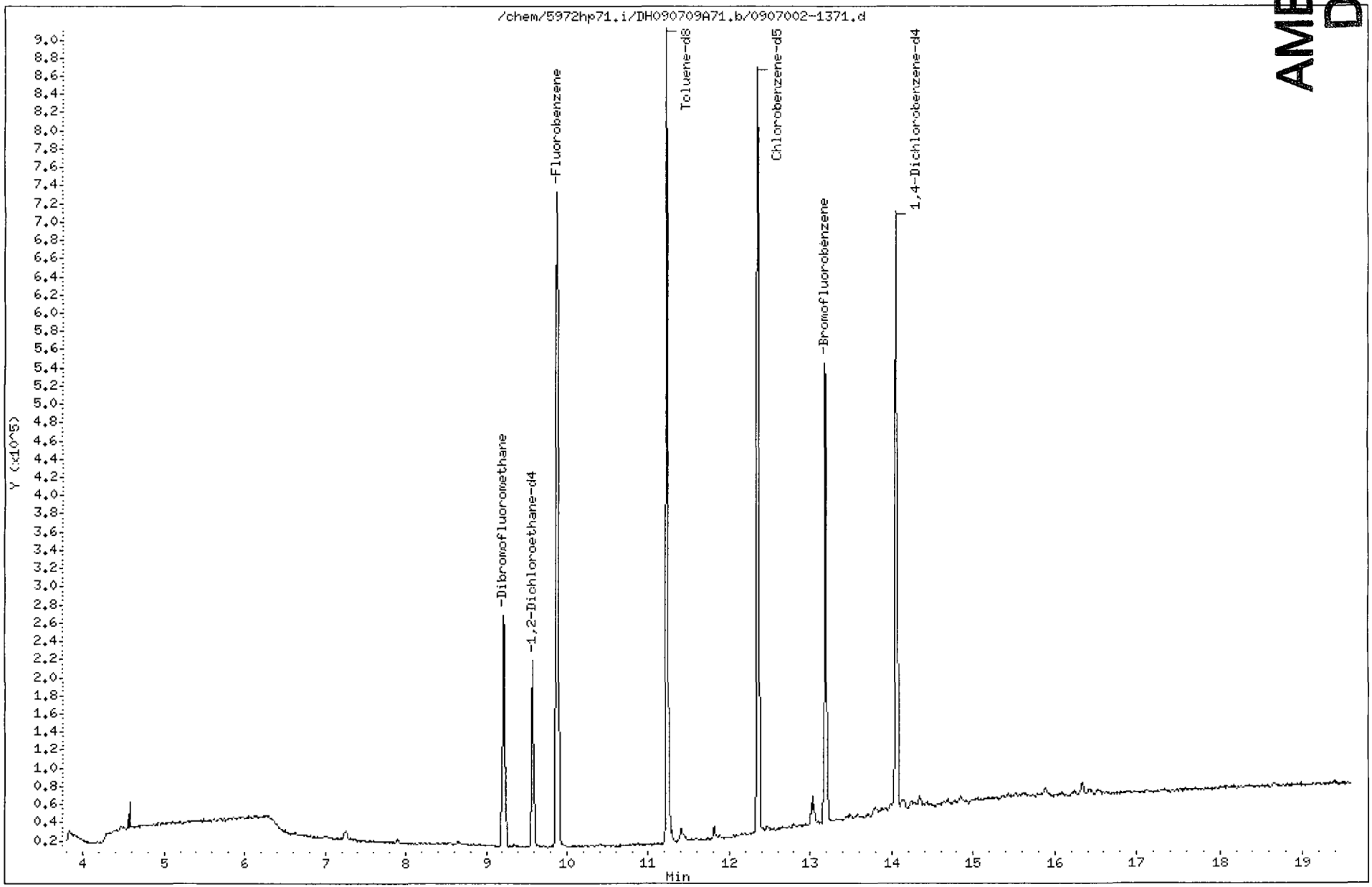
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

AMENDED DATA

AMENDED DATA

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1371.d
Date : 09-JUL-2009 22:37
Client ID: YS07-TB01-070809
Sample Info: 0907002-13:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1371.d
Report Date: 25-Aug-2009 13:21

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/0907002-1371.d
Lab Smp Id: 0907002-13 Client Smp ID: YS07-TB01-070809
Inj Date : 09-JUL-2009 22:37
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 0907002-13:JAO
Misc Info : YS07-TB01-070809
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 1 Fluorobenzene	96	9.882	9.883	(1.000)	588552	125.000	
* 2 Chlorobenzene-d5	117	12.355	12.356	(1.000)	380604	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.060	14.060	(1.000)	159656	125.000	
$ 4 Dibromofluoromethane	113	9.212	9.213	(0.932)	162165	125.412	5.0
$ 5 1,2-Dichloroethane-d4	65	9.577	9.577	(0.969)	145187	144.369	5.8
$ 6 Toluene-d8	98	11.232	11.233	(0.909)	518566	126.673	5.1
$ 7 Bromofluorobenzene	95	13.183	13.183	(0.938)	188624	139.017	5.6
8 Dichlorodifluoromethane	85	Compound Not Detected.					
9 Chloromethane	50	Compound Not Detected.					
10 Vinyl Chloride	62	Compound Not Detected.					
11 Bromomethane	94	Compound Not Detected.					
12 Chloroethane	64	Compound Not Detected.					
13 Trichlorofluoromethane	101	Compound Not Detected.					
17 1,1-Dichloroethene	96	Compound Not Detected.					
16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					
18 Acetone	43	6.631	6.632	(0.671)	5056	37.6877	1.5(a)
20 Carbon disulfide	76	Compound Not Detected.					

8-25-09
AMENDED DATA
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Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1371.d
Report Date: 25-Aug-2009 13:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	Compound Not Detected.					
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	Compound Not Detected.					
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).

AMENDED DATA

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1371.d
Report Date: 10-Jul-2009 18:38

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DH090709A71.b/0907002-1371.d

Date : 09-JUL-2009 22:37

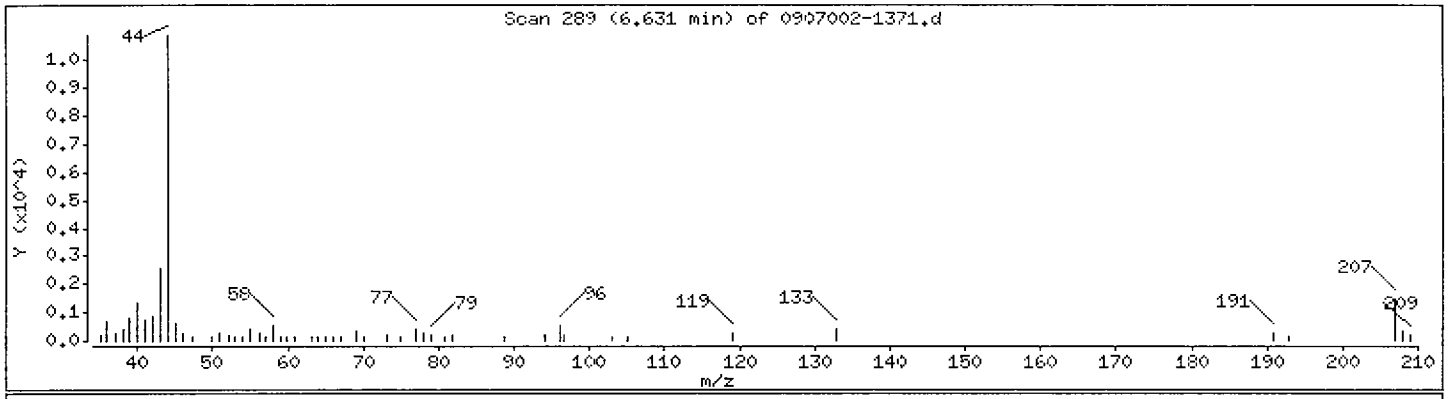
Client ID: YS07-TB01-070809 Instrument: 5972hp71.i

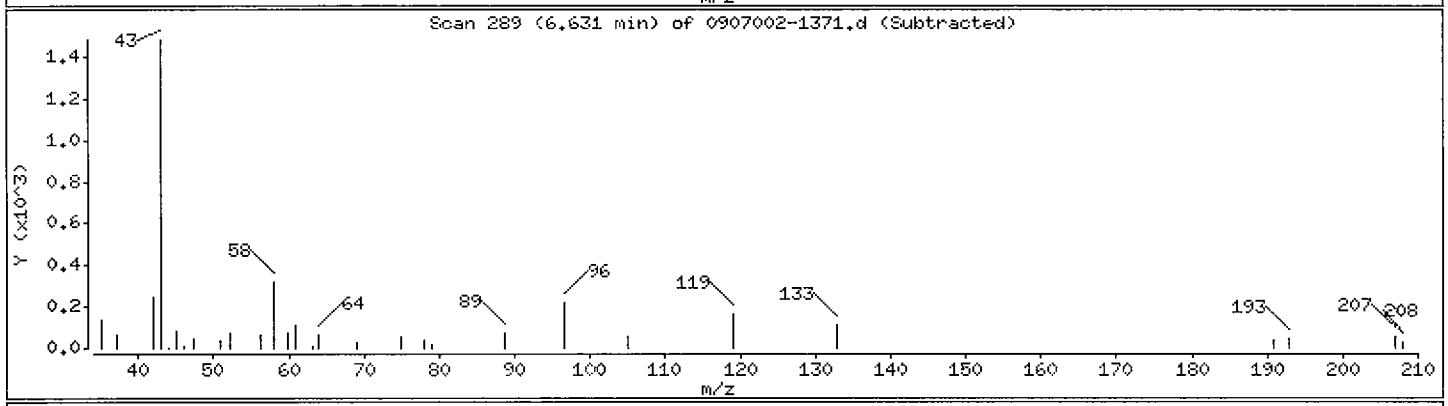
Sample Info: 0907002-13;JA0

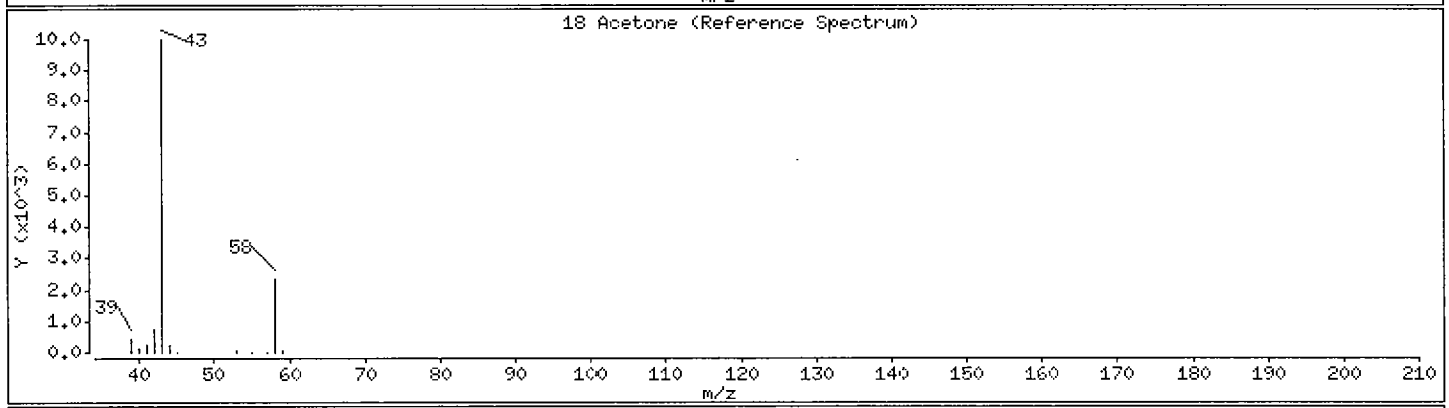
Purge Volume: 25.0 Operator: JA0

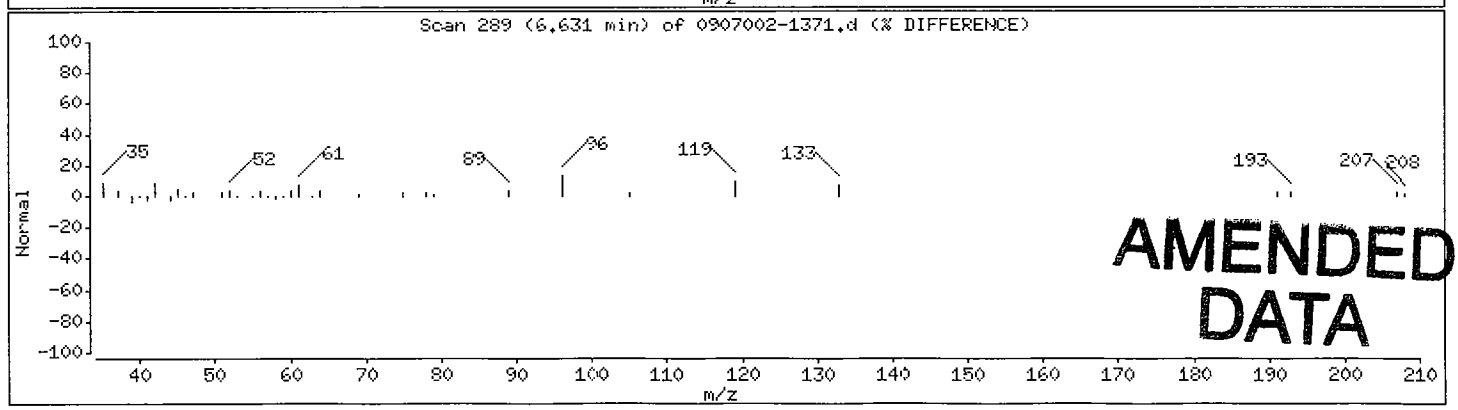
Column phase: SPB-624 Column diameter: 0.32

18 Acetone Concentration: 1.5 ug/L









AMENDED DATA

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3. Standards Data

a. Initial Calibration Data (Form VI VOA)

b. Continuing Calibration Data (Form VII VOA)

a. Initial Calibration Data
(Form VI VOA)

If more than one instrument is used, forms shall be arranged in order by instrument. Multiple initial calibrations from the same instrument shall be in chronological order. Within each initial calibration, the standards are in order by level, from lowest to highest.

(1) Reconstructed Ion Chromatograms and quantitation reports for the initial (five-point) calibration. Spectra not required.

(2) EICPs displaying each manual integration.

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date(s): 07/01/09 07/01/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1725 1946

LAB FILE ID: RF0.5: 9G01002-CALRF1: 9G01002-CAL27RF5: 9G01002-CAL3R
RF10: 9G01002-CAL4RF20: 9G01002-CAL5RF40: 9G01002-CAL6

COMPOUND	RF0.5	RF1	RF5	RF10	RF20	RF40
Dichlorodifluoromethane	0.45098	0.51282	0.48209	0.44920	0.45977	0.44762
Chloromethane	0.33545	0.36549	0.37073	0.35629	0.36540	0.38263
Vinyl Chloride	0.25629	0.28964	0.28420	0.26249	0.26551	0.26085
Bromomethane	8997	18310	119018	270138	560064	1075227
Chloroethane	0.10990	0.12617	0.11929	0.10914	0.10920	0.10861
Trichlorofluoromethane	0.42431	0.52189	0.46087	0.43379	0.44767	0.43668
1,1-Dichloroethene	0.23383	0.27550	0.26736	0.24781	0.24340	0.24178
Carbon disulfide	1.08264	1.24904	1.18975	1.09241	1.08234	1.10415
1,1,2-trichloro-1,2,2-triflu	0.18883	0.21193	0.18630	0.17597	0.16456	0.17132
Acetone	0.03363	0.03307	0.02670	0.02628	0.02440	0.02687
Methyl acetate	0.19164	0.21531	0.21872	0.19857	0.18586	0.20639
Methylene Chloride	32868	63274	250588	536847	989166	1834934
trans-1,2-Dichloroethene	0.27689	0.32400	0.29717	0.27383	0.27676	0.27520
Methyl-tert-butyl ether	0.39435	0.49460	0.44103	0.42081	0.40722	0.43671
1,1-Dichloroethane	0.52334	0.59220	0.55356	0.50265	0.51561	0.53023
cis-1,2-Dichloroethene	0.28355	0.31668	0.29933	0.27504	0.27769	0.27494
2-butanone	0.04276	0.05174	0.04621	0.04395	0.04255	0.04882
Chloroform	0.51288	0.59334	0.54938	0.51003	0.51954	0.54578
1,1,1-Trichloroethane	0.44384	0.51370	0.46719	0.43849	0.43662	0.46599
Carbon Tetrachloride	0.38985	0.45240	0.41015	0.38613	0.38135	0.41568
Benzene	1.01630	1.17329	1.10840	1.03278	1.03875	1.07266
1,2-Dichloroethane	0.25867	0.30632	0.27514	0.25654	0.24665	0.26846
Trichloroethene	0.25512	0.30484	0.28574	0.26581	0.27226	0.28328
1,2-Dichloropropane	0.24244	0.28053	0.25627	0.23252	0.22369	0.21136
Bromodichloromethane	0.32914	0.39156	0.36133	0.34214	0.34429	0.37069
cis-1,3-Dichloropropene	0.34362	0.42576	0.39360	0.37365	0.37098	0.39408
4-Methyl-2-pentanone	0.15130	0.19005	0.17654	0.16838	0.15766	0.17180
Toluene	0.99866	1.08122	1.00668	0.93951	0.92136	0.93599
trans-1,3-Dichloropropene	0.46065	0.53584	0.50733	0.46695	0.44683	0.45546
1,1,2-Trichloroethane	0.18373	0.21910	0.21174	0.19978	0.19449	0.20358
Tetrachloroethene	0.32097	0.37070	0.34186	0.32839	0.32471	0.34342
2-hexanone	0.10295	0.12814	0.11848	0.11385	0.10619	0.11364
Dibromochloromethane	0.28268	0.32729	0.30967	0.30362	0.29730	0.31731
1,2-Dibromoethane	0.20540	0.24158	0.22923	0.21812	0.21113	0.22196
Chlorobenzene	0.90119	1.02934	0.99157	0.93228	0.92010	0.94034
Ethylbenzene	0.51401	0.56713	0.54638	0.50675	0.49764	0.49602
m,p-Xylene	0.64035	0.71500	0.68312	0.63700	0.62778	0.61612
o-Xylene	0.58607	0.65366	0.63380	0.59629	0.58172	0.57253
Styrene	0.93420	1.05424	1.04601	0.99739	0.97347	0.96379
Bromoform	0.13401	0.16573	0.15999	0.15788	0.15451	0.16760
Isopropyl Benzene	1.70760	1.90272	1.84606	1.71884	1.66541	1.72727
1,1,2,2-Tetrachloroethane	0.52818	0.62684	0.57568	0.54158	0.51327	0.53718
1,3-Dichlorobenzene	1.52485	1.72712	1.65655	1.52210	1.53442	1.54997
1,4-Dichlorobenzene	1.50325	1.70643	1.63178	1.51477	1.48912	1.52796

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date(s): 07/01/09 07/01/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1725 1946

LAB FILE ID: RF0.5: 9G01002-CALRF1: 9G01002-CAL27RF5: 9G01002-CAL3R
RF10: 9G01002-CAL4RF20: 9G01002-CAL5RF40: 9G01002-CAL6

COMPOUND	RF0.5	RF1	RF5	RF10	RF20	RF40
1,2-Dichlorobenzene	1.21557	1.36078	1.31369	1.22831	1.21345	1.23455
1,2-Dibromo-3-Chloropropane	0.09552	0.09652	0.07981	0.07289	0.06935	0.07301
1,2,4-Trichlorobenzene	0.81369	0.96072	0.88768	0.78914	0.80226	0.81257
1,2-Dichloroethene (total)	0.28022	0.32034	0.29825	0.27444	0.27722	0.27507
Xylene (total)	0.58607	0.65366	0.63380	0.59629	0.58172	0.57253
Cyclohexane	0.41126	0.48274	0.42547	0.39767	0.37506	0.39898
Methylcyclohexane	0.46317	0.56015	0.48823	0.44846	0.40318	0.39153
Dibromofluoromethane	41885	75134	220304	493063	946355	1897052
1,2-Dichloroethane-d4	34533	62675	173912	389232	719990	1506890
Toluene-d8	139298	242580	734191	1561014	2698226	
Bromofluorobenzene	51992	89084	267298	569660	1080227	2172538

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date(s): 07/01/09 07/01/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1725 1946

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.46708133	5.524	15.000
Chloromethane	AVRG		0.36266535	4.378	15.000
Vinyl Chloride	AVRG		0.26983208	5.069	30.000
Bromomethane	LINR	0.06930498	6.47599064	0.9998809	0.9900000
Chloroethane	AVRG		0.11371841	6.438	15.000
Trichlorofluoromethane	AVRG		0.45420203	7.806	15.000
1,1-Dichloroethene	AVRG		0.25161283	6.442	30.000
Carbon disulfide	AVRG		1.13339028	6.147	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.18315099	9.162	15.000
Acetone	AVRG		0.02849264	13.574	15.000
Methyl acetate	AVRG		0.20275063	6.440	15.000
Methylene Chloride	LINR	-0.1289158	3.86592269	0.9996020	0.9900000
trans-1,2-Dichloroethene	AVRG		0.28730886	6.946	15.000
Methyl-tert-butyl ether	AVRG		0.43245580	8.128	15.000
1,1-Dichloroethane	AVRG		0.53626542	6.007	15.000
cis-1,2-Dichloroethene	AVRG		0.28787180	5.845	15.000
2-butanone	AVRG		0.04600564	7.992	15.000
Chloroform	AVRG		0.53849334	5.875	30.000
1,1,1-Trichloroethane	AVRG		0.46097292	6.314	15.000
Carbon Tetrachloride	AVRG		0.40592645	6.543	15.000
Benzene	AVRG		1.07369734	5.481	15.000
1,2-Dichloroethane	AVRG		0.26862758	7.794	15.000
Trichloroethene	AVRG		0.27784211	6.260	15.000
1,2-Dichloropropane	AVRG		0.24113722	10.239	30.000
Bromodichloromethane	AVRG		0.35652425	6.344	15.000
cis-1,3-Dichloropropene	AVRG		0.38361742	7.228	15.000
4-Methyl-2-pentanone	AVRG		0.16928751	8.139	15.000
Toluene	AVRG		0.98056953	6.173	30.000
trans-1,3-Dichloropropene	AVRG		0.47884551	7.297	15.000
1,1,2-Trichloroethane	AVRG		0.20206939	6.199	15.000
Tetrachloroethene	AVRG		0.33834092	5.404	15.000
2-hexanone	AVRG		0.11387851	7.885	15.000
Dibromochloromethane	AVRG		0.30631119	5.097	15.000
1,2-Dibromoethane	AVRG		0.22123848	5.862	15.000
Chlorobenzene	AVRG		0.95246995	5.072	15.000
Ethylbenzene	AVRG		0.52132228	5.555	30.000
m,p-Xylene	AVRG		0.65322997	5.794	15.000
o-Xylene	AVRG		0.60401191	5.350	15.000
Styrene	AVRG		0.99485057	4.768	15.000
Bromoform	AVRG		0.15661938	7.725	15.000
Isopropyl Benzene	AVRG		1.76131640	5.217	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.55378769	7.462	15.000
1,3-Dichlorobenzene	AVRG		1.58583546	5.400	15.000
1,4-Dichlorobenzene	AVRG		1.56221749	5.572	15.000

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date(s): 07/01/09 07/01/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1725 1946

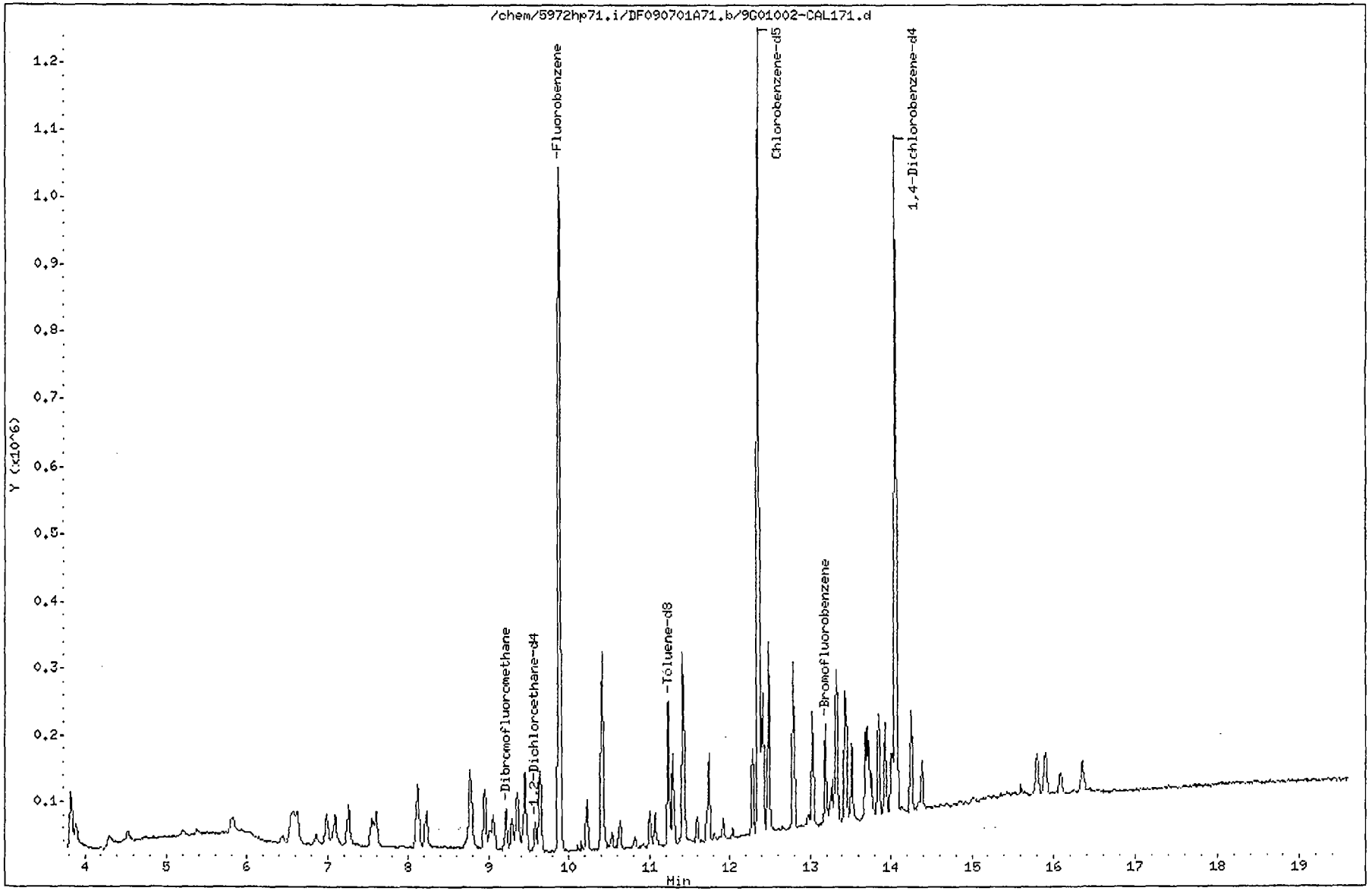
COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
1,2-Dichlorobenzene	AVRG		1.26105720	4.866	15.000	
1,2-Dibromo-3-Chloropropane	AVRG		0.08118384	14.761	15.000	
1,2,4-Trichlorobenzene	AVRG		0.84434603	7.890	15.000	
1,2-Dichloroethene (total)	AVRG		0.28759033	6.369	15.000	
Xylene (total)	AVRG		0.60401191	5.350	15.000	
Cyclohexane	AVRG		0.41519510	8.924	15.000	
Methylcyclohexane	AVRG		0.45912025	13.385	15.000	
Dibromofluoromethane	LINR	-0.0311579	3.75439417	0.9984659	0.9900000	
1,2-Dichloroethane-d4	LINR	-0.0158139	4.74599626	0.9965026	0.9900000	
Toluene-d8	LINR	-0.2366975	0.91750561	0.9950658	0.9900000	<-
Bromofluorobenzene	LINR	-0.1616644	1.07817749	0.9998225	0.9900000	

Average %RSD test result.

Calculate Average %RSD: 6.965442181
Maximum Average %RSD: 15.00000000

Note: Passes Average %RSD Test.

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Date : 01-JUL-2009 17:53
Client ID: VSTD0.5
Instrument: 5972hp71.i
Sample Info: 9G01002-CAL1:JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Report Date: 02-Jul-2009 14:51

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Lab Smp Id: 9G01002-CAL1 Client Smp ID: VSTD0.5
Inj Date : 01-JUL-2009 17:53
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G01002-CAL1:JAO
Misc Info : VSTD0.5
Comment :
Method : /chem/5972hp71.i/DF090701A71.b/W8260-B-25MLv11.m
Meth Date : 02-Jul-2009 14:51 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 17:53 Cal File: 9G01002-CAL171.d
Als bottle: 5 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
*	1 Fluorobenzene	96	9.878	9.878	(1.000)	896250	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.361	(1.000)	551892	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.055	14.055	(1.000)	249480	125.000	
$	4 Dibromofluoromethane	113	9.218	9.218	(0.933)	41885	12.5000	13
$	5 1,2-Dichloroethane-d4	65	9.572	9.573	(0.969)	34533	12.5000	13
$	6 Toluene-d8	98	11.238	11.238	(0.909)	139298	12.5000	13
$	7 Bromofluorobenzene	95	13.188	13.188	(0.938)	51992	12.5000	13
	8 Dichlorodifluoromethane	85	3.898	3.898	(0.395)	40419	12.5000	12
	9 Chloromethane	50	4.311	4.302	(0.436)	30065	12.5000	12
	10 Vinyl Chloride	62	4.538	4.538	(0.459)	22970	12.5000	12
	11 Bromomethane	94	5.208	5.208	(0.527)	8997	12.5000	13
	12 Chloroethane	64	5.385	5.386	(0.545)	9850	12.5000	12
	13 Trichlorofluoromethane	101	5.819	5.819	(0.589)	38029	12.5000	11
	14 Acrolein	56	6.440	6.440	(0.652)	15207	125.000	110
	15 1,1,1-trichloro-2,2,2-trifluo	117	6.538	6.538	(0.662)	13925	12.5000	12
	16 1,1,2-trichloro-1,2,2-trifluo	85	6.577	6.578	(0.666)	16924	12.5000	12

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Report Date: 02-Jul-2009 14:51

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)	
17 1,1-Dichloroethene	96	6.627	6.627	(0.671)	20957	12.5000	11	
18 Acetone	43	6.637	6.627	(0.672)	15072	62.5000	63	
19 Iodomethane	142	6.863	6.863	(0.695)	24617	12.5000	11	
20 Carbon disulfide	76	6.981	6.982	(0.707)	97032	12.5000	12	
22 3-Chloropropene	39	7.090	7.090	(0.718)	29569	12.5000	13	
23 Acetonitrile	41	7.090	7.090	(0.718)	42699	12.5000	13	
24 Methyl acetate	43	7.060	7.060	(0.715)	17176	12.5000	12	
25 Methylene Chloride	84	7.257	7.257	(0.735)	32868	12.5000	13	
26 Acrylonitrile	53	7.543	7.533	(0.764)	25901	125.000	110	
28 trans-1,2-Dichloroethene	96	7.602	7.602	(0.770)	24816	12.5000	12	
27 Methyl-tert-butyl ether	73	7.553	7.553	(0.765)	35344	12.5000	11	
30 Isopropyl ether	45	8.105	8.105	(0.820)	80766	12.5000	12	
31 Vinyl acetate	43	8.105	8.105	(0.820)	48066	25.0000	23	
32 1,1-Dichloroethane	63	8.124	8.124	(0.822)	46904	12.5000	12	
33 Chloroprene	53	8.223	8.223	(0.832)	41137	12.5000	12	
34 2-butanone	43	8.706	8.706	(0.881)	19160	62.5000	57	
35 2,2-Dichloropropane	77	8.765	8.765	(0.887)	41348	12.5000	12	
36 cis-1,2-Dichloroethene	96	8.765	8.765	(0.887)	25413	12.5000	12	
37 Propionitrile	54	8.784	8.785	(0.889)	46379	625.000	550	
38 Methacrylonitrile	41	8.952	8.952	(0.906)	58461	125.000	110	
39 Bromochloromethane	128	9.011	9.011	(0.912)	7534	12.5000	11	
40 Chloroform	83	9.060	9.051	(0.917)	45967	12.5000	12	
42 1,1,1-Trichloroethane	97	9.297	9.287	(0.941)	39779	12.5000	12	
43 Cyclohexane	84	9.356	9.356	(0.947)	36859	12.5000	12	
44 1,1-dichloropropene	75	9.444	9.445	(0.956)	39673	12.5000	12	
45 Isobutyl alcohol	43	9.395	9.386	(0.951)	13793	625.000	540 (M)	
46 Carbon Tetrachloride	117	9.454	9.454	(0.957)	34940	12.5000	12	
47 Benzene	78	9.641	9.642	(0.976)	91086	12.5000	12	
48 1,2-Dichloroethane	62	9.651	9.652	(0.977)	23183	12.5000	11	
49 Trichloroethene	130	10.223	10.223	(1.035)	22865	12.5000	11	
50 Methylcyclohexane	83	10.410	10.410	(1.054)	41512	12.5000	11	
51 1,2-Dichloropropane	63	10.420	10.420	(1.055)	21729	12.5000	12	
52 Methylmethacrylate	69	10.410	10.410	(1.054)	65210	125.000	110	
53 1,4-dioxane	88	10.489	10.489	(1.062)	3319	625.000	560	
54 Dibromomethane	174	10.538	10.538	(1.067)	7477	12.5000	11	
55 Bromodichloromethane	83	10.637	10.627	(1.077)	29499	12.5000	11	
56 2-chloroethyl vinyl ether	63	10.824	10.824	(1.096)	7968	125.000	110	
57 cis-1,3-Dichloropropene	75	11.001	11.001	(1.114)	30797	12.5000	11	
58 4-Methyl-2-pentanone	43	11.070	11.060	(0.896)	41752	62.5000	55 (M)	
59 Toluene	92	11.287	11.287	(0.913)	55115	12.5000	12	
60 Ethylmethacrylate	69	11.415	11.415	(0.923)	129225	125.000	110	
61 trans-1,3-Dichloropropene	75	11.435	11.435	(0.925)	25423	12.5000	12	
62 1,1,2-Trichloroethane	97	11.592	11.592	(0.938)	10140	12.5000	11	
63 2-hexanone	43	11.710	11.711	(0.947)	28410	62.5000	56	
64 1,3-Dichloropropane	76	11.730	11.730	(0.949)	22052	12.5000	12	
65 Tetrachloroethene	164	11.740	11.740	(0.950)	17714	12.5000	12	
66 Dibromochloromethane	129	11.917	11.918	(0.964)	15601	12.5000	12	

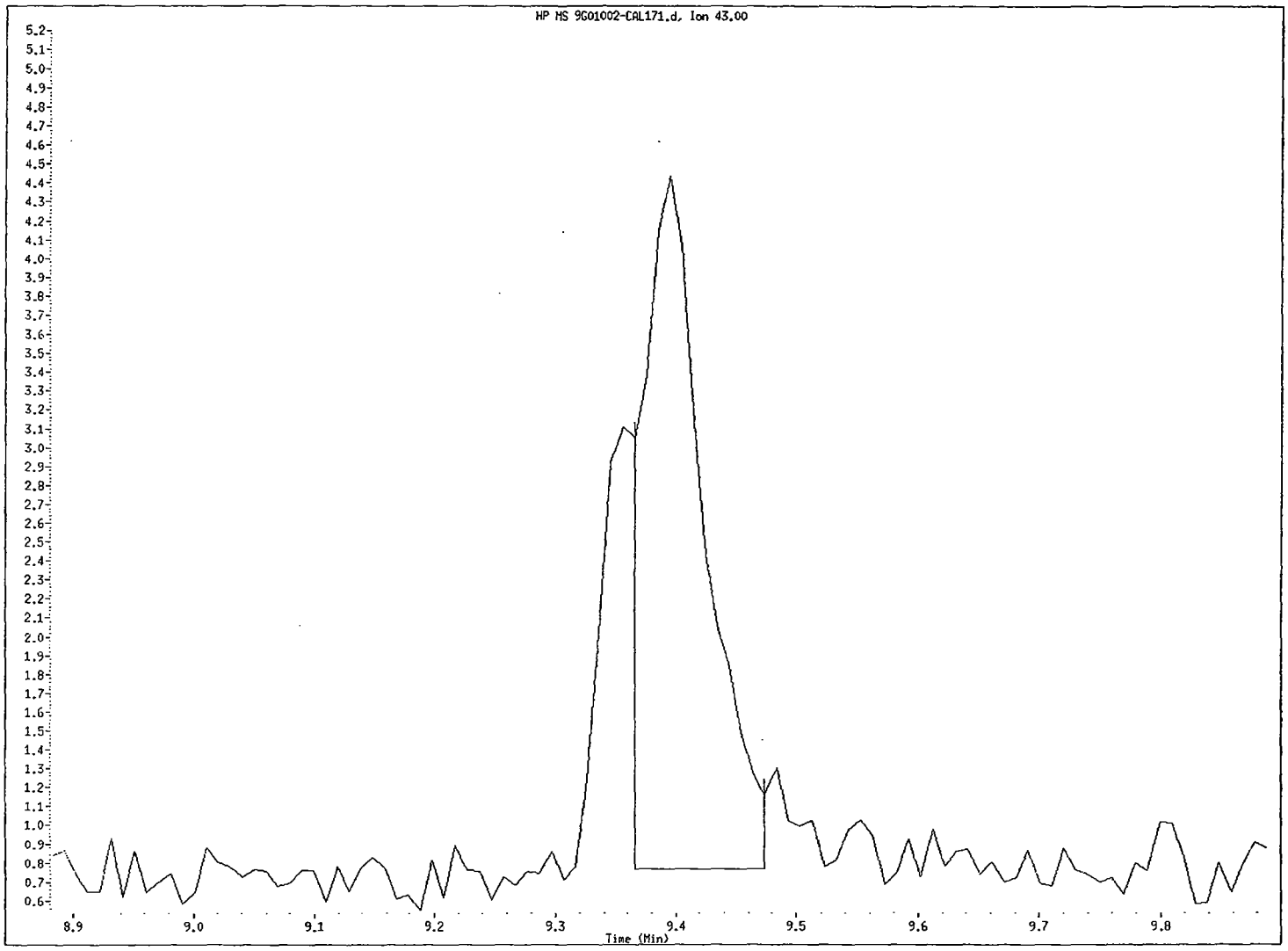
Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Report Date: 02-Jul-2009 14:51

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
67	1,2-Dibromoethane	107	12.036	12.036	(0.974)	11336	12.5000	11
68	1-Chlorohexane	55	12.282	12.282	(0.994)	26720	12.5000	12
69	Chlorobenzene	112	12.380	12.381	(1.002)	49736	12.5000	12
70	Ethylbenzene	106	12.410	12.410	(1.004)	28368	12.5000	12
71	1,1,1,2-Tetrachloroethane	131	12.420	12.420	(1.005)	18197	12.5000	12
72	m,p-Xylene	106	12.489	12.489	(1.010)	70681	25.0000	24
73	o-Xylene	106	12.794	12.794	(1.035)	32345	12.5000	12
74	Styrene	104	12.794	12.794	(1.035)	51558	12.5000	12
75	Bromoform	173	12.981	12.982	(1.050)	7396	12.5000	11
76	Isopropyl Benzene	105	13.031	13.031	(1.054)	94241	12.5000	12
77	1,1,2,2-Tetrachloroethane	83	13.238	13.238	(0.942)	13177	12.5000	11
79	1,2,3-Trichloropropane	110	13.297	13.297	(1.076)	3245	12.5000	12
78	trans-1,4-dichloro-2-butene	53	13.267	13.267	(1.073)	13109	50.0000	47
80	n-Propyl Benzene	91	13.326	13.326	(0.948)	128512	12.5000	12
81	Bromobenzene	156	13.336	13.336	(1.079)	18121	12.5000	12
82	1,3,5-Trimethyl Benzene	105	13.425	13.425	(0.955)	74175	12.5000	12
83	2-Chlorotoluene	126	13.444	13.445	(0.957)	21310	12.5000	12
84	4-Chlorotoluene	126	13.513	13.514	(0.961)	19752	12.5000	12
85	tert-Butyl Benzene	119	13.691	13.691	(0.974)	69568	12.5000	12
86	1,2,4-Trimethyl Benzene	105	13.720	13.720	(0.976)	71900	12.5000	12
87	Pentachloroethane	167	13.760	13.760	(0.979)	11294	12.5000	12
88	sec-Butyl Benzene	105	13.848	13.849	(0.985)	106226	12.5000	12
89	p-Isopropyl Toluene	119	13.927	13.927	(0.991)	80489	12.5000	12
90	1,3-Dichlorobenzene	146	14.016	14.006	(0.997)	38042	12.5000	12
91	1,4-Dichlorobenzene	146	14.075	14.075	(1.001)	37503	12.5000	12
92	n-Butyl Benzene	91	14.252	14.243	(1.014)	93729	12.5000	12
93	1,2-Dichlorobenzene	146	14.390	14.390	(1.024)	30326	12.5000	12
94	1,2-Dibromo-3-Chloropropane	75	15.011	15.001	(1.068)	2383	12.5000	12
95	1,2,4-Trichlorobenzene	180	15.799	15.799	(1.124)	20300	12.5000	11
96	Hexachlorobutadiene	225	15.898	15.898	(1.131)	12376	12.5000	12
97	Naphthalene	128	16.085	16.085	(1.144)	29988	12.5000	12
98	1,2,3-Trichlorobenzene	180	16.351	16.351	(1.163)	15637	12.5000	12
M 99	1,2-Dichloroethene (total)	96				50229	25.0000	23
M 100	Xylene (total)	106				103026	12.5000	38

QC Flag Legend

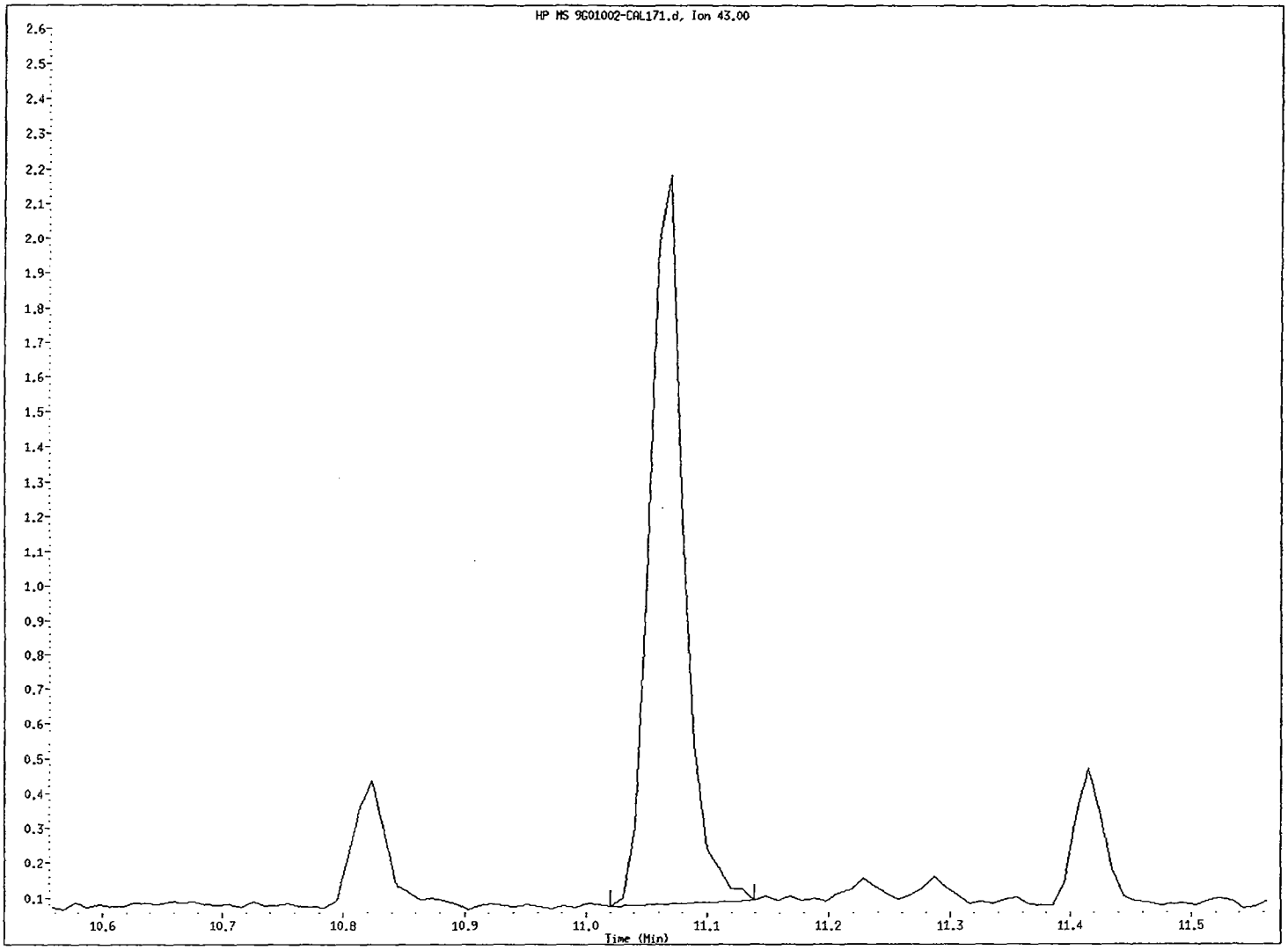
M - Compound response manually integrated.

Isobutyl alcohol CAS Number 78-83-1 Area = 13793 Manually integrated



File name: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Client ID: VSTD0.5
Instrument ID: 5972hp71.i
Injection Date and Time: 01-JUL-2009 17:53
Retention Time: 9.40
Operator ID: JAO

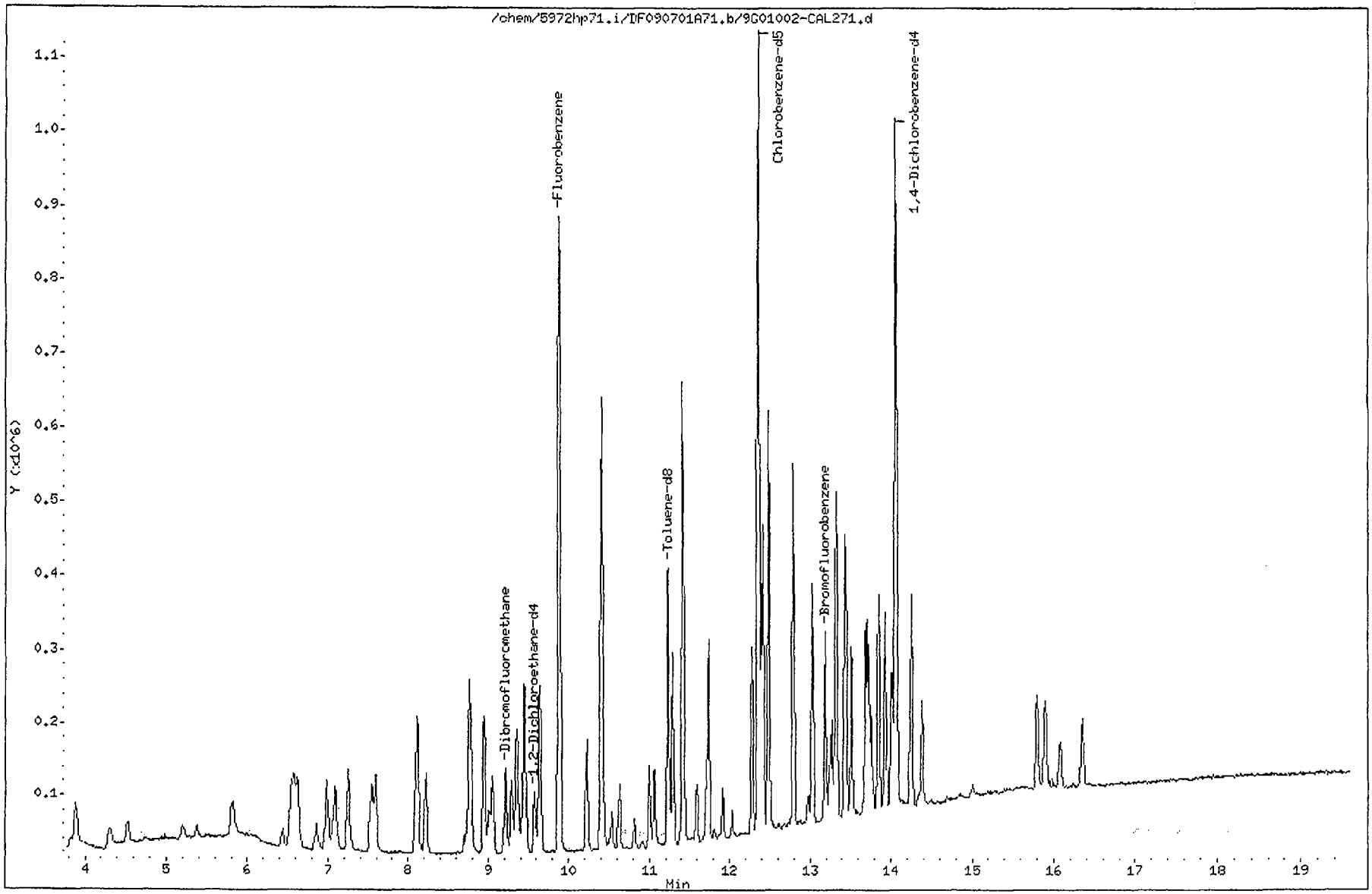
4-Methyl-2-pentanone CAS Number 108-10-1 Area = 41752 Manually integrated



File name: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL171.d
Client ID: VSTD0.5
Instrument ID: 5972hp71.i
Injection Date and Time: 01-JUL-2009 17:53
Retention Time: 11.07
Operator ID: JAO

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL271.d
Date : 01-JUL-2009 17:25
Client ID: VSTD001
Sample Info: 9G01002-CAL2:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL271.d
Report Date: 02-Jul-2009 14:51

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090701A71.b/9G01002-CAL271.d
Lab Smp Id: 9G01002-CAL2 Client Smp ID: VSTD001
Inj Date : 01-JUL-2009 17:25
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G01002-CAL2:JAO
Misc Info : VSTD001
Comment :
Method : /chem/5972hp71.i/DF090701A71.b/W8260-B-25MLv11.m
Meth Date : 02-Jul-2009 14:51 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 17:25 Cal File: 9G01002-CAL271.d
Als bottle: 4 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
*	1 Fluorobenzene	96	9.878	9.878	(1.000)	761607	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.361	(1.000)	497590	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.056	14.055	(1.000)	228869	125.000	
$	4 Dibromofluoromethane	113	9.218	9.218	(0.933)	75134	25.0000	25
$	5 1,2-Dichloroethane-d4	65	9.573	9.573	(0.969)	62675	25.0000	25
$	6 Toluene-d8	98	11.238	11.238	(0.909)	242580	25.0000	25
$	7 Bromofluorobenzene	95	13.189	13.188	(0.938)	89084	25.0000	25
	8 Dichlorodifluoromethane	85	3.898	3.898	(0.395)	78113	25.0000	25
	9 Chloromethane	50	4.312	4.302	(0.436)	55672	25.0000	25
	10 Vinyl Chloride	62	4.529	4.538	(0.458)	44119	25.0000	25
	11 Bromomethane	94	5.198	5.208	(0.526)	18310	25.0000	25
	12 Chloroethane	64	5.386	5.386	(0.545)	19218	25.0000	25
	13 Trichlorofluoromethane	101	5.819	5.819	(0.589)	79495	25.0000	25
	14 Acrolein	56	6.440	6.440	(0.652)	31074	250.000	250
	15 1,1,1-trichloro-2,2,2-trifluo	117	6.538	6.538	(0.662)	25918	25.0000	25
	16 1,1,2-trichloro-1,2,2-trifluo	85	6.578	6.578	(0.666)	32282	25.0000	25

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL271.d
Report Date: 02-Jul-2009 14:51

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
17 1,1-Dichloroethene	96	6.627	6.627	(0.671)	41965	25.0000	25
18 Acetone	43	6.637	6.627	(0.672)	25184	125.000	130
19 Iodomethane	142	6.864	6.863	(0.695)	55304	25.0000	25
20 Carbon disulfide	76	6.982	6.982	(0.707)	190256	25.0000	25
22 3-Chloropropene	39	7.090	7.090	(0.718)	55158	25.0000	25
23 Acetonitrile	41	7.090	7.090	(0.718)	83912	25.0000	25
24 Methyl acetate	43	7.061	7.060	(0.715)	32797	25.0000	25
25 Methylene Chloride	84	7.258	7.257	(0.735)	63274	25.0000	25
26 Acrylonitrile	53	7.533	7.533	(0.763)	55354	250.000	250
28 trans-1,2-Dichloroethene	96	7.593	7.602	(0.769)	49352	25.0000	25
27 Methyl-tert-butyl ether	73	7.553	7.553	(0.765)	75339	25.0000	25
30 Isopropyl ether	45	8.115	8.105	(0.821)	159347	25.0000	25
31 Vinyl acetate	43	8.105	8.105	(0.820)	94053	50.0000	50
32 1,1-Dichloroethane	63	8.125	8.124	(0.822)	90205	25.0000	25
33 Chloroprene	53	8.223	8.223	(0.832)	79929	25.0000	25
34 2-butanone	43	8.706	8.706	(0.881)	39407	125.000	130
35 2,2-Dichloropropane	77	8.765	8.765	(0.887)	79800	25.0000	25
36 cis-1,2-Dichloroethene	96	8.765	8.765	(0.887)	48237	25.0000	25
37 Propionitrile	54	8.785	8.785	(0.889)	100647	1250.00	1300
38 Methacrylonitrile	41	8.952	8.952	(0.906)	127941	250.000	250
39 Bromochloromethane	128	9.011	9.011	(0.912)	15824	25.0000	25
40 Chloroform	83	9.061	9.051	(0.917)	90379	25.0000	25
42 1,1,1-Trichloroethane	97	9.297	9.287	(0.941)	78247	25.0000	25
43 Cyclohexane	84	9.356	9.356	(0.947)	73531	25.0000	25
44 1,1-dichloropropene	75	9.445	9.445	(0.956)	77701	25.0000	25
45 Isobutyl alcohol	43	9.386	9.386	(0.950)	30554	1250.00	1300 (M)
46 Carbon Tetrachloride	117	9.455	9.454	(0.957)	68911	25.0000	25
47 Benzene	78	9.642	9.642	(0.976)	178717	25.0000	25
48 1,2-Dichloroethane	62	9.652	9.652	(0.977)	46659	25.0000	25
49 Trichloroethene	130	10.223	10.223	(1.035)	46433	25.0000	25
50 Methylcyclohexane	83	10.410	10.410	(1.054)	85323	25.0000	25
51 1,2-Dichloropropane	63	10.420	10.420	(1.055)	42731	25.0000	25
52 Methylmethacrylate	69	10.410	10.410	(1.054)	144319	250.000	250
53 1,4-dioxane	88	10.489	10.489	(1.062)	6921	1250.00	1300
54 Dibromomethane	174	10.538	10.538	(1.067)	16196	25.0000	25
55 Bromodichloromethane	83	10.627	10.627	(1.076)	59643	25.0000	25
56 2-chloroethyl vinyl ether	63	10.824	10.824	(1.096)	16482	250.000	250
57 cis-1,3-Dichloropropene	75	11.001	11.001	(1.114)	64853	25.0000	25
58 4-Methyl-2-pentanone	43	11.070	11.060	(0.896)	94565	125.000	130
59 Toluene	92	11.287	11.287	(0.913)	107601	25.0000	25
60 Ethylmethacrylate	69	11.415	11.415	(0.923)	283358	250.000	250
61 trans-1,3-Dichloropropene	75	11.435	11.435	(0.925)	53326	25.0000	25
62 1,1,2-Trichloroethane	97	11.593	11.592	(0.938)	21804	25.0000	25
63 2-hexanone	43	11.711	11.711	(0.947)	63763	125.000	130
64 1,3-Dichloropropane	76	11.740	11.730	(0.950)	45625	25.0000	25
65 Tetrachloroethene	164	11.740	11.740	(0.950)	36891	25.0000	25
66 Dibromochloromethane	129	11.918	11.918	(0.964)	32571	25.0000	25

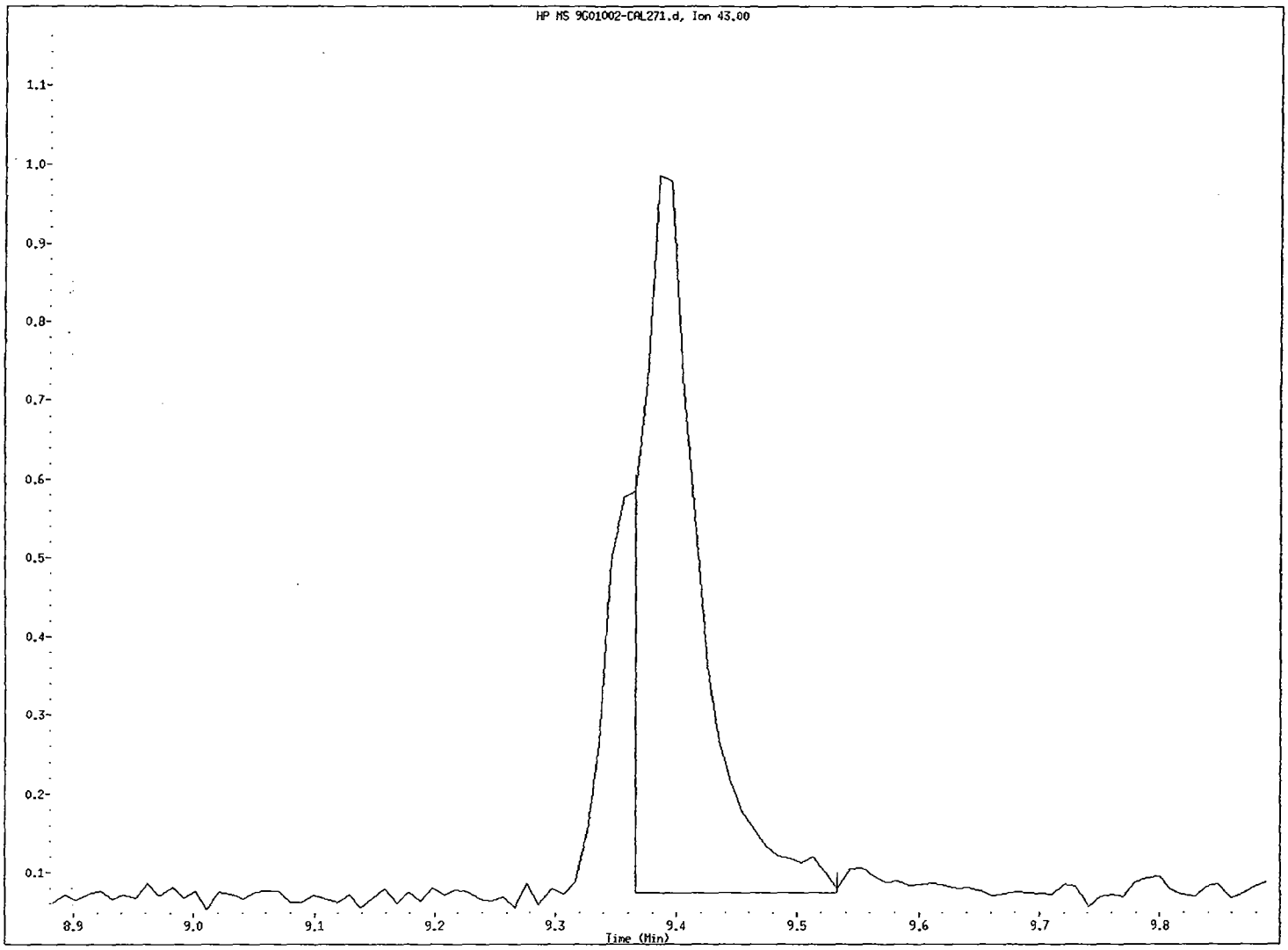
Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL271.d
Report Date: 02-Jul-2009 14:51

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	67 1,2-Dibromoethane	107	12.036	12.036	(0.974)	24042	25.0000	25
	68 1-Chlorohexane	55	12.282	12.282	(0.994)	52019	25.0000	25
	69 Chlorobenzene	112	12.381	12.381	(1.002)	102438	25.0000	25
	70 Ethylbenzene	106	12.410	12.410	(1.004)	56440	25.0000	25
	71 1,1,1,2-Tetrachloroethane	131	12.420	12.420	(1.005)	34931	25.0000	25
	72 m,p-Xylene	106	12.489	12.489	(1.010)	142310	50.0000	50
	73 o-Xylene	106	12.794	12.794	(1.035)	65051	25.0000	25
	74 Styrene	104	12.794	12.794	(1.035)	104916	25.0000	25
	75 Bromoform	173	12.982	12.982	(1.050)	16493	25.0000	25
	76 Isopropyl Benzene	105	13.031	13.031	(1.054)	189355	25.0000	25
	77 1,1,2,2-Tetrachloroethane	83	13.238	13.238	(0.942)	28693	25.0000	25
	79 1,2,3-Trichloropropane	110	13.297	13.297	(1.076)	6585	25.0000	25
	78 trans-1,4-dichloro-2-butene	53	13.267	13.267	(1.073)	26570	100.000	100
	80 n-Propyl Benzene	91	13.326	13.326	(0.948)	254355	25.0000	25
	81 Bromobenzene	156	13.336	13.336	(1.079)	36802	25.0000	25
	82 1,3,5-Trimethyl Benzene	105	13.425	13.425	(0.955)	149194	25.0000	25
	83 2-Chlorotoluene	126	13.445	13.445	(0.957)	40715	25.0000	25
	84 4-Chlorotoluene	126	13.524	13.514	(0.962)	41475	25.0000	25
	85 tert-Butyl Benzene	119	13.691	13.691	(0.974)	140959	25.0000	25
	86 1,2,4-Trimethyl Benzene	105	13.721	13.720	(0.976)	140467	25.0000	25
	87 Pentachloroethane	167	13.760	13.760	(0.979)	23698	25.0000	25
	88 sec-Butyl Benzene	105	13.849	13.849	(0.985)	210330	25.0000	25
	89 p-Isopropyl Toluene	119	13.928	13.927	(0.991)	160651	25.0000	25
	90 1,3-Dichlorobenzene	146	14.016	14.006	(0.997)	79057	25.0000	25
	91 1,4-Dichlorobenzene	146	14.075	14.075	(1.001)	78110	25.0000	25
	92 n-Butyl Benzene	91	14.253	14.243	(1.014)	184975	25.0000	25
	93 1,2-Dichlorobenzene	146	14.391	14.390	(1.024)	62288	25.0000	25
	94 1,2-Dibromo-3-Chloropropane	75	15.011	15.001	(1.068)	4418	25.0000	25
	95 1,2,4-Trichlorobenzene	180	15.799	15.799	(1.124)	43976	25.0000	25
	96 Hexachlorobutadiene	225	15.898	15.898	(1.131)	25625	25.0000	25
	97 Naphthalene	128	16.085	16.085	(1.144)	63885	25.0000	25
	98 1,2,3-Trichlorobenzene	180	16.351	16.351	(1.163)	32954	25.0000	25
M	99 1,2-Dichloroethene (total)	96				97589	50.0000	50
M	100 Xylene (total)	106				207361	25.0000	80

QC Flag Legend

M - Compound response manually integrated.

Isobutyl alcohol CAS Number 78-83-1 Area = 30554 Manually integrated



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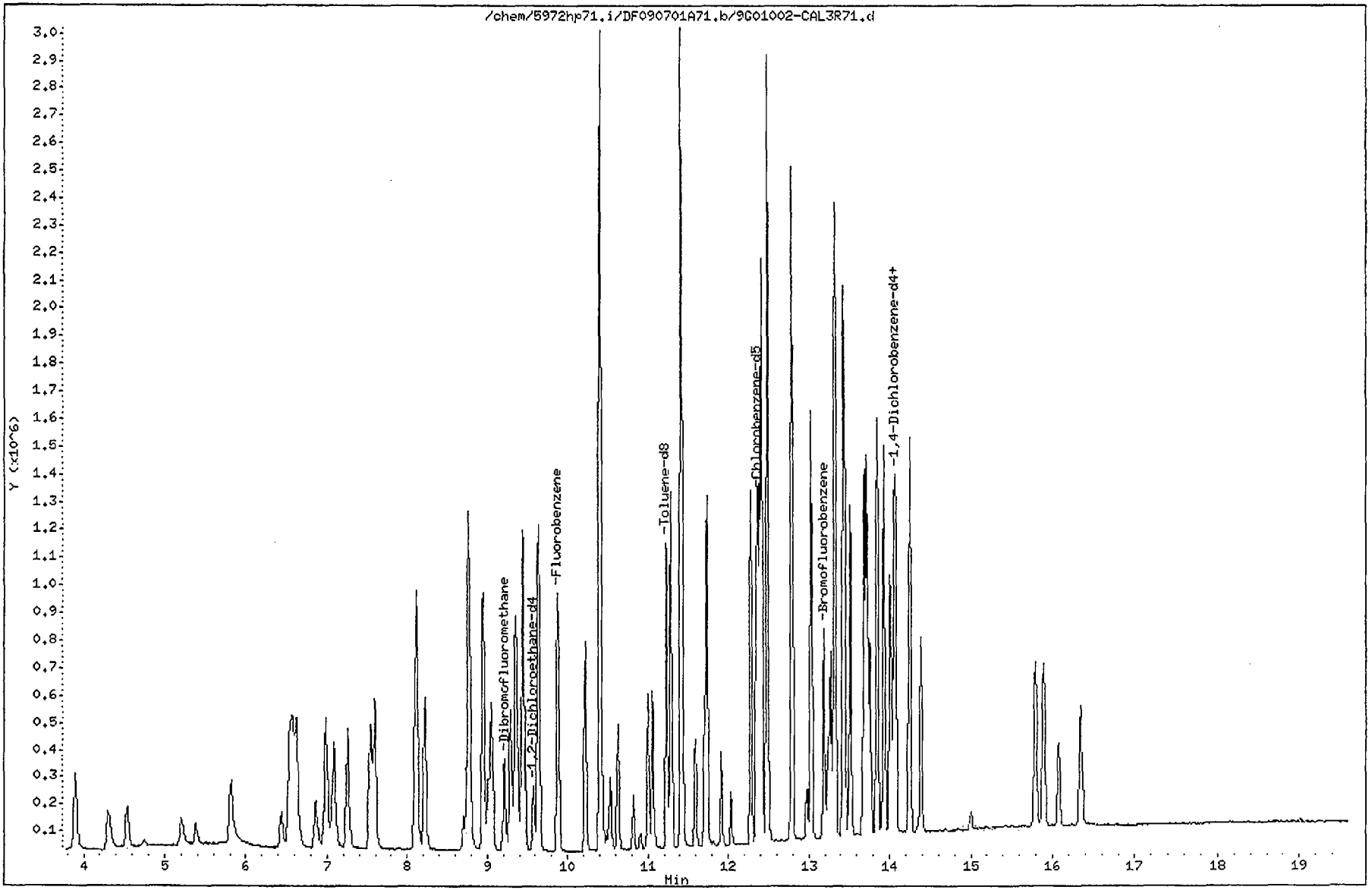
Client ID: VSTD001
Instrument ID: 5972hp71.i
Injection Date and Time: 01-JUL-2009 17:25
Retention Time: 9.39
Operator ID: JAO

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL3R71.d
Date : 01-JUL-2009 19:46
Client ID: VSTD005
Instrument: 5972hp71.i
Sample Info: 9G01002-CAL3:JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL3R71.d
Report Date: 02-Jul-2009 14:56

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090701A71.b/9G01002-CAL3R71.d
Lab Smp Id: 9G01002-CAL3 Client Smp ID: VSTD005
Inj Date : 01-JUL-2009 19:46
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G01002-CAL3:JAO
Misc Info : VSTD005
Comment :
Method : /chem/5972hp71.i/DF090701A71.b/W8260-B-25MLv11.m
Meth Date : 02-Jul-2009 14:56 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 19:46 Cal File: 9G01002-CAL3R71.d
Als bottle: 9 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
*	1 Fluorobenzene	96	9.878	9.878	(1.000)	840717	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.361	(1.000)	533051	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.055	14.055	(1.000)	250376	125.000	
$	4 Dibromofluoromethane	113	9.218	9.218	(0.933)	220304	125.000	120
$	5 1,2-Dichloroethane-d4	65	9.573	9.573	(0.969)	173912	125.000	120
$	6 Toluene-d8	98	11.238	11.238	(0.909)	734191	125.000	130
$	7 Bromofluorobenzene	95	13.188	13.188	(0.938)	267298	125.000	120
	8 Dichlorodifluoromethane	85	3.898	3.898	(0.395)	405305	125.000	130
	9 Chloromethane	50	4.302	4.302	(0.435)	311680	125.000	130
	10 Vinyl Chloride	62	4.538	4.538	(0.459)	238932	125.000	130
	11 Bromomethane	94	5.208	5.208	(0.527)	119018	125.000	120
	12 Chloroethane	64	5.386	5.386	(0.545)	100289	125.000	130
	13 Trichlorofluoromethane	101	5.819	5.819	(0.589)	387459	125.000	130
	14 Acrolein	56	6.440	6.440	(0.652)	166660	1250.00	1300
	15 1,1,1-trichloro-2,2,2-trifluo	117	6.538	6.538	(0.662)	131600	125.000	130

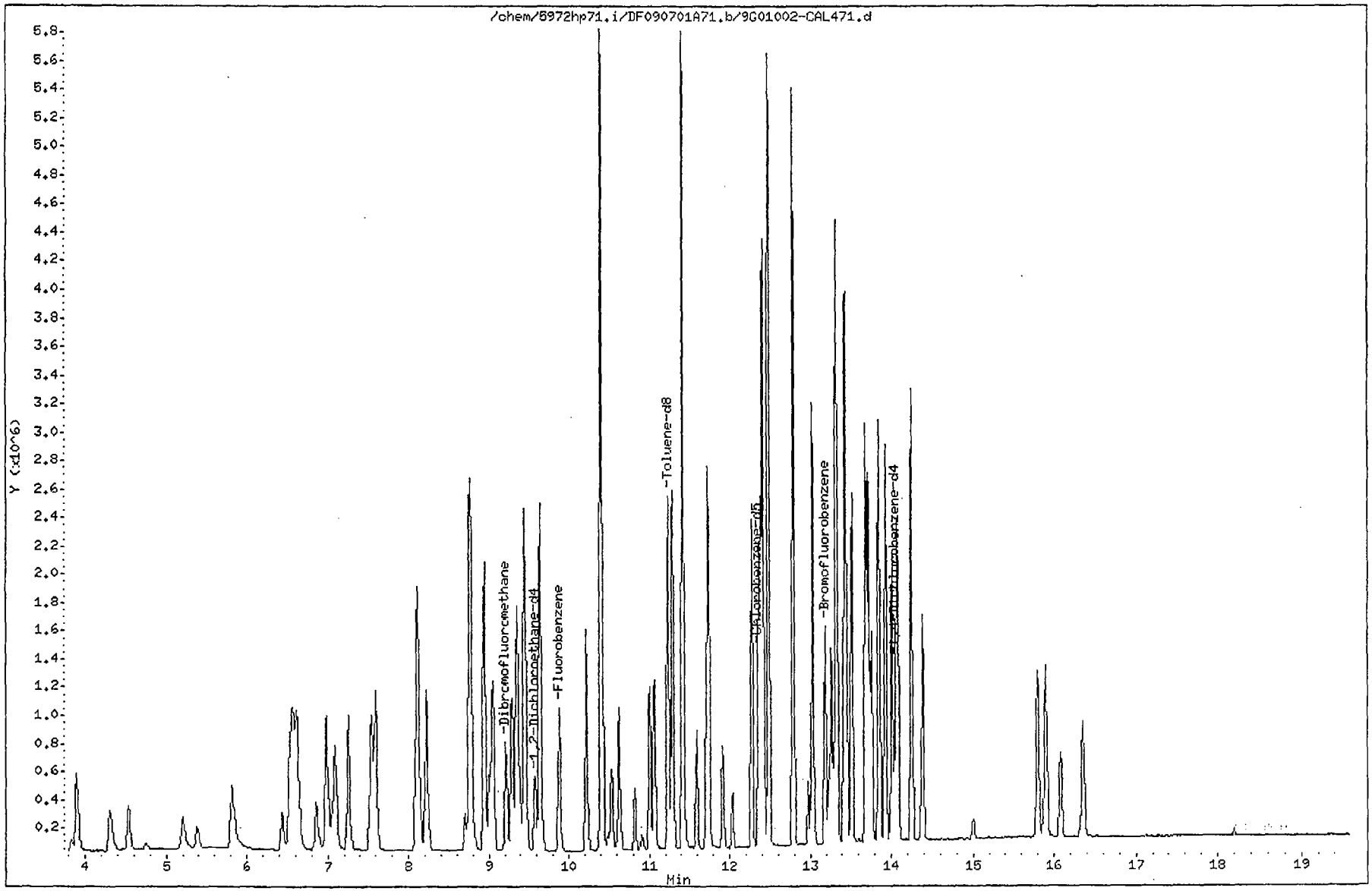
Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL3R71.d
Report Date: 02-Jul-2009 14:56

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
16 1,1,2-trichloro-1,2,2-trifluo	85	6.578	6.578	(0.666)	156622	125.000	130
17 1,1-Dichloroethene	96	6.627	6.627	(0.671)	224772	125.000	130
18 Acetone	43	6.627	6.627	(0.671)	112226	625.000	590
19 Iodomethane	142	6.863	6.863	(0.695)	298065	125.000	140
20 Carbon disulfide	76	6.982	6.982	(0.707)	1000247	125.000	130
22 3-Chloropropene	39	7.090	7.090	(0.718)	240353	125.000	140
23 Acetonitrile	41	7.090	7.090	(0.718)	362935	125.000	140
24 Methyl acetate	43	7.060	7.060	(0.715)	183885	125.000	130
25 Methylene Chloride	84	7.257	7.257	(0.735)	250588	125.000	130
26 Acrylonitrile	53	7.533	7.533	(0.763)	277101	1250.00	1300
28 trans-1,2-Dichloroethene	96	7.602	7.602	(0.770)	249838	125.000	130
27 Methyl-tert-butyl ether	73	7.553	7.553	(0.765)	370782	125.000	130
30 Isopropyl ether	45	8.105	8.105	(0.820)	813958	125.000	130
31 Vinyl acetate	43	8.105	8.105	(0.820)	447318	250.000	250
32 1,1-Dichloroethane	63	8.124	8.124	(0.822)	465386	125.000	130
33 Chloroprene	53	8.223	8.223	(0.832)	410449	125.000	130
34 2-butanone	43	8.706	8.706	(0.881)	194234	625.000	630
35 2,2-Dichloropropane	77	8.765	8.765	(0.887)	419798	125.000	130
36 cis-1,2-Dichloroethene	96	8.765	8.765	(0.887)	251655	125.000	130
37 Propionitrile	54	8.785	8.785	(0.889)	505507	6250.00	6600
38 Methacrylonitrile	41	8.952	8.952	(0.906)	622997	1250.00	1300
39 Bromochloromethane	128	9.011	9.011	(0.912)	76684	125.000	120
40 Chloroform	83	9.051	9.051	(0.916)	461871	125.000	130
42 1,1,1-Trichloroethane	97	9.287	9.287	(0.940)	392776	125.000	130
43 Cyclohexane	84	9.356	9.356	(0.947)	357699	125.000	130
44 1,1-dichloropropene	75	9.445	9.445	(0.956)	397276	125.000	130
45 Isobutyl alcohol	43	9.386	9.386	(0.950)	197942	6250.00	6900
46 Carbon Tetrachloride	117	9.454	9.454	(0.957)	344818	125.000	130
47 Benzene	78	9.642	9.642	(0.976)	931854	125.000	130
48 1,2-Dichloroethane	62	9.652	9.652	(0.977)	231314	125.000	130
49 Trichloroethene	130	10.223	10.223	(1.035)	240224	125.000	130
50 Methylcyclohexane	83	10.410	10.410	(1.054)	410460	125.000	130
51 1,2-Dichloropropane	63	10.420	10.420	(1.055)	215451	125.000	130
52 Methylmethacrylate	69	10.410	10.410	(1.054)	701691	1250.00	1300
53 1,4-dioxane	88	10.489	10.489	(1.062)	33730	6250.00	6300
54 Dibromomethane	174	10.538	10.538	(1.067)	83240	125.000	130
55 Bromodichloromethane	83	10.627	10.627	(1.076)	303774	125.000	130
56 2-chloroethyl vinyl ether	63	10.824	10.824	(1.096)	84256	1250.00	1300
57 cis-1,3-Dichloropropene	75	11.001	11.001	(1.114)	330908	125.000	130
58 4-Methyl-2-pentanone	43	11.060	11.060	(0.895)	470519	625.000	650
59 Toluene	92	11.287	11.287	(0.913)	536611	125.000	130
60 Ethylmethacrylate	69	11.415	11.415	(0.923)	1393025	1250.00	1300
61 trans-1,3-Dichloropropene	75	11.435	11.435	(0.925)	270435	125.000	130
62 1,1,2-Trichloroethane	97	11.592	11.592	(0.938)	112869	125.000	130
63 2-hexanone	43	11.711	11.711	(0.947)	315789	625.000	650
64 1,3-Dichloropropane	76	11.730	11.730	(0.949)	229612	125.000	130
65 Tetrachloroethene	164	11.740	11.740	(0.950)	182230	125.000	130

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL3R71.d
Report Date: 02-Jul-2009 14:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	66 Dibromochloromethane	129	11.918	11.918	(0.964)	165071	125.000	130
	67 1,2-Dibromoethane	107	12.036	12.036	(0.974)	122191	125.000	130
	68 1-Chlorohexane	55	12.282	12.282	(0.994)	261427	125.000	130
	69 Chlorobenzene	112	12.381	12.381	(1.002)	528558	125.000	130
	70 Ethylbenzene	106	12.410	12.410	(1.004)	291251	125.000	130
	71 1,1,1,2-Tetrachloroethane	131	12.420	12.420	(1.005)	189695	125.000	130
	72 m,p-Xylene	106	12.489	12.489	(1.010)	728279	250.000	260
	73 o-Xylene	106	12.794	12.794	(1.035)	337846	125.000	130
	74 Styrene	104	12.794	12.794	(1.035)	557575	125.000	130
	75 Bromoform	173	12.982	12.982	(1.050)	85284	125.000	130
	76 Isopropyl Benzene	105	13.031	13.031	(1.054)	984042	125.000	130
	77 1,1,2,2-Tetrachloroethane	83	13.238	13.238	(0.942)	144136	125.000	130
	79 1,2,3-Trichloropropane	110	13.297	13.297	(1.076)	33294	125.000	130
	78 trans-1,4-dichloro-2-butene	53	13.267	13.267	(1.073)	133302	500.000	520
	80 n-Propyl Benzene	91	13.326	13.326	(0.948)	1329959	125.000	130
	81 Bromobenzene	156	13.336	13.336	(1.079)	200983	125.000	130
	82 1,3,5-Trimethyl Benzene	105	13.425	13.425	(0.955)	769301	125.000	130
	83 2-Chlorotoluene	126	13.445	13.445	(0.957)	194336	125.000	120
	84 4-Chlorotoluene	126	13.514	13.514	(0.961)	220649	125.000	130
	85 tert-Butyl Benzene	119	13.691	13.691	(0.974)	748652	125.000	130
	86 1,2,4-Trimethyl Benzene	105	13.720	13.720	(0.976)	753384	125.000	130
	87 Pentachloroethane	167	13.760	13.760	(0.979)	123896	125.000	130
	88 sec-Butyl Benzene	105	13.849	13.849	(0.985)	1100048	125.000	130
	89 p-Isopropyl Toluene	119	13.927	13.927	(0.991)	844094	125.000	130
	90 1,3-Dichlorobenzene	146	14.006	14.006	(0.996)	414761	125.000	130
	91 1,4-Dichlorobenzene	146	14.075	14.075	(1.001)	408558	125.000	130
	92 n-Butyl Benzene	91	14.243	14.243	(1.013)	952458	125.000	130
	93 1,2-Dichlorobenzene	146	14.390	14.390	(1.024)	328917	125.000	130
	94 1,2-Dibromo-3-Chloropropane	75	15.001	15.001	(1.067)	19982	125.000	120
	95 1,2,4-Trichlorobenzene	180	15.799	15.799	(1.124)	222254	125.000	130
	96 Hexachlorobutadiene	225	15.898	15.898	(1.131)	135624	125.000	130
	97 Naphthalene	128	16.085	16.085	(1.144)	316227	125.000	130
	98 1,2,3-Trichlorobenzene	180	16.351	16.351	(1.163)	169628	125.000	130
M	99 1,2-Dichloroethene (total)	96				501493	250.000	260
M	100 Xylene (total)	106				1066125	125.000	410

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL471.d
Date : 01-JUL-2009 19:18
Client ID: VSTD010 Instrument: 5972hp71.i
Sample Info: 9G01002-CAL4;JAO
Purge Volume: 25.0 Operator: JAO
Column phase: SPB-624 Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL471.d
Report Date: 02-Jul-2009 14:56

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

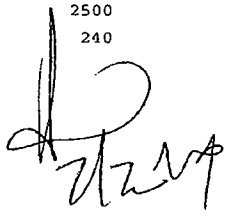
Data file : /chem/5972hp71.i/DF090701A71.b/9G01002-CAL471.d
Lab Smp Id: 9G01002-CAL4 Client Smp ID: VSTD010
Inj Date : 01-JUL-2009 19:18
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G01002-CAL4:JAO
Misc Info : VSTD010
Comment :
Method : /chem/5972hp71.i/DF090701A71.b/W8260-B-25MLv11.m
Meth Date : 02-Jul-2009 14:56 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 19:18 Cal File: 9G01002-CAL471.d
Als bottle: 8 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
* 1 Fluorobenzene	96	9.884	9.884	(1.000)	933181	125.000	
* 2 Chlorobenzene-d5	117	12.356	12.356	(1.000)	595115	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.051	14.051	(1.000)	281454	125.000	
$ 4 Dibromofluoromethane	113	9.214	9.214	(0.932)	493063	250.000	240
$ 5 1,2-Dichloroethane-d4	65	9.578	9.578	(0.969)	389232	250.000	250
$ 6 Toluene-d8	98	11.233	11.233	(0.909)	1561014	250.000	270
$ 7 Bromofluorobenzene	95	13.184	13.184	(0.938)	569660	250.000	250
8 Dichlorodifluoromethane	85	3.893	3.893	(0.394)	838381	250.000	240
9 Chloromethane	50	4.307	4.307	(0.436)	664963	250.000	250
10 Vinyl Chloride	62	4.534	4.534	(0.459)	489907	250.000	240
11 Bromomethane	94	5.204	5.204	(0.527)	270138	250.000	240
12 Chloroethane	64	5.381	5.381	(0.544)	203696	250.000	240
13 Trichlorofluoromethane	101	5.815	5.815	(0.588)	809608	250.000	240
14 Acrolein	56	6.435	6.435	(0.651)	350195	2500.00	2500
15 1,1,1-trichloro-2,2,2-trifluo	117	6.544	6.544	(0.662)	272192	250.000	240



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL471.d
Report Date: 02-Jul-2009 14:56

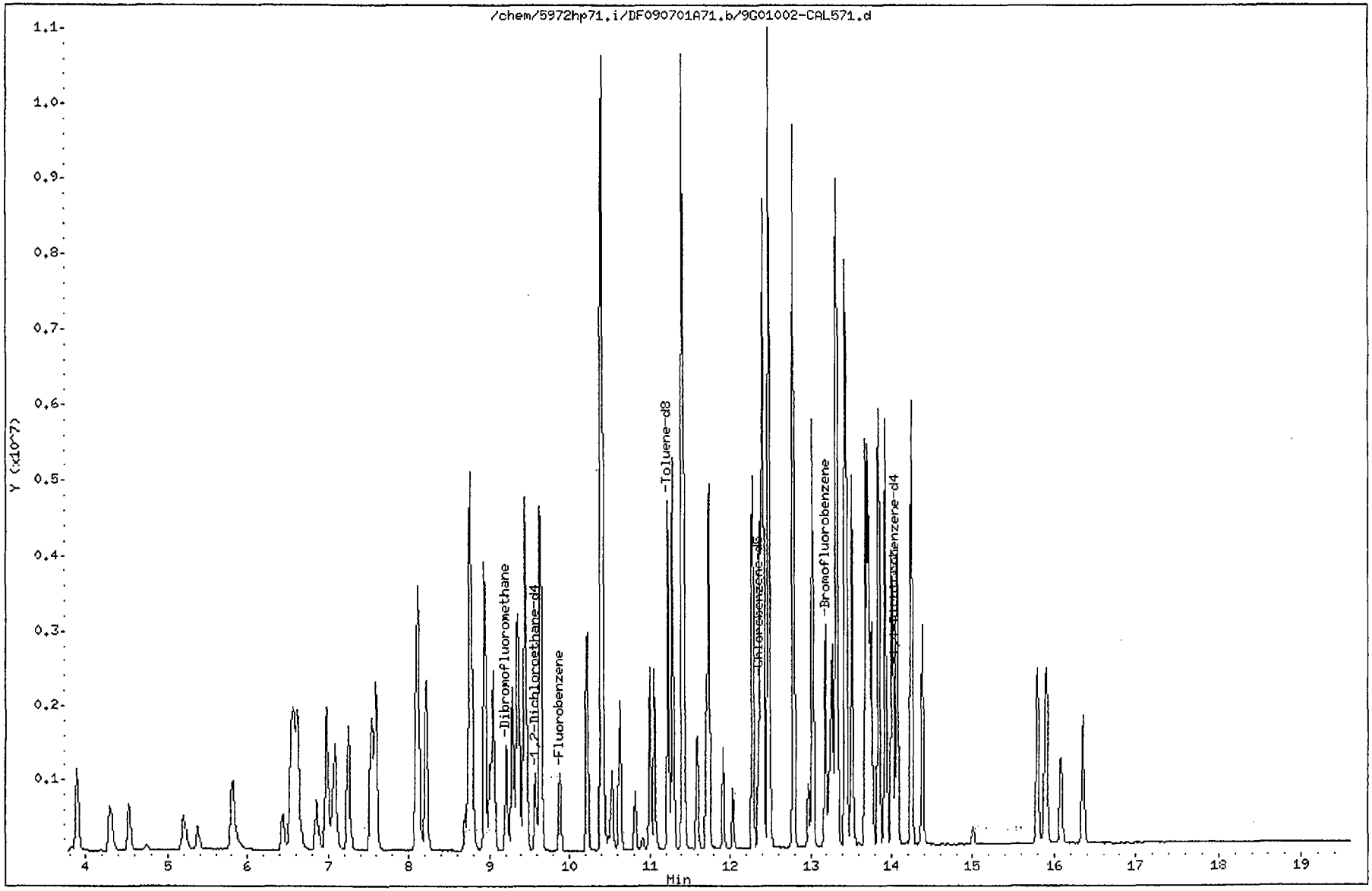
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
16	1,1,2-trichloro-1,2,2-trifluo	85	6.573	6.573	(0.665)	328427	250.000	240
17	1,1-Dichloroethene	96	6.622	6.622	(0.670)	462499	250.000	250
18	Acetone	43	6.632	6.632	(0.671)	245295	1250.00	1200
19	Iodomethane	142	6.859	6.859	(0.694)	560769	250.000	240
20	Carbon disulfide	76	6.987	6.987	(0.707)	2038830	250.000	240
22	3-Chloropropene	39	7.086	7.086	(0.717)	472423	250.000	240
23	Acetonitrile	41	7.086	7.086	(0.717)	701837	250.000	240
24	Methyl acetate	43	7.056	7.056	(0.714)	370597	250.000	240
25	Methylene Chloride	84	7.253	7.253	(0.734)	536847	250.000	260
26	Acrylonitrile	53	7.529	7.529	(0.762)	584313	2500.00	2500
28	trans-1,2-Dichloroethene	96	7.598	7.598	(0.769)	511073	250.000	240
27	Methyl-tert-butyl ether	73	7.549	7.549	(0.764)	785388	250.000	240
30	Isopropyl ether	45	8.110	8.110	(0.821)	1651688	250.000	240
31	Vinyl acetate	43	8.100	8.100	(0.820)	930452	500.000	470
32	1,1-Dichloroethane	63	8.120	8.120	(0.822)	938125	250.000	230
33	Chloroprene	53	8.219	8.219	(0.832)	825846	250.000	230
34	2-butanone	43	8.701	8.701	(0.880)	410139	1250.00	1200
35	2,2-Dichloropropane	77	8.770	8.770	(0.887)	853816	250.000	240
36	cis-1,2-Dichloroethene	96	8.760	8.760	(0.886)	513332	250.000	240
37	Propionitrile	54	8.780	8.780	(0.888)	1038066	12500.0	12000
38	Methacrylonitrile	41	8.948	8.948	(0.905)	1296032	2500.00	2400
39	Bromochloromethane	128	9.017	9.017	(0.912)	164255	250.000	240
40	Chloroform	83	9.056	9.056	(0.916)	951909	250.000	240
42	1,1,1-Trichloroethane	97	9.292	9.292	(0.940)	818389	250.000	240
43	Cyclohexane	84	9.352	9.352	(0.946)	742192	250.000	240
44	1,1-dichloropropene	75	9.440	9.440	(0.955)	806993	250.000	240
45	Isobutyl alcohol	43	9.381	9.381	(0.949)	420191	12500.0	13000
46	Carbon Tetrachloride	117	9.460	9.460	(0.957)	720659	250.000	240
47	Benzene	78	9.637	9.637	(0.975)	1927551	250.000	240
48	1,2-Dichloroethane	62	9.647	9.647	(0.976)	478792	250.000	240
49	Trichloroethene	130	10.219	10.219	(1.034)	496104	250.000	240
50	Methylcyclohexane	83	10.406	10.406	(1.053)	836985	250.000	240
51	1,2-Dichloropropane	63	10.425	10.425	(1.055)	433973	250.000	240
52	Methylmethacrylate	69	10.406	10.406	(1.053)	1450537	2500.00	2500
53	1,4-dioxane	88	10.485	10.485	(1.061)	70510	12500.0	12000
54	Dibromomethane	174	10.534	10.534	(1.066)	181672	250.000	250
55	Bromodichloromethane	83	10.632	10.632	(1.076)	638553	250.000	240
56	2-chloroethyl vinyl ether	63	10.820	10.820	(1.095)	180463	2500.00	2400
57	cis-1,3-Dichloropropene	75	11.007	11.007	(1.114)	697367	250.000	240
58	4-Methyl-2-pentanone	43	11.066	11.066	(0.896)	1002045	1250.00	1200
59	Toluene	92	11.292	11.292	(0.914)	1118232	250.000	240
60	Ethylmethacrylate	69	11.411	11.411	(0.923)	2886218	2500.00	2500
61	trans-1,3-Dichloropropene	75	11.430	11.430	(0.925)	555783	250.000	240
62	1,1,2-Trichloroethane	97	11.588	11.588	(0.938)	237783	250.000	250
63	2-hexanone	43	11.706	11.706	(0.947)	677559	1250.00	1200
64	1,3-Dichloropropane	76	11.736	11.736	(0.950)	479512	250.000	250
65	Tetrachloroethene	164	11.746	11.746	(0.951)	390862	250.000	240

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL471.d
Report Date: 02-Jul-2009 14:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
	66 Dibromochloromethane	129	11.913	11.913	(0.964)	361376	250.000	250
	67 1,2-Dibromoethane	107	12.041	12.041	(0.974)	259613	250.000	250
	68 1-Chlorohexane	55	12.278	12.278	(0.994)	515594	250.000	230
	69 Chlorobenzene	112	12.386	12.386	(1.002)	1109623	250.000	240
	70 Ethylbenzene	106	12.416	12.416	(1.005)	603146	250.000	240
	71 1,1,1,2-Tetrachloroethane	131	12.416	12.416	(1.005)	410140	250.000	250
	72 m,p-Xylene	106	12.485	12.485	(1.010)	1516351	500.000	490
	73 o-Xylene	106	12.790	12.790	(1.035)	709724	250.000	250
	74 Styrene	104	12.790	12.790	(1.035)	1187124	250.000	250
	75 Bromoform	173	12.977	12.977	(1.050)	187908	250.000	250
	76 Isopropyl Benzene	105	13.026	13.026	(1.054)	2045818	250.000	240
	77 1,1,2,2-Tetrachloroethane	83	13.233	13.233	(0.942)	304861	250.000	240
	79 1,2,3-Trichloropropane	110	13.302	13.302	(1.077)	69573	250.000	240
	78 trans-1,4-dichloro-2-butene	53	13.263	13.263	(1.073)	277692	1000.00	960
	80 n-Propyl Benzene	91	13.322	13.322	(0.948)	2747870	250.000	240
	81 Bromobenzene	156	13.332	13.332	(1.079)	431412	250.000	250
	82 1,3,5-Trimethyl Benzene	105	13.430	13.430	(0.956)	1594988	250.000	240
	83 2-Chlorotoluene	126	13.450	13.450	(0.957)	453917	250.000	250
	84 4-Chlorotoluene	126	13.519	13.519	(0.962)	458851	250.000	240
	85 tert-Butyl Benzene	119	13.687	13.687	(0.974)	1560182	250.000	240
	86 1,2,4-Trimethyl Benzene	105	13.726	13.726	(0.977)	1561657	250.000	240
	87 Pentachloroethane	167	13.755	13.755	(0.979)	271864	250.000	240
	88 sec-Butyl Benzene	105	13.844	13.844	(0.985)	2312089	250.000	240
	89 p-Isopropyl Toluene	119	13.933	13.933	(0.992)	1781143	250.000	240
	90 1,3-Dichlorobenzene	146	14.012	14.012	(0.997)	856800	250.000	240
	91 1,4-Dichlorobenzene	146	14.071	14.071	(1.001)	852676	250.000	240
	92 n-Butyl Benzene	91	14.248	14.248	(1.014)	1964648	250.000	240
	93 1,2-Dichlorobenzene	146	14.386	14.386	(1.024)	691426	250.000	240
	94 1,2-Dibromo-3-Chloropropane	75	15.007	15.007	(1.068)	41032	250.000	220
	95 1,2,4-Trichlorobenzene	180	15.795	15.795	(1.124)	444216	250.000	230
	96 Hexachlorobutadiene	225	15.903	15.903	(1.132)	283044	250.000	240
	97 Naphthalene	128	16.081	16.081	(1.144)	621668	250.000	230
	98 1,2,3-Trichlorobenzene	180	16.356	16.356	(1.164)	337924	250.000	230
M	99 1,2-Dichloroethene (total)	96				1024405	500.000	480
M	100 Xylene (total)	106				2226075	250.000	770

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL571.d
Date : 01-JUL-2009 18:50
Client ID: VSTD020
Sample Info: 9G01002-CAL5:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL571.d
Report Date: 02-Jul-2009 14:56

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090701A71.b/9G01002-CAL571.d
Lab Smp Id: 9G01002-CAL5 Client Smp ID: VSTD020
Inj Date : 01-JUL-2009 18:50
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G01002-CAL5:JAO
Misc Info : VSTD020
Comment :
Method : /chem/5972hp71.i/DF090701A71.b/W8260-B-25MLv11.m
Meth Date : 02-Jul-2009 14:56 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:50 Cal File: 9G01002-CAL571.d
Als bottle: 7 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
*	1 Fluorobenzene	96	9.880	9.880	(1.000)	924323	125.000	
*	2 Chlorobenzene-d5	117	12.362	12.362	(1.000)	598813	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.057	14.057	(1.000)	283282	125.000	
$	4 Dibromofluoromethane	113	9.210	9.210	(0.932)	946355	500.000	480
$	5 1,2-Dichloroethane-d4	65	9.574	9.574	(0.969)	719990	500.000	460
$	6 Toluene-d8	98	11.229	11.229	(0.908)	2698226	500.000	490
$	7 Bromofluorobenzene	95	13.190	13.190	(0.938)	1080227	500.000	490
	8 Dichlorodifluoromethane	85	3.899	3.899	(0.395)	1699907	500.000	490
	9 Chloromethane	50	4.303	4.303	(0.436)	1350992	500.000	500
	10 Vinyl Chloride	62	4.530	4.530	(0.459)	981683	500.000	490
	11 Bromomethane	94	5.200	5.200	(0.526)	560064	500.000	500
	12 Chloroethane	64	5.377	5.377	(0.544)	403744	500.000	480
	13 Trichlorofluoromethane	101	5.821	5.821	(0.589)	1655160	500.000	490
	14 Acrolein	56	6.441	6.441	(0.652)	660972	5000.00	4700
	15 1,1,1-trichloro-2,2,2-trifluo	117	6.540	6.540	(0.662)	504877	500.000	450

7/2/09

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL571.d
Report Date: 02-Jul-2009 14:56

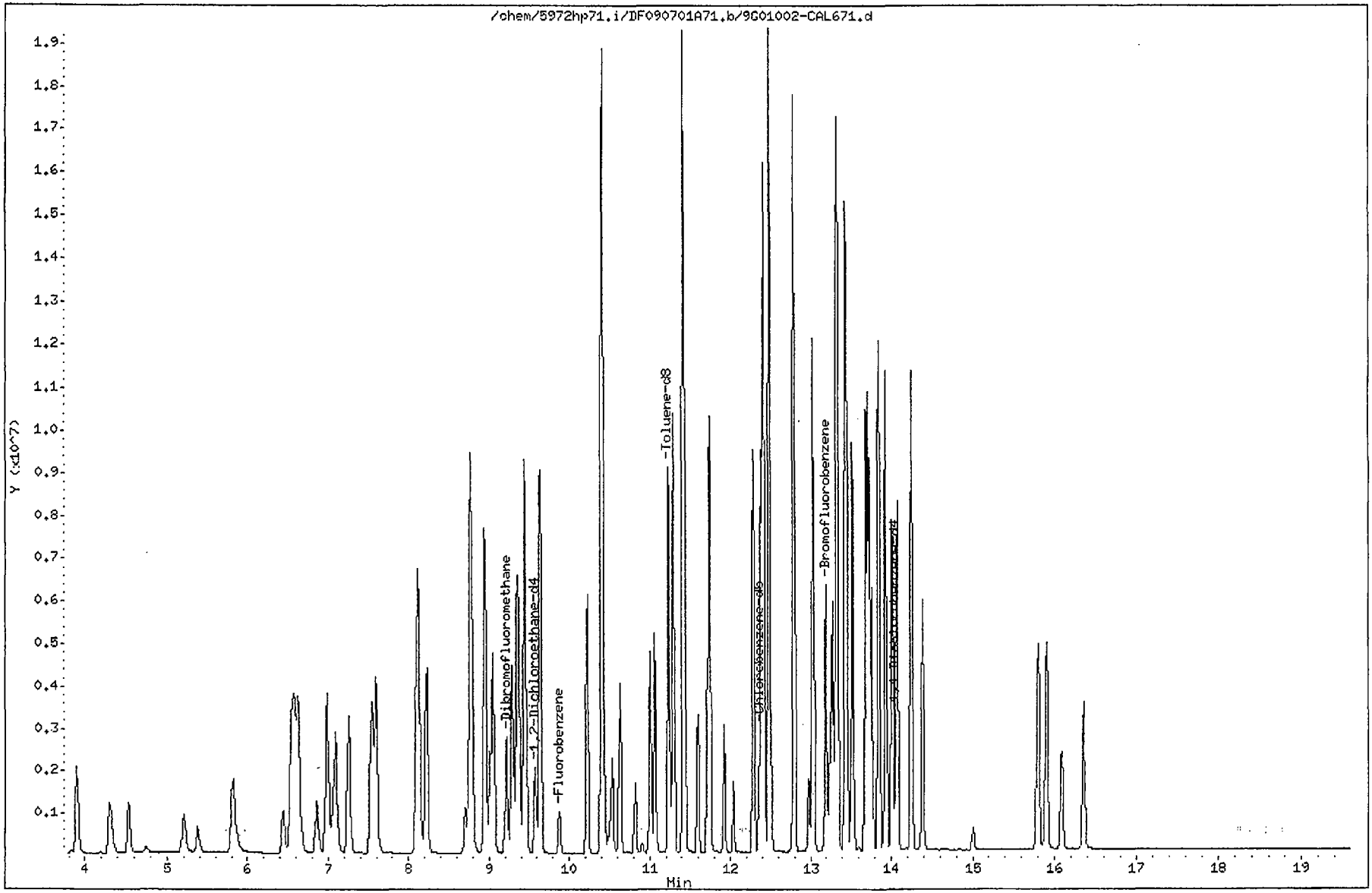
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
16 1,1,2-trichloro-1,2,2-trifluo	85	6.579	6.579	(0.666)	608414	500.000	450
17 1,1-Dichloroethene	96	6.619	6.619	(0.670)	899922	500.000	480
18 Acetone	43	6.628	6.628	(0.671)	451167	2500.00	2100
19 Iodomethane	142	6.855	6.855	(0.694)	1087886	500.000	480
20 Carbon disulfide	76	6.983	6.983	(0.707)	4001720	500.000	480
22 3-Chloropropene	39	7.091	7.091	(0.718)	917524	500.000	470
23 Acetonitrile	41	7.091	7.091	(0.718)	1362709	500.000	480
24 Methyl acetate	43	7.052	7.052	(0.714)	687184	500.000	460
25 Methylene Chloride	84	7.259	7.259	(0.735)	989166	500.000	500
26 Acrylonitrile	53	7.535	7.535	(0.763)	1110757	5000.00	4700
28 trans-1,2-Dichloroethene	96	7.594	7.594	(0.769)	1023247	500.000	480
27 Methyl-tert-butyl ether	73	7.555	7.555	(0.765)	1505627	500.000	470
30 Isopropyl ether	45	8.106	8.106	(0.821)	3203761	500.000	470
31 Vinyl acetate	43	8.096	8.096	(0.819)	1789566	1000.00	910
32 1,1-Dichloroethane	63	8.126	8.126	(0.822)	1906370	500.000	480
33 Chloroprene	53	8.215	8.215	(0.831)	1728820	500.000	490
34 2-butanone	43	8.697	8.697	(0.880)	786666	2500.00	2300
35 2,2-Dichloropropane	77	8.766	8.766	(0.887)	1687816	500.000	480
36 cis-1,2-Dichloroethene	96	8.766	8.766	(0.887)	1026690	500.000	480
37 Propionitrile	54	8.786	8.786	(0.889)	1960139	25000.0	23000
38 Methacrylonitrile	41	8.944	8.944	(0.905)	2479639	5000.00	4700
39 Bromochloromethane	128	9.013	9.013	(0.912)	336141	500.000	490
40 Chloroform	83	9.052	9.052	(0.916)	1920908	500.000	480
42 1,1,1-Trichloroethane	97	9.289	9.289	(0.940)	1614329	500.000	470
43 Cyclohexane	84	9.357	9.357	(0.947)	1386717	500.000	450
44 1,1-dichloropropene	75	9.446	9.446	(0.956)	1562166	500.000	470
45 Isobutyl alcohol	43	9.377	9.377	(0.949)	817659	25000.0	26000
46 Carbon Tetrachloride	117	9.456	9.456	(0.957)	1409971	500.000	470
47 Benzene	78	9.633	9.633	(0.975)	3840552	500.000	480
48 1,2-Dichloroethane	62	9.653	9.653	(0.977)	911923	500.000	460
49 Trichloroethene	130	10.224	10.224	(1.035)	1006645	500.000	490
50 Methylcyclohexane	83	10.402	10.402	(1.053)	1490688	500.000	440
51 1,2-Dichloropropane	63	10.422	10.422	(1.055)	827064	500.000	460
52 Methylmethacrylate	69	10.412	10.412	(1.054)	2669933	5000.00	4600
53 1,4-dioxane	88	10.490	10.490	(1.062)	140489	25000.0	24000
54 Dibromomethane	174	10.540	10.540	(1.067)	360898	500.000	500
55 Bromodichloromethane	83	10.628	10.628	(1.076)	1272931	500.000	480
56 2-chloroethyl vinyl ether	63	10.816	10.816	(1.095)	345244	5000.00	4700
57 cis-1,3-Dichloropropene	75	11.003	11.003	(1.114)	1371638	500.000	480
58 4-Methyl-2-pentanone	43	11.062	11.062	(0.895)	1888143	2500.00	2300
59 Toluene	92	11.289	11.289	(0.913)	2206896	500.000	470
60 Ethylmethacrylate	69	11.417	11.417	(0.923)	5369449	5000.00	4600
61 trans-1,3-Dichloropropene	75	11.436	11.436	(0.925)	1070280	500.000	470
62 1,1,2-Trichloroethane	97	11.594	11.594	(0.938)	465859	500.000	480
63 2-hexanone	43	11.702	11.702	(0.947)	1271764	2500.00	2300
64 1,3-Dichloropropane	76	11.732	11.732	(0.949)	905642	500.000	460
65 Tetrachloroethene	164	11.742	11.742	(0.950)	777753	500.000	480

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL571.d
Report Date: 02-Jul-2009 14:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66	Dibromochloromethane	129	11.919	11.919	(0.964)	712109	500.000	490
67	1,2-Dibromoethane	107	12.037	12.037	(0.974)	505714	500.000	480
68	1-Chlorohexane	55	12.284	12.284	(0.994)	1050710	500.000	470
69	Chlorobenzene	112	12.382	12.382	(1.002)	2203865	500.000	480
70	Ethylbenzene	106	12.412	12.412	(1.004)	1191963	500.000	480
71	1,1,1,2-Tetrachloroethane	131	12.422	12.422	(1.005)	825561	500.000	500
72	m,p-Xylene	106	12.490	12.490	(1.010)	3007403	1000.00	960
73	o-Xylene	106	12.786	12.786	(1.034)	1393357	500.000	480
74	Styrene	104	12.796	12.796	(1.035)	2331705	500.000	490
75	Bromoform	173	12.973	12.973	(1.049)	370093	500.000	490
76	Isopropyl Benzene	105	13.032	13.032	(1.054)	3989085	500.000	470
77	1,1,2,2-Tetrachloroethane	83	13.229	13.229	(0.941)	581597	500.000	460
79	1,2,3-Trichloropropane	110	13.298	13.298	(1.076)	134286	500.000	460
78	trans-1,4-dichloro-2-butene	53	13.269	13.269	(1.073)	540084	2000.00	1900
80	n-Propyl Benzene	91	13.328	13.328	(0.948)	5288525	500.000	470
81	Bromobenzene	156	13.338	13.338	(1.079)	873553	500.000	500
82	1,3,5-Trimethyl Benzene	105	13.426	13.426	(0.955)	3141775	500.000	470
83	2-Chlorotoluene	126	13.446	13.446	(0.957)	914188	500.000	490
84	4-Chlorotoluene	126	13.515	13.515	(0.961)	905757	500.000	480
85	tert-Butyl Benzene	119	13.683	13.683	(0.973)	2996613	500.000	470
86	1,2,4-Trimethyl Benzene	105	13.722	13.722	(0.976)	3077163	500.000	470
87	Pentachloroethane	167	13.761	13.761	(0.979)	572011	500.000	510
88	sec-Butyl Benzene	105	13.850	13.850	(0.985)	4450320	500.000	470
89	p-Isopropyl Toluene	119	13.929	13.929	(0.991)	3463604	500.000	470
90	1,3-Dichlorobenzene	146	14.008	14.008	(0.996)	1738690	500.000	480
91	1,4-Dichlorobenzene	146	14.077	14.077	(1.001)	1687359	500.000	480
92	n-Butyl Benzene	91	14.244	14.244	(1.013)	3784537	500.000	460
93	1,2-Dichlorobenzene	146	14.382	14.382	(1.023)	1374990	500.000	480
94	1,2-Dibromo-3-Chloropropane	75	15.003	15.003	(1.067)	78584	500.000	430
95	1,2,4-Trichlorobenzene	180	15.801	15.801	(1.124)	909068	500.000	480
96	Hexachlorobutadiene	225	15.899	15.899	(1.131)	566157	500.000	480
97	Naphthalene	128	16.087	16.087	(1.144)	1224781	500.000	460
98	1,2,3-Trichlorobenzene	180	16.353	16.353	(1.163)	697621	500.000	480
M 99	1,2-Dichloroethene (total)	96				2049937	1000.00	960
M 100	Xylene (total)	106				4400760	500.000	1500

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL671.d
Date : 01-JUL-2009 18:21
Client ID: VSTD040
Sample Info: 9G01002-CAL6;JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL671.d
Report Date: 02-Jul-2009 14:56

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090701A71.b/9G01002-CAL671.d
Lab Smp Id: 9G01002-CAL6 Client Smp ID: VSTD040
Inj Date : 01-JUL-2009 18:21
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G01002-CAL6:JAO
Misc Info : VSTD040
Comment :
Method : /chem/5972hp71.i/DF090701A71.b/W8260-B-25MLv11.m
Meth Date : 02-Jul-2009 14:56 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
*	1 Fluorobenzene	96	9.879	9.879	(1.000)	876080	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.361	(1.000)	587710	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.056	14.056	(1.000)	286320	125.000	
$	4 Dibromofluoromethane	113	9.219	9.219	(0.933)	1897052	1000.00	1000(A)
$	5 1,2-Dichloroethane-d4	65	9.573	9.573	(0.969)	1506890	1000.00	1000(A)
$	6 Toluene-d8	98	11.228	11.228	(0.908)	6003594	1000.00	1100(A)
$	7 Bromofluorobenzene	95	13.189	13.189	(0.938)	2172538	1000.00	1000(A)
	8 Dichlorodifluoromethane	85	3.898	3.898	(0.395)	3137212	1000.00	960
	9 Chloromethane	50	4.302	4.302	(0.436)	2681706	1000.00	1100(A)
	10 Vinyl Chloride	62	4.529	4.529	(0.458)	1828210	1000.00	970
	11 Bromomethane	94	5.199	5.199	(0.526)	1075227	1000.00	1000(A)
	12 Chloroethane	64	5.376	5.376	(0.544)	761210	1000.00	960
	13 Trichlorofluoromethane	101	5.820	5.820	(0.589)	3060568	1000.00	960
	14 Acrolein	56	6.440	6.440	(0.652)	1340896	10000.0	10000(A)
	15 1,1,1-trichloro-2,2,2-trifluo	117	6.539	6.539	(0.662)	977288	1000.00	930

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL671.d
Report Date: 02-Jul-2009 14:56

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
16 1,1,2-trichloro-1,2,2-trifluo	85	6.578	6.578	(0.666)	1200700	1000.00	940
17 1,1-Dichloroethene	96	6.628	6.628	(0.671)	1694539	1000.00	960
18 Acetone	43	6.628	6.628	(0.671)	941491	5000.00	4700
19 Iodomethane	142	6.854	6.854	(0.694)	1844428	1000.00	850
20 Carbon disulfide	76	6.982	6.982	(0.707)	7738609	1000.00	970
22 3-Chloropropene	39	7.091	7.091	(0.718)	1899630	1000.00	1000(A)
23 Acetonitrile	41	7.091	7.091	(0.718)	2737009	1000.00	1000(A)
24 Methyl acetate	43	7.051	7.051	(0.714)	1446544	1000.00	1000(A)
25 Methylene Chloride	84	7.258	7.258	(0.735)	1834934	1000.00	1000
26 Acrylonitrile	53	7.534	7.534	(0.763)	2225345	10000.0	10000
28 trans-1,2-Dichloroethene	96	7.593	7.593	(0.769)	1928812	1000.00	960
27 Methyl-tert-butyl ether	73	7.554	7.554	(0.765)	3060728	1000.00	1000(A)
30 Isopropyl ether	45	8.105	8.105	(0.820)	6328858	1000.00	970
31 Vinyl acetate	43	8.095	8.095	(0.819)	3621955	2000.00	1900
32 1,1-Dichloroethane	63	8.125	8.125	(0.822)	3716224	1000.00	990
33 Chloroprene	53	8.224	8.224	(0.832)	3326200	1000.00	1000
34 2-butanone	43	8.696	8.696	(0.880)	1710984	5000.00	5300(A)
35 2,2-Dichloropropane	77	8.765	8.765	(0.887)	3360779	1000.00	1000
36 cis-1,2-Dichloroethene	96	8.765	8.765	(0.887)	1926946	1000.00	960
37 Propionitrile	54	8.785	8.785	(0.889)	3831176	50000.0	48000
38 Methacrylonitrile	41	8.943	8.943	(0.905)	5010143	10000.0	9900
39 Bromochloromethane	128	9.012	9.012	(0.912)	677902	1000.00	1000(A)
40 Chloroform	83	9.051	9.051	(0.916)	3825161	1000.00	1000(A)
42 1,1,1-Trichloroethane	97	9.288	9.288	(0.940)	3265970	1000.00	1000(A)
43 Cyclohexane	84	9.357	9.357	(0.947)	2796287	1000.00	960
44 1,1-dichloropropene	75	9.445	9.445	(0.956)	3087666	1000.00	970
45 Isobutyl alcohol	43	9.376	9.376	(0.949)	1686166	50000.0	57000(A)
46 Carbon Tetrachloride	117	9.455	9.455	(0.957)	2913328	1000.00	1000(A)
47 Benzene	78	9.632	9.632	(0.975)	7517871	1000.00	1000
48 1,2-Dichloroethane	62	9.652	9.652	(0.977)	1881516	1000.00	1000
49 Trichloroethene	130	10.224	10.224	(1.035)	1985425	1000.00	1000(A)
50 Methylcyclohexane	83	10.401	10.401	(1.053)	2744080	1000.00	850
51 1,2-Dichloropropane	63	10.430	10.430	(1.056)	1481342	1000.00	880
52 Methylmethacrylate	69	10.411	10.411	(1.054)	4852621	10000.0	8800
53 1,4-dioxane	88	10.490	10.490	(1.062)	284756	50000.0	51000(A)
54 Dibromomethane	174	10.539	10.539	(1.067)	729504	1000.00	1100(A)
55 Bromodichloromethane	83	10.627	10.627	(1.076)	2598066	1000.00	1000(A)
56 2-chloroethyl vinyl ether	63	10.825	10.825	(1.096)	750910	10000.0	11000(A)
57 cis-1,3-Dichloropropene	75	11.002	11.002	(1.114)	2761983	1000.00	1000(A)
58 4-Methyl-2-pentanone	43	11.061	11.061	(0.895)	4038754	5000.00	5100(A)
59 Toluene	92	11.288	11.288	(0.913)	4400724	1000.00	950
60 Ethylmethacrylate	69	11.416	11.416	(0.923)	9833620	10000.0	8600
61 trans-1,3-Dichloropropene	75	11.435	11.435	(0.925)	2141409	1000.00	950
62 1,1,2-Trichloroethane	97	11.593	11.593	(0.938)	957147	1000.00	1000(A)
63 2-hexanone	43	11.701	11.701	(0.947)	2671613	5000.00	5000
64 1,3-Dichloropropane	76	11.731	11.731	(0.949)	1790507	1000.00	930
65 Tetrachloroethene	164	11.741	11.741	(0.950)	1614650	1000.00	1000(A)

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-CAL671.d
Report Date: 02-Jul-2009 14:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66	Dibromochloromethane	129	11.918	11.918	(0.964)	1491874	1000.00	1000(A)
67	1,2-Dibromoethane	107	12.036	12.036	(0.974)	1043597	1000.00	1000(A)
68	1-Chlorohexane	55	12.283	12.283	(0.994)	1955546	1000.00	900
69	Chlorobenzene	112	12.381	12.381	(1.002)	4421191	1000.00	990
70	Ethylbenzene	106	12.411	12.411	(1.004)	2332120	1000.00	950
71	1,1,1,2-Tetrachloroethane	131	12.421	12.421	(1.005)	1683344	1000.00	1000(A)
72	m,p-Xylene	106	12.490	12.490	(1.010)	5793647	2000.00	1900
73	o-Xylene	106	12.785	12.785	(1.034)	2691860	1000.00	950
74	Styrene	104	12.795	12.795	(1.035)	4531435	1000.00	970
75	Bromoform	173	12.982	12.982	(1.050)	787988	1000.00	1100(A)
76	Isopropyl Benzene	105	13.031	13.031	(1.054)	8121055	1000.00	980
77	1,1,2,2-Tetrachloroethane	83	13.238	13.238	(0.942)	1230436	1000.00	970
79	1,2,3-Trichloropropane	110	13.297	13.297	(1.076)	284662	1000.00	1000(A)
78	trans-1,4-dichloro-2-butene	53	13.268	13.268	(1.073)	1132280	4000.00	4000
80	n-Propyl Benzene	91	13.327	13.327	(0.948)	10329067	1000.00	900
81	Bromobenzene	156	13.337	13.337	(1.079)	1816533	1000.00	1100(A)
82	1,3,5-Trimethyl Benzene	105	13.426	13.426	(0.955)	6332681	1000.00	940
83	2-Chlorotoluene	126	13.445	13.445	(0.957)	1827899	1000.00	970
84	4-Chlorotoluene	126	13.514	13.514	(0.961)	1831944	1000.00	960
85	tert-Butyl Benzene	119	13.692	13.692	(0.974)	6292215	1000.00	970
86	1,2,4-Trimethyl Benzene	105	13.721	13.721	(0.976)	6259699	1000.00	950
87	Pentachloroethane	167	13.760	13.760	(0.979)	1170158	1000.00	1000(A)
88	sec-Butyl Benzene	105	13.849	13.849	(0.985)	8993493	1000.00	930
89	p-Isopropyl Toluene	119	13.928	13.928	(0.991)	7092963	1000.00	960
90	1,3-Dichlorobenzene	146	14.007	14.007	(0.996)	3550306	1000.00	980
91	1,4-Dichlorobenzene	146	14.076	14.076	(1.001)	3499884	1000.00	980
92	n-Butyl Benzene	91	14.243	14.243	(1.013)	7499270	1000.00	900
93	1,2-Dichlorobenzene	146	14.391	14.391	(1.024)	2827804	1000.00	980
94	1,2-Dibromo-3-Chloropropane	75	15.002	15.002	(1.067)	167243	1000.00	900
95	1,2,4-Trichlorobenzene	180	15.800	15.800	(1.124)	1861239	1000.00	960
96	Hexachlorobutadiene	225	15.898	15.898	(1.131)	1165137	1000.00	980
97	Naphthalene	128	16.086	16.086	(1.144)	2440983	1000.00	900
98	1,2,3-Trichlorobenzene	180	16.352	16.352	(1.163)	1425825	1000.00	970
M 99	1,2-Dichloroethene (total)	96				3855758	2000.00	1900
M 100	Xylene (total)	106				8485507	1000.00	3000

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

COMPUCHEM a Division of Liberty Analytical Corp DATE 7/01/09 INITIAL TIME OF TUNE 1624 SHIFT/S(A) ✓ (B) ____ (C) ____

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 0424 LINKER METHOD 8260B 25mL 275

COMPUCHEM LOGBOOK 11 WWW 28 (5972hp71) DOD

PREVENTIVE MAINTENANCE new source

		FILE NAME		EPA	Val	DATE	TIME	Client ID	SDG#	INJ VOL	DF+	CHEMIST	COMMENTS(ETC)/DISPOSITION
1		9G01002-TUN1		—	—	7/01/09	1624	BFB	—	2uL	—	~~JAD~~ AGW JAD 7-1-09	LCD=SCD
2		-CAL3	US	—	—	/ /	1651	VSTD005	—	25mL	—	JAD	
3		-CAL2		—	—	/ /	1725	VSTD001	—		—		
4		-CAL1		—	—	/ /	1753	VSTD0.5	—		—		ICAL passes
5		-CAL6		—	—	/ /	1821	VSTD040	—		—		
6		-CAL5		—	—	/ /	1850	VSTD020	—		—		
7		-CAL4		—	—	/ /	1918	VSTD010	—		—		
8		-CAL3R		—	—	/ /	1946	VSTD005	—		—		
9		GB090701	MS	—	—	/ /	2014	VIBLKAB	—		—		
10		9070123-BLK1		—	—	/ /	2042	VBLKJG	VARIOUS		—		
11		-BS1		—	—	/ /	~~2110~~ 2042 JAD 7-1-09	VJGLCS			—		DC483 Passes TCL4
12		-BSD1		—	—	/ /	2139	VJGLCSD			—		BAKER56A
13		0906174-01		1	A	/ /	2207	JUNE09-FB01	0906174	25mL	—		
14		-02		1	A	/ /	2235	-ER01			—		
15		-04		1	A	/ /	2303	-TB01			—		
16		-05		1	A	/ /	2331	-ER02			—		
17		-06		1	A	/ /	2359	-ER03			—		
18		-08		1	A	7/02/09	0027	-TB02			—		
19						/ /							
20						/ /		JAD 7-2-09					
21						/ /							
22						/ /							
23						/ /							
24						/ /							

*On-column sample aliquot +Not applicable to soil matrix

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Tune (ID #7008) Lot #: 66747 Calibration Group Code / Lot #: DC482

Reviewed by: [signature] Date 7-2-09 Archon Internal Standard #: 66762

03/02/09: jr

4112

Archon IS/surr. 66763

b. Continuing Calibration Data (Form VII VOA)

If more than one instrument is used, forms shall be arranged in order by instrument. If multiple continuing calibrations from the same instrument are used, they shall be in chronological order.

(1) Reconstructed Ion Chromatograms and quantitation reports for all continuing (12-hour) calibrations. Spectra not required.

(2) EICPs displaying each manual integration.

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/02/09 Time: 1047

Lab File ID: 9G02001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.4670800	0.4614802	0.4614802	0.001	-1.20	90.00	AVRG
Chloromethane	0.3626600	0.3181102	0.3181102	0.1	-12.28	90.00	AVRG
Vinyl Chloride	0.2698300	0.2679180	0.2679180	0.001	-0.71	20.00	AVRG
Bromomethane	124.93865	125.00000	0.1436389	0.001	-0.05	90.00	LINR
Chloroethane	0.1137200	0.1183110	0.1183110	0.001	4.04	90.00	AVRG
Trichlorofluoromethane	0.4542000	0.4753109	0.4753109	0.001	4.65	90.00	AVRG
1,1-Dichloroethene	0.2516100	0.2665132	0.2665132	0.001	5.92	20.00	AVRG
Carbon disulfide	1.1333900	1.1870477	1.1870477	0.001	4.73	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1831500	0.1937731	0.1937731	0.001	5.80	90.00	AVRG
Acetone	0.0284900	0.0285470	0.0285470	0.001	0.20	90.00	AVRG
Methyl acetate	0.2027500	0.2380218	0.2380218	0.001	17.40	90.00	AVRG
Methylene Chloride	122.64002	125.00000	0.2871335	0.001	-1.89	90.00	LINR
trans-1,2-Dichloroethene	0.2873100	0.2944275	0.2944275	0.001	2.48	90.00	AVRG
Methyl-tert-butyl ether	0.4324500	0.4941503	0.4941503	0.001	14.27	90.00	AVRG
1,1-Dichloroethane	0.5362600	0.5549381	0.5549381	0.1	3.48	90.00	AVRG
cis-1,2-Dichloroethene	0.2878700	0.2989058	0.2989058	0.001	3.83	90.00	AVRG
2-butanone	0.0460000	0.0520030	0.0520030	0.001	13.05	90.00	AVRG
Chloroform	0.5384900	0.5560974	0.5560974	0.001	3.27	20.00	AVRG
1,1,1-Trichloroethane	0.4609700	0.4759572	0.4759572	0.001	3.25	90.00	AVRG
Carbon Tetrachloride	0.4059300	0.4210093	0.4210093	0.001	3.71	90.00	AVRG
Benzene	1.0737000	1.1211378	1.1211378	0.001	4.42	90.00	AVRG
1,2-Dichloroethane	0.2686300	0.2883817	0.2883817	0.001	7.35	90.00	AVRG
Trichloroethene	0.2778400	0.2933150	0.2933150	0.001	5.57	90.00	AVRG
1,2-Dichloropropane	0.2411400	0.2651467	0.2651467	0.001	9.96	20.00	AVRG
Bromodichloromethane	0.3565200	0.3807320	0.3807320	0.001	6.79	90.00	AVRG
cis-1,3-Dichloropropene	0.3836200	0.4179629	0.4179629	0.001	8.95	90.00	AVRG
4-Methyl-2-pentanone	0.1692900	0.1920213	0.1920213	0.001	13.43	90.00	AVRG
Toluene	0.9805700	0.9744065	0.9744065	0.001	-0.63	20.00	AVRG
trans-1,3-Dichloropropene	0.4788400	0.5202369	0.5202369	0.001	8.64	90.00	AVRG
1,1,2-Trichloroethane	0.2020700	0.2212931	0.2212931	0.001	9.51	90.00	AVRG
Tetrachloroethene	0.3383400	0.3359341	0.3359341	0.001	-0.71	90.00	AVRG
2-hexanone	0.1138800	0.1296438	0.1296438	0.001	13.84	90.00	AVRG
Dibromochloromethane	0.3063100	0.3251970	0.3251970	0.001	6.16	90.00	AVRG
1,2-Dibromoethane	0.2212400	0.2381472	0.2381472	0.001	7.64	90.00	AVRG
Chlorobenzene	0.9524700	0.9767850	0.9767850	0.3	2.55	90.00	AVRG
Ethylbenzene	0.5213200	0.5262966	0.5262966	0.001	0.95	20.00	AVRG
m,p-Xylene	0.6532300	0.6595862	0.6595862	0.001	0.97	90.00	AVRG
o-Xylene	0.6040100	0.6230579	0.6230579	0.001	3.15	90.00	AVRG
Styrene	0.9948500	1.0487918	1.0487918	0.001	5.42	90.00	AVRG
Bromoform	0.1566200	0.1696737	0.1696737	0.1	8.33	90.00	AVRG
Isopropyl Benzene	1.7613200	1.7841993	1.7841993	0.001	1.30	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5537900	0.5874602	0.5874602	0.3	6.08	90.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/02/09 Time: 1047

Lab File ID: 9G02001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

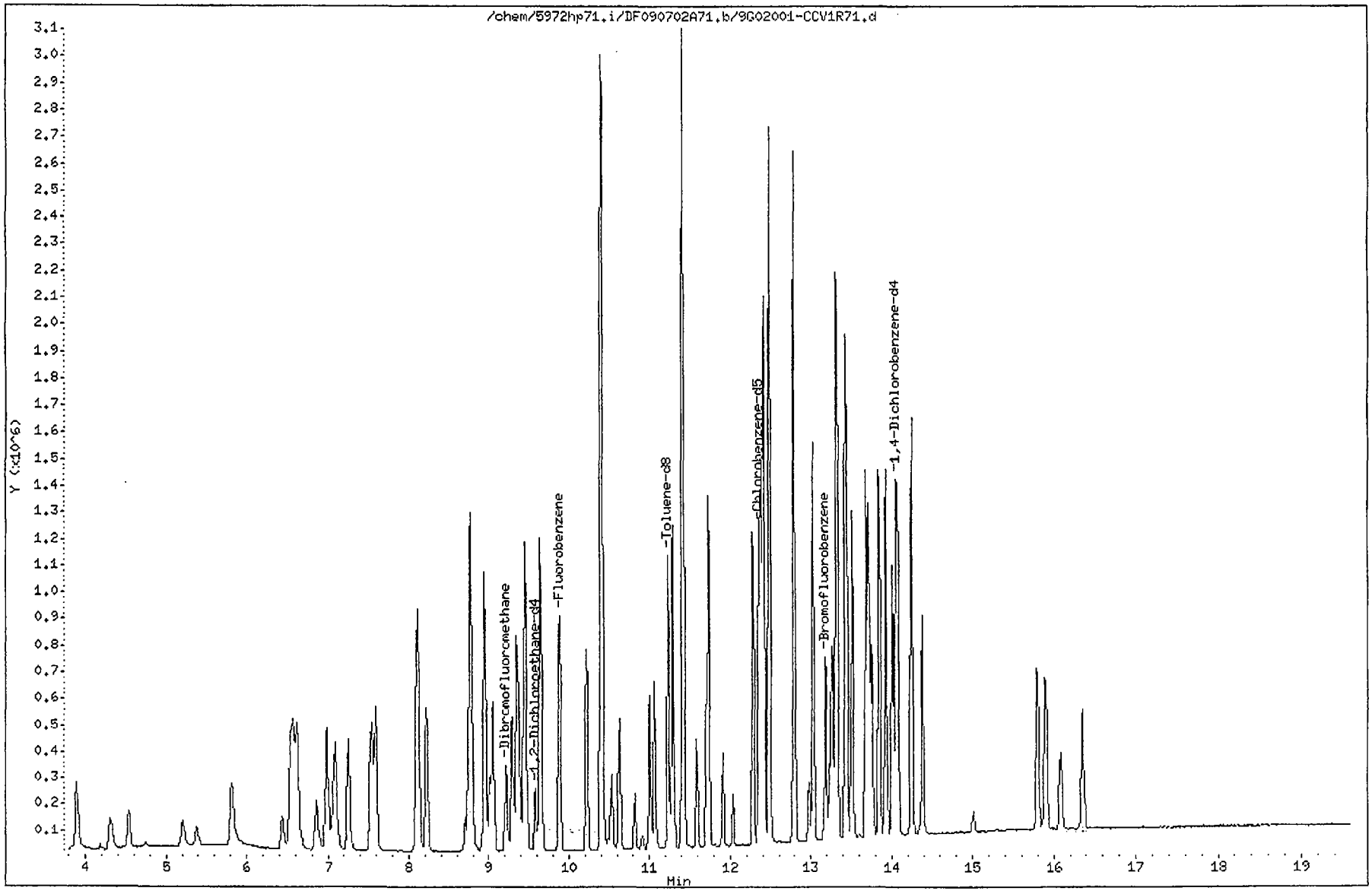
Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.5858400	1.5477068	1.5477068	0.001	-2.40	90.00	AVRG
1,4-Dichlorobenzene	1.5622200	1.5800548	1.5800548	0.001	1.14	90.00	AVRG
1,2-Dichlorobenzene	1.2610600	1.2946184	1.2946184	0.001	2.66	90.00	AVRG
1,2-Dibromo-3-Chloropropane	0.0811800	0.0841708	0.0841708	0.001	3.68	90.00	AVRG
1,2,4-Trichlorobenzene	0.8443400	0.8485300	0.8485300	0.001	0.50	90.00	AVRG
1,2-Dichloroethene (total)	0.2875900	0.2966666	0.2966666	0.001	3.16	90.00	AVRG
Xylene (total)	0.6040100	0.6230579	0.6230579	0.001	3.15	90.00	AVRG
Cyclohexane	0.4152000	0.4287103	0.4287103	0.001	3.25	90.00	AVRG
Methylcyclohexane	0.4591200	0.4844278	0.4844278	0.001	5.51	90.00	AVRG
Dibromofluoromethane	118.08947	125.00000	0.2599284	0.001	-5.53	90.00	LINR
1,2-Dichloroethane-d4	125.37300	125.00000	0.2146647	0.001	0.30	90.00	LINR
Toluene-d8	114.22329	125.00000	1.2539257	0.001	-8.62	90.00	LINR
Bromofluorobenzene	107.90046	125.00000	0.9505560	0.001	-13.68	90.00	LINR

Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-CCV1R71.d
Date : 02-JUL-2009 10:47
Client ID: VSTD005
Sample Info: 9G02002-CCV1:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-CCV1R71.d
Report Date: 06-Jul-2009 15:00

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/9G02001-CCV1R71.d
Lab Smp Id: 9G02002-CCV1 Client Smp ID: VSTD005
Inj Date : 02-JUL-2009 10:47
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G02002-CCV1:JAO
Misc Info : VSTD005
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:00 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 1 Fluorobenzene	96	9.884	9.884	(1.000)	810804	125.000	
* 2 Chlorobenzene-d5	117	12.357	12.357	(1.000)	541115	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.051	14.051	(1.000)	267373	125.000	
$ 4 Dibromofluoromethane	113	9.214	9.214	(0.932)	210751	125.000	120
$ 5 1,2-Dichloroethane-d4	65	9.578	9.578	(0.969)	174051	125.000	130
$ 6 Toluene-d8	98	11.233	11.233	(0.909)	678518	125.000	110
$ 7 Bromofluorobenzene	95	13.184	13.184	(0.938)	254153	125.000	110
8 Dichlorodifluoromethane	85	3.894	3.894	(0.394)	374170	125.000	120
9 Chloromethane	50	4.307	4.307	(0.436)	257925	125.000	110
10 Vinyl Chloride	62	4.534	4.534	(0.459)	217229	125.000	120
11 Bromomethane	94	5.204	5.204	(0.527)	116463	125.000	120
12 Chloroethane	64	5.381	5.381	(0.544)	95927	125.000	130
13 Trichlorofluoromethane	101	5.815	5.815	(0.588)	385384	125.000	130
14 Acrolein	56	6.435	6.435	(0.651)	165678	1250.00	1400
15 1,1,1-trichloro-2,2,2-trifluo	117	6.544	6.544	(0.662)	127751	125.000	130

7/6/09

Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-CCV1R71.d
Report Date: 06-Jul-2009 15:00

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
16 1,1,2-trichloro-1,2,2-trifluo	85	6.573	6.573	(0.665)	157112	125.000	130
17 1,1-Dichloroethene	96	6.623	6.623	(0.670)	216090	125.000	130
18 Acetone	43	6.632	6.632	(0.671)	115730	625.000	630
19 Iodomethane	142	6.859	6.859	(0.694)	309037	125.000	150
20 Carbon disulfide	76	6.987	6.987	(0.707)	962463	125.000	130
22 3-Chloropropene	39	7.086	7.086	(0.717)	261352	125.000	150
23 Acetonitrile	41	7.086	7.086	(0.717)	379242	125.000	150
24 Methyl acetate	43	7.056	7.056	(0.714)	192989	125.000	150
25 Methylene Chloride	84	7.253	7.253	(0.734)	232809	125.000	120
26 Acrylonitrile	53	7.529	7.529	(0.762)	296480	1250.00	1400
28 trans-1,2-Dichloroethene	96	7.598	7.598	(0.769)	238723	125.000	130
27 Methyl-tert-butyl ether	73	7.549	7.549	(0.764)	400659	125.000	140
30 Isopropyl ether	45	8.110	8.110	(0.821)	805500	125.000	130
31 Vinyl acetate	43	8.100	8.100	(0.820)	433770	250.000	250
32 1,1-Dichloroethane	63	8.120	8.120	(0.822)	449946	125.000	130
33 Chloroprene	53	8.219	8.219	(0.832)	395493	125.000	130
34 2-butanone	43	8.701	8.701	(0.880)	210821	625.000	710
35 2,2-Dichloropropane	77	8.770	8.770	(0.887)	421497	125.000	140
36 cis-1,2-Dichloroethene	96	8.760	8.760	(0.886)	242354	125.000	130
37 Propionitrile	54	8.780	8.780	(0.888)	531426	6250.00	7200
38 Methacrylonitrile	41	8.948	8.948	(0.905)	665574	1250.00	1400
39 Bromochloromethane	128	9.017	9.017	(0.912)	79722	125.000	130
40 Chloroform	83	9.056	9.056	(0.916)	450886	125.000	130
42 1,1,1-Trichloroethane	97	9.293	9.293	(0.940)	385908	125.000	130
43 Cyclohexane	84	9.352	9.352	(0.946)	347600	125.000	130
44 1,1-dichloropropene	75	9.440	9.440	(0.955)	384941	125.000	130
45 Isobutyl alcohol	43	9.381	9.381	(0.949)	203368	6250.00	7400
46 Carbon Tetrachloride	117	9.460	9.460	(0.957)	341356	125.000	130
47 Benzene	78	9.637	9.637	(0.975)	909023	125.000	130
48 1,2-Dichloroethane	62	9.647	9.647	(0.976)	233821	125.000	130
49 Trichloroethene	130	10.219	10.219	(1.034)	237821	125.000	130
50 Methylcyclohexane	83	10.406	10.406	(1.053)	392776	125.000	130
51 1,2-Dichloropropane	63	10.425	10.425	(1.055)	214982	125.000	140
52 Methylmethacrylate	69	10.406	10.406	(1.053)	754397	1250.00	1500
53 1,4-dioxane	88	10.485	10.485	(1.061)	34406	6250.00	6700
54 Dibromomethane	174	10.534	10.534	(1.066)	87706	125.000	140
55 Bromodichloromethane	83	10.632	10.632	(1.076)	308699	125.000	130
56 2-chloroethyl vinyl ether	63	10.820	10.820	(1.095)	88244	1250.00	1400
57 cis-1,3-Dichloropropene	75	11.007	11.007	(1.114)	338886	125.000	140
58 4-Methyl-2-pentanone	43	11.066	11.066	(0.896)	519528	625.000	710
59 Toluene	92	11.293	11.293	(0.914)	527266	125.000	120
60 Ethylmethacrylate	69	11.411	11.411	(0.923)	1517747	1250.00	1400
61 trans-1,3-Dichloropropene	75	11.430	11.430	(0.925)	281508	125.000	140
62 1,1,2-Trichloroethane	97	11.588	11.588	(0.938)	119745	125.000	140
63 2-hexanone	43	11.706	11.706	(0.947)	350761	625.000	710
64 1,3-Dichloropropane	76	11.736	11.736	(0.950)	241746	125.000	140
65 Tetrachloroethene	164	11.746	11.746	(0.951)	181779	125.000	120

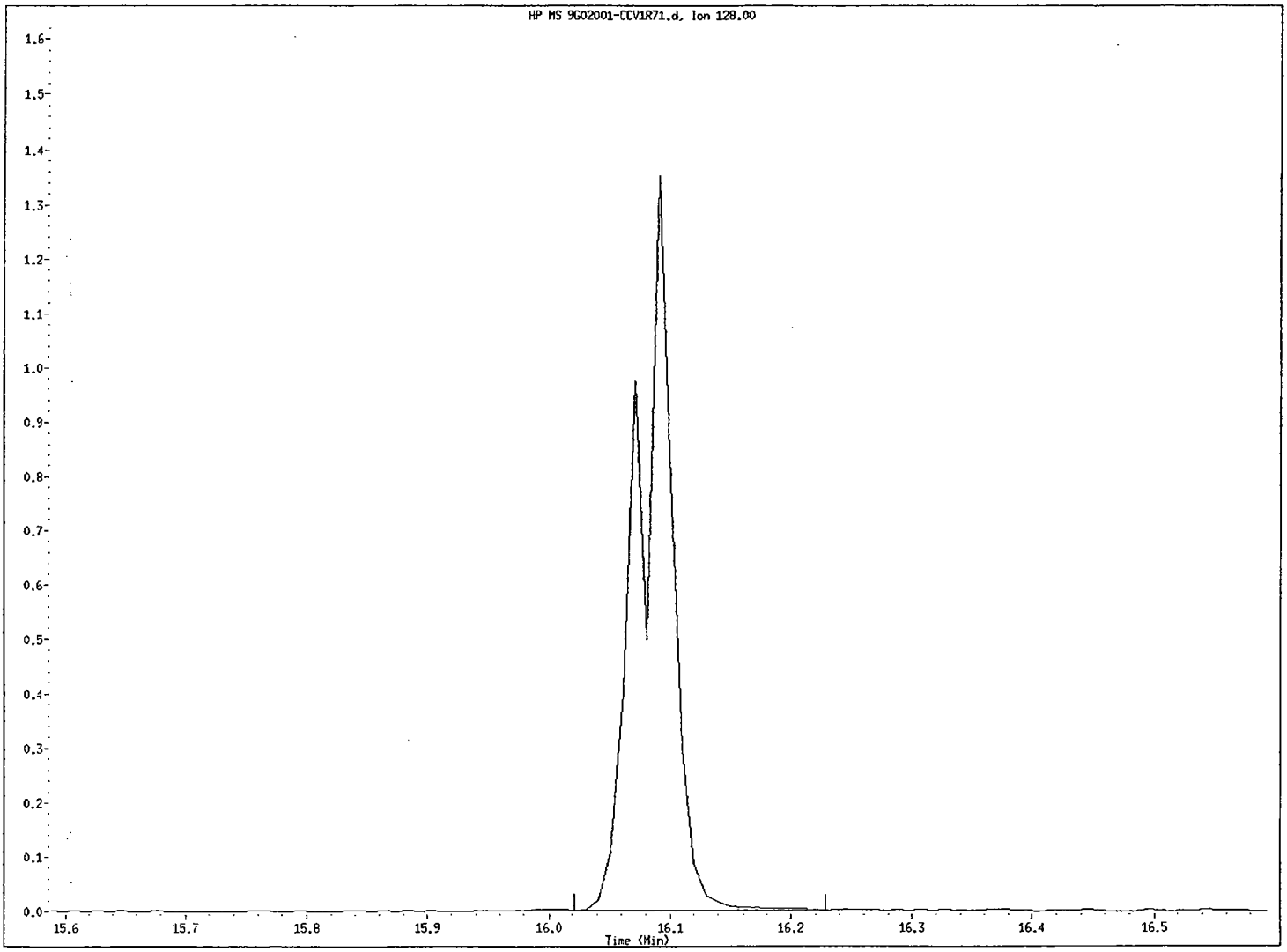
Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-CCV1R71.d
Report Date: 06-Jul-2009 15:00

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)	
66	Dibromochloromethane	129	11.913	11.913	(0.964)	175969	125.000	130	
67	1,2-Dibromoethane	107	12.041	12.041	(0.974)	128865	125.000	130	
68	1-Chlorohexane	55	12.278	12.278	(0.994)	259046	125.000	130	
69	Chlorobenzene	112	12.386	12.386	(1.002)	528553	125.000	130	
70	Ethylbenzene	106	12.416	12.416	(1.005)	284787	125.000	130	
71	1,1,1,2-Tetrachloroethane	131	12.416	12.416	(1.005)	194678	125.000	130	
72	m,p-Xylene	106	12.485	12.485	(1.010)	713824	250.000	250	
73	o-Xylene	106	12.790	12.790	(1.035)	337146	125.000	130	
74	Styrene	104	12.790	12.790	(1.035)	567517	125.000	130	
75	Bromoform	173	12.977	12.977	(1.050)	91813	125.000	140	
76	Isopropyl Benzene	105	13.026	13.026	(1.054)	965457	125.000	130	
77	1,1,2,2-Tetrachloroethane	83	13.233	13.233	(0.942)	157071	125.000	130	
79	1,2,3-Trichloropropane	110	13.302	13.302	(1.077)	35955	125.000	140	
78	trans-1,4-dichloro-2-butene	53	13.263	13.263	(1.073)	149303	500.000	570	
80	n-Propyl Benzene	91	13.322	13.322	(0.948)	1311251	125.000	120	
81	Bromobenzene	156	13.332	13.332	(1.079)	203916	125.000	130	
82	1,3,5-Trimethyl Benzene	105	13.430	13.430	(0.956)	751868	125.000	120	
83	2-Chlorotoluene	126	13.450	13.450	(0.957)	219222	125.000	120	
84	4-Chlorotoluene	126	13.519	13.519	(0.962)	222204	125.000	120	
85	tert-Butyl Benzene	119	13.687	13.687	(0.974)	717389	125.000	120	
86	1,2,4-Trimethyl Benzene	105	13.726	13.726	(0.977)	740794	125.000	120	
87	Pentachloroethane	167	13.765	13.765	(0.980)	130288	125.000	120	
88	sec-Butyl Benzene	105	13.844	13.844	(0.985)	1076516	125.000	120	
89	p-Isopropyl Toluene	119	13.933	13.933	(0.992)	832409	125.000	120	
90	1,3-Dichlorobenzene	146	14.012	14.012	(0.997)	413815	125.000	120	
91	1,4-Dichlorobenzene	146	14.081	14.081	(1.002)	422464	125.000	130	
92	n-Butyl Benzene	91	14.248	14.248	(1.014)	936526	125.000	120	
93	1,2-Dichlorobenzene	146	14.386	14.386	(1.024)	346146	125.000	130	
94	1,2-Dibromo-3-Chloropropane	75	15.007	15.007	(1.068)	22505	125.000	130	
95	1,2,4-Trichlorobenzene	180	15.805	15.805	(1.125)	226874	125.000	130	
96	Hexachlorobutadiene	225	15.903	15.903	(1.132)	131997	125.000	120	
97	Naphthalene	128	16.090	16.090	(1.145)	270734	125.000	110	(M)
98	1,2,3-Trichlorobenzene	180	16.357	16.357	(1.164)	175440	125.000	130	
M 99	1,2-Dichloroethene (total)	96				481077	250.000	260	
M 100	Xylene (total)	106				1050970	125.000	400	

QC Flag Legend

M - Compound response manually integrated.

Naphthalene CAS Number 91-20-3 Area = 270734 Manually integrated



File name: /chem/5972hp71.i/DF090702A71.b/9G02001-CCV1R71.d
Client ID: VSTD005
Instrument ID: 5972hp71.i
Injection Date and Time: 02-JUL-2009 10:47
Retention Time: 16.09
Operator ID: JAO

COMPUCHEM a Division of Liberty Analytical Corp DATE 7/02/09 INITIAL TIME OF TUNE 0931 SHIFT/S(A) ✓ (B)____ (C)____

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 2131 LINKER /METHOD 8260B 25 mL

COMPUCHEM LOGBOOK 11 WWW 28 (5972hp71)

DOD

PREVENTIVE MAINTENANCE none

		FILE NAME	Rep	DF	Vial	DATE	TIME	Client ID	SDG#	INJ. VOL	DF+	CHEMIST	COMMENTS(BTC) DISPOSITION
1		9G02001-TUN1		—	—	7/02/09	0931	BFB	—	2uL	—	JAD	LCD=SAD
2		-CCV1	DS	—	—	/ /	1003	VSTD005	—	25mL	—		
3		-CCV1R		—	—	/ /	1047	VSTD005	—	↓	—		
4		9070206-BLK1		—	—	/ /	1125	VBLKJH	VARIOUS	25mL	—		
5		-BS1		—	—	/ /	1208	VJHLCS	↓	↓	—		Passes TCL4+1,2,3-TCB DO
6		-BSD1		—	—	/ /	1236	VJHLCSD	↓	↓	—		↓
7		0907002-04	VR	1	A	/ /	1304	YS06-TB-063009	0907002	25mL	—		acetone
8		-03		1	A	/ /	1332	-FB01-063009			—		
9		-02		1	A	/ /	1400	-EB01-063009			—		
10		-01		1	A	/ /	1429	-GW16-0609	↓	↓	—		
11		0906212-01		1	A	/ /	1515	NBS06-MW03A-09B	0906212	25mL	—		
12		9070206-MS1		1	B	/ /	1543	MS	0906212		—		
13		-MSD1		1	C	/ /	1611	MSD	↓	↓	—		
14		0906212-02		1	A	/ /	1639	NBS06-MW05B-09B			—		
15		-03		1	A	/ /	1707	TB062909			—		
16		-04		1	A	/ /	1735	FB063009			—		
17		-05		1	A	/ /	1803	MW11AR-09B			—		
18		-06		7	A	/ /	1831	MW04A-09B			—		
19		-07		1	A	/ /	1900	MW02B-09B			—		
20		-08		1	A	/ /	1928	EB063009			—		
21		-09		1	A	/ /	1956	MW01B-09B			—		
22		-10		1	A	/ /	2024	MW12A-09B			—		
23		-11		3	A	↓ /	2052	MW12AP-09B	↓	↓	—	↓	
24						/ /		7-03-09					

*On-column sample aliquot +Not applicable to soil matrix

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Tune (ID #7008) Lot #: L6747 Calibration Group Code / Lot #: DC482

Reviewed by: _____ Date 7.6.9 Archon Internal Standard #: 66763

03/02/09: jr

Sorr

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/06/09 Time: 1152

Lab File ID: 9G06001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.4670800	0.3684902	0.3684902	0.001	-21.11	90.00	AVRG
Chloromethane	0.3626600	0.2829618	0.2829618	0.1	-21.98	90.00	AVRG
Vinyl Chloride	0.2698300	0.2351095	0.2351095	0.001	-12.87	20.00	AVRG
Bromomethane	120.18410	125.00000	0.1377655	0.001	-3.85	90.00	LINR
Chloroethane	0.1137200	0.1058385	0.1058385	0.001	-6.93	90.00	AVRG
Trichlorofluoromethane	0.4542000	0.4332877	0.4332877	0.001	-4.60	90.00	AVRG
1,1-Dichloroethene	0.2516100	0.2318219	0.2318219	0.001	-7.86	20.00	AVRG
Carbon disulfide	1.1333900	1.0732132	1.0732132	0.001	-5.31	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1831500	0.1679331	0.1679331	0.001	-8.31	90.00	AVRG
Acetone	0.0284900	0.0243326	0.0243326	0.001	-14.59	90.00	AVRG
Methyl acetate	0.2027500	0.2095150	0.2095150	0.001	3.34	90.00	AVRG
Methylene Chloride	105.11337	125.00000	0.2508645	0.001	-15.91	90.00	LINR
trans-1,2-Dichloroethene	0.2873100	0.2621677	0.2621677	0.001	-8.75	90.00	AVRG
Methyl-tert-butyl ether	0.4324500	0.4087787	0.4087787	0.001	-5.47	90.00	AVRG
1,1-Dichloroethane	0.5362600	0.5298482	0.5298482	0.1	-1.20	90.00	AVRG
cis-1,2-Dichloroethene	0.2878700	0.2650422	0.2650422	0.001	-7.93	90.00	AVRG
2-butanone	0.0460000	0.0439571	0.0439571	0.001	-4.44	90.00	AVRG
Chloroform	0.5384900	0.5015173	0.5015173	0.001	-6.86	20.00	AVRG
1,1,1-Trichloroethane	0.4609700	0.4195811	0.4195811	0.001	-8.98	90.00	AVRG
Carbon Tetrachloride	0.4059300	0.3717907	0.3717907	0.001	-8.41	90.00	AVRG
Benzene	1.0737000	1.0235654	1.0235654	0.001	-4.67	90.00	AVRG
1,2-Dichloroethane	0.2686300	0.2632661	0.2632661	0.001	-2.00	90.00	AVRG
Trichloroethene	0.2778400	0.2491271	0.2491271	0.001	-10.33	90.00	AVRG
1,2-Dichloropropane	0.2411400	0.2491116	0.2491116	0.001	3.30	20.00	AVRG
Bromodichloromethane	0.3565200	0.3307432	0.3307432	0.001	-7.23	90.00	AVRG
cis-1,3-Dichloropropene	0.3836200	0.3632859	0.3632859	0.001	-5.30	90.00	AVRG
4-Methyl-2-pentanone	0.1692900	0.1623093	0.1623093	0.001	-4.12	90.00	AVRG
Toluene	0.9805700	0.8610876	0.8610876	0.001	-12.18	20.00	AVRG
trans-1,3-Dichloropropene	0.4788400	0.4392386	0.4392386	0.001	-8.27	90.00	AVRG
1,1,2-Trichloroethane	0.2020700	0.1788519	0.1788519	0.001	-11.49	90.00	AVRG
Tetrachloroethene	0.3383400	0.2676247	0.2676247	0.001	-20.90	90.00	AVRG
2-hexanone	0.1138800	0.1073679	0.1073679	0.001	-5.72	90.00	AVRG
Dibromochloromethane	0.3063100	0.2704119	0.2704119	0.001	-11.72	90.00	AVRG
1,2-Dibromoethane	0.2212400	0.1936642	0.1936642	0.001	-12.46	90.00	AVRG
Chlorobenzene	0.9524700	0.8191287	0.8191287	0.3	-14.00	90.00	AVRG
Ethylbenzene	0.5213200	0.4440898	0.4440898	0.001	-14.81	20.00	AVRG
m,p-Xylene	0.6532300	0.5599344	0.5599344	0.001	-14.28	90.00	AVRG
o-Xylene	0.6040100	0.5210066	0.5210066	0.001	-13.74	90.00	AVRG
Styrene	0.9948500	0.8564112	0.8564112	0.001	-13.92	90.00	AVRG
Bromoform	0.1566200	0.1263722	0.1263722	0.1	-19.31	90.00	AVRG
Isopropyl Benzene	1.7613200	1.4895453	1.4895453	0.001	-15.43	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5537900	0.5312359	0.5312359	0.3	-4.07	90.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/06/09 Time: 1152

Lab File ID: 9G06001-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

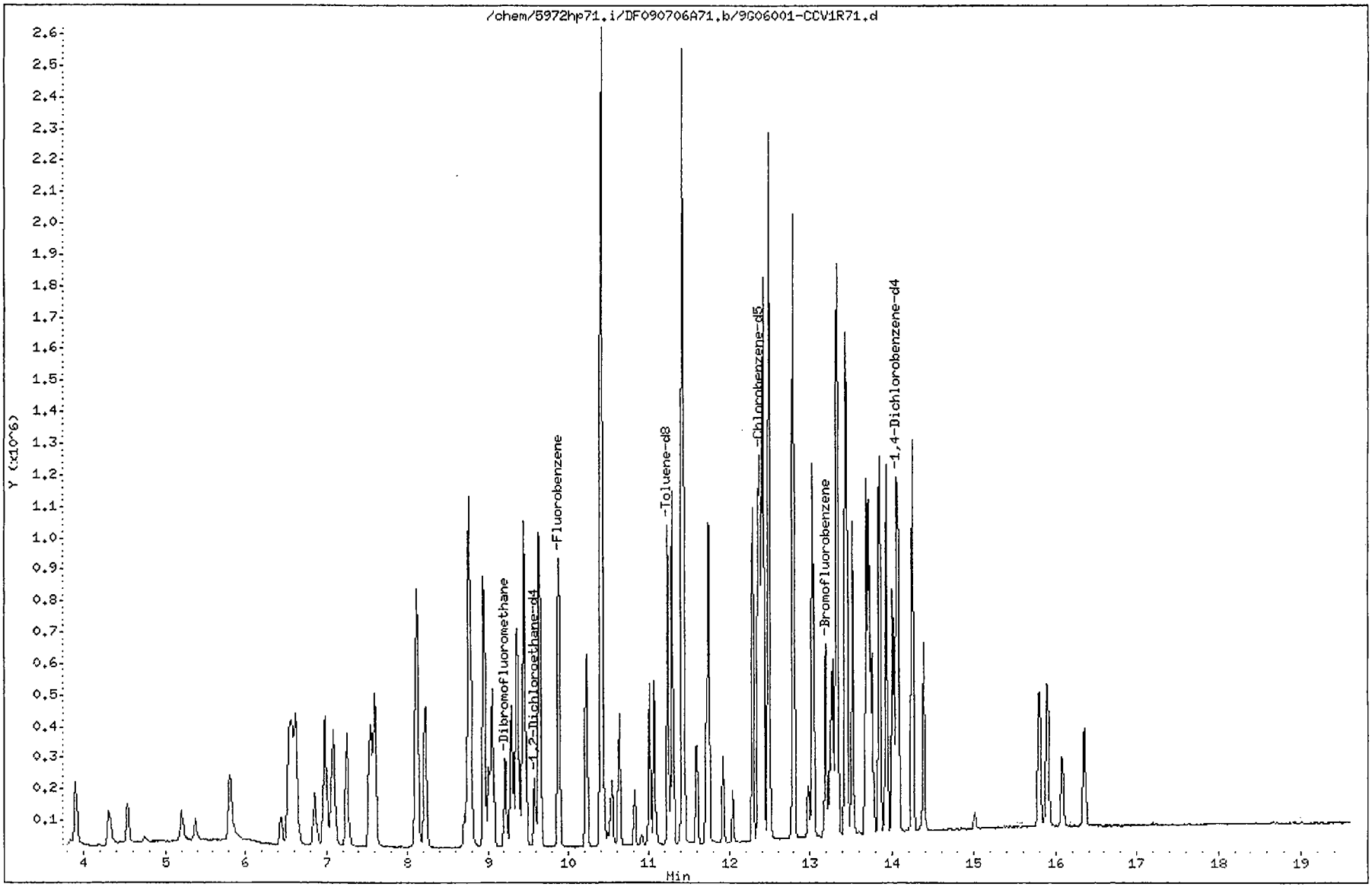
Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.5858400	1.3585828	1.3585828	0.001	-14.33	90.00	AVRG
1,4-Dichlorobenzene	1.5622200	1.3202880	1.3202880	0.001	-15.49	90.00	AVRG
1,2-Dichlorobenzene	1.2610600	1.0939336	1.0939336	0.001	-13.25	90.00	AVRG
1,2-Dibromo-3-Chloropropane	0.0811800	0.0746788	0.0746788	0.001	-8.01	90.00	AVRG
1,2,4-Trichlorobenzene	0.8443400	0.6634374	0.6634374	0.001	-21.42	90.00	AVRG
1,2-Dichloroethene (total)	0.2875900	0.2636049	0.2636049	0.001	-8.34	90.00	AVRG
Xylene (total)	0.6040100	0.5210066	0.5210066	0.001	-13.74	90.00	AVRG
Cyclohexane	0.4152000	0.3656002	0.3656002	0.001	-11.95	90.00	AVRG
Methylcyclohexane	0.4591200	0.4319634	0.4319634	0.001	-5.91	90.00	AVRG
Dibromofluoromethane	110.00681	125.00000	0.2427056	0.001	-11.99	90.00	LINR
1,2-Dichloroethane-d4	118.48385	125.00000	0.2030521	0.001	-5.21	90.00	LINR
Toluene-d8	107.46827	125.00000	1.1950267	0.001	-14.02	90.00	LINR
Bromofluorobenzene	114.22944	125.00000	0.9975165	0.001	-8.62	90.00	LINR

Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-CCV1R71.d
Date : 06-JUL-2009 11:52
Client ID: VSTD005
Sample Info: 9G06001-CCV1:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-CCV1R71.d
Report Date: 07-Jul-2009 14:53

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090706A71.b/9G06001-CCV1R71.d
Lab Smp Id: 9G06001-CCV1 Client Smp ID: VSTD005
Inj Date : 06-JUL-2009 11:52
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G06001-CCV1:JAO
Misc Info : VSTD005
Comment :
Method : /chem/5972hp71.i/DF090706A71.b/W8260-B-25MLv11.m
Meth Date : 07-Jul-2009 14:53 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
*	1 Fluorobenzene	96	9.882	9.882	(1.000)	774737	125.000	
*	2 Chlorobenzene-d5	117	12.365	12.365	(1.000)	514504	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.059	14.059	(1.000)	223477	125.000	
$	4 Dibromofluoromethane	113	9.212	9.212	(0.932)	188033	125.000	110
$	5 1,2-Dichloroethane-d4	65	9.577	9.577	(0.969)	157312	125.000	120
$	6 Toluene-d8	98	11.232	11.232	(0.908)	614846	125.000	110
$	7 Bromofluorobenzene	95	13.192	13.192	(0.938)	222922	125.000	110
	8 Dichlorodifluoromethane	85	3.892	3.892	(0.394)	285483	125.000	99
	9 Chloromethane	50	4.306	4.306	(0.436)	219221	125.000	98
	10 Vinyl Chloride	62	4.532	4.532	(0.459)	182148	125.000	110
	11 Bromomethane	94	5.202	5.202	(0.526)	106732	125.000	120
	12 Chloroethane	64	5.380	5.380	(0.544)	81997	125.000	120
	13 Trichlorofluoromethane	101	5.813	5.813	(0.588)	335684	125.000	120
	14 Acrolein	56	6.444	6.444	(0.652)	113748	1250.00	970
	15 1,1,1-trichloro-2,2,2-trifluo	117	6.542	6.542	(0.662)	104789	125.000	110

7/7/09

Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-CCV1R71.d
Report Date: 07-Jul-2009 14:53

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
16 1,1,2-trichloro-1,2,2-trifluo	85	6.582	6.582	(0.666)	130104	125.000	110
17 1,1-Dichloroethene	96	6.621	6.621	(0.670)	179601	125.000	120
18 Acetone	43	6.631	6.631	(0.671)	94257	625.000	530
19 Iodomethane	142	6.858	6.858	(0.694)	260393	125.000	140
20 Carbon disulfide	76	6.986	6.986	(0.707)	831458	125.000	120
22 3-Chloropropene	39	7.094	7.094	(0.718)	240526	125.000	150
23 Acetonitrile	41	7.094	7.094	(0.718)	348619	125.000	140
24 Methyl acetate	43	7.055	7.055	(0.714)	162319	125.000	130
25 Methylene Chloride	84	7.252	7.252	(0.734)	194354	125.000	110
26 Acrylonitrile	53	7.537	7.537	(0.763)	241315	1250.00	1200
28 trans-1,2-Dichloroethene	96	7.596	7.596	(0.769)	203111	125.000	110
27 Methyl-tert-butyl ether	73	7.557	7.557	(0.765)	316696	125.000	120
30 Isopropyl ether	45	8.109	8.109	(0.821)	702230	125.000	120
31 Vinyl acetate	43	8.109	8.109	(0.821)	353034	250.000	210
32 1,1-Dichloroethane	63	8.128	8.128	(0.823)	410493	125.000	120
33 Chloroprene	53	8.227	8.227	(0.833)	340856	125.000	120
34 2-butanone	43	8.710	8.710	(0.881)	170276	625.000	600
35 2,2-Dichloropropane	77	8.769	8.769	(0.887)	354621	125.000	120
36 cis-1,2-Dichloroethene	96	8.769	8.769	(0.887)	205338	125.000	120
37 Propionitrile	54	8.789	8.789	(0.889)	449852	6250.00	6400
38 Methacrylonitrile	41	8.946	8.946	(0.905)	556162	1250.00	1200
39 Bromochloromethane	128	9.015	9.015	(0.912)	66146	125.000	120
40 Chloroform	83	9.055	9.055	(0.916)	388544	125.000	120
42 1,1,1-Trichloroethane	97	9.291	9.291	(0.940)	325065	125.000	110
43 Cyclohexane	84	9.360	9.360	(0.947)	283244	125.000	110
44 1,1-dichloropropene	75	9.449	9.449	(0.956)	322167	125.000	110
45 Isobutyl alcohol	43	9.390	9.390	(0.950)	179023	6250.00	6800
46 Carbon Tetrachloride	117	9.459	9.459	(0.957)	288040	125.000	110
47 Benzene	78	9.636	9.636	(0.975)	792994	125.000	120
48 1,2-Dichloroethane	62	9.646	9.646	(0.976)	203962	125.000	120
49 Trichloroethene	130	10.227	10.227	(1.035)	193008	125.000	110
50 Methylcyclohexane	83	10.404	10.404	(1.053)	334658	125.000	120
51 1,2-Dichloropropane	63	10.424	10.424	(1.055)	192996	125.000	130
52 Methylmethacrylate	69	10.414	10.414	(1.054)	612660	1250.00	1300
53 1,4-dioxane	88	10.493	10.493	(1.062)	28672	6250.00	5800
54 Dibromomethane	174	10.542	10.542	(1.067)	64519	125.000	110
55 Bromodichloromethane	83	10.631	10.631	(1.076)	256239	125.000	120
56 2-chloroethyl vinyl ether	63	10.818	10.818	(1.095)	80256	1250.00	1300
57 cis-1,3-Dichloropropene	75	11.005	11.005	(1.114)	281451	125.000	120
58 4-Methyl-2-pentanone	43	11.064	11.064	(0.895)	417544	625.000	600
59 Toluene	92	11.291	11.291	(0.913)	443033	125.000	110
60 Ethylmethacrylate	69	11.419	11.419	(0.923)	1200910	1250.00	1200
61 trans-1,3-Dichloropropene	75	11.439	11.439	(0.925)	225990	125.000	110
62 1,1,2-Trichloroethane	97	11.596	11.596	(0.938)	92020	125.000	110
63 2-hexanone	43	11.715	11.715	(0.947)	276206	625.000	590
64 1,3-Dichloropropane	76	11.734	11.734	(0.949)	194677	125.000	120
65 Tetrachloroethene	164	11.744	11.744	(0.950)	137694	125.000	99

Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-CCV1R71.d
Report Date: 07-Jul-2009 14:53

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	AMOUNTS ON-COL (ng)
66	Dibromochloromethane	129	11.922	11.922	(0.964)	139128	125.000	110
67	1,2-Dibromoethane	107	12.040	12.040	(0.974)	99641	125.000	110
68	1-Chlorohexane	55	12.286	12.286	(0.994)	222341	125.000	120
69	Chlorobenzene	112	12.385	12.385	(1.002)	421445	125.000	110
70	Ethylbenzene	106	12.414	12.414	(1.004)	228486	125.000	110
71	1,1,1,2-Tetrachloroethane	131	12.424	12.424	(1.005)	155812	125.000	110
72	m,p-Xylene	106	12.493	12.493	(1.010)	576177	250.000	210
73	o-Xylene	106	12.789	12.789	(1.034)	268060	125.000	110
74	Styrene	104	12.798	12.798	(1.035)	440627	125.000	110
75	Bromoform	173	12.976	12.976	(1.049)	65019	125.000	100
76	Isopropyl Benzene	105	13.035	13.035	(1.054)	766377	125.000	110
77	1,1,2,2-Tetrachloroethane	83	13.232	13.232	(0.941)	118719	125.000	120
79	1,2,3-Trichloropropane	110	13.301	13.301	(1.076)	26525	125.000	110
78	trans-1,4-dichloro-2-butene	53	13.271	13.271	(1.073)	117293	500.000	470
80	n-Propyl Benzene	91	13.330	13.330	(0.948)	1048760	125.000	120
81	Bromobenzene	156	13.340	13.340	(1.079)	148981	125.000	99
82	1,3,5-Trimethyl Benzene	105	13.429	13.429	(0.955)	597683	125.000	110
83	2-Chlorotoluene	126	13.449	13.449	(0.957)	170508	125.000	120
84	4-Chlorotoluene	126	13.518	13.518	(0.961)	167540	125.000	110
85	tert-Butyl Benzene	119	13.685	13.685	(0.973)	568561	125.000	110
86	1,2,4-Trimethyl Benzene	105	13.724	13.724	(0.976)	581744	125.000	110
87	Pentachloroethane	167	13.764	13.764	(0.979)	95853	125.000	110
88	sec-Butyl Benzene	105	13.853	13.853	(0.985)	861974	125.000	110
89	p-Isopropyl Toluene	119	13.931	13.931	(0.991)	659745	125.000	110
90	1,3-Dichlorobenzene	146	14.010	14.010	(0.996)	303612	125.000	110
91	1,4-Dichlorobenzene	146	14.079	14.079	(1.001)	295054	125.000	110
92	n-Butyl Benzene	91	14.247	14.247	(1.013)	756123	125.000	120
93	1,2-Dichlorobenzene	146	14.385	14.385	(1.023)	244469	125.000	110
94	1,2-Dibromo-3-Chloropropane	75	15.005	15.005	(1.067)	16689	125.000	110
95	1,2,4-Trichlorobenzene	180	15.803	15.803	(1.124)	148263	125.000	98
96	Hexachlorobutadiene	225	15.902	15.902	(1.131)	94433	125.000	100
97	Naphthalene	128	16.079	16.079	(1.144)	219113	125.000	100
98	1,2,3-Trichlorobenzene	180	16.355	16.355	(1.163)	113474	125.000	99
M 99	1,2-Dichloroethene (total)	96				408449	250.000	230
M 100	Xylene (total)	106				844237	125.000	340

COMPUCHEM a Division of Liberty Analytical Corp DATE 7/06/09 INITIAL TIME OF TUNE 1049 SHIFT/S(A) ✓ (B) ____ (C) ____

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 2249 LINKER /METHOD 8260B 25mL

COMPUCHEM LOGBOOK 11 WWW 28 (5972hp71) DoD

PREVENTIVE MAINTENANCE none

		FILE NAME		pH	Vial	DATE	TIME	Client ID	SDG#	INJ VOL*	DF+	CHEMIST	COMMENTS (ETC.) / DISPOSITION
1		9G06001-TUN1	\	—	—	7/06/09	1049	BFB	—	2uL	—	JAD	LCD=SCD
2		-CCV1	\ Vs	—	—	/ /	1115	VSTD005	—	25mL	—		
3		-CCV1R	\	—	—	/ /	1152	VSTD005	—	↓	—		
4		9070612-BLK1	\	—	—	/ /	1228	VBLKJI	VARIOUS	25mL	—		
5		-BS1	\	—	—	/ /	1307	VJILCS	↓	↓	—		Passes TCL+1,2,3TCB-Dol
6		-BSD1	\	—	—	/ /	1335	VJILCSD	↓	↓	—		
7		0907002-04R	\	1	B	/ /	1403	YS06-TB01-063009	0907002	25mL	—		
8		0906212-13	\	1	A	/ /	1431	NBS06-TB063009	0906212	↓	—		
9		↓ -12	\	1	A	/ /	1500	NBS06-MW06B-09B	↓	↓	—		
10		0906164-04	\	—	ampule	/ ↓ /	1528	D5AE7	0906164	25mL	—	↓	test out of SOM Trace 1st run 0907071A91
11		0905072-01	\	—	ampule	7/06/09	1629	D58D6	0905072	25mL	—	JAD	
12						/ /							
13						/ /							
14						/ /							
15						/ /							
16						/ /							
17						/ /							
18						/ /							
19						/ /							
20						/ /							
21						/ /							
22						/ /							
23						/ /							
24						/ /							

*On-column sample aliquot +Not applicable to soil matrix

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Tune (ID #7008) Lot #: 66747 Calibration Group Code / Lot #: PC482

Reviewed by: [signature] Date 7-6-9 Archon Internal Standard #: 66763

03/02/09: jr

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/09/09 Time: 1738

Lab File ID: 9G09007-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.4670800	0.3583786	0.3583786	0.001	-23.27	90.00	AVRG
Chloromethane	0.3626600	0.3192697	0.3192697	0.1	-11.96	90.00	AVRG
Vinyl Chloride	0.2698300	0.2776359	0.2776359	0.001	2.89	20.00	AVRG
Bromomethane	144.48280	125.00000	0.1677824	0.001	15.59	90.00	LINR
Chloroethane	0.1137200	0.1284666	0.1284666	0.001	12.97	90.00	AVRG
Trichlorofluoromethane	0.4542000	0.4841016	0.4841016	0.001	6.58	90.00	AVRG
1,1-Dichloroethene	0.2516100	0.2470707	0.2470707	0.001	-1.80	20.00	AVRG
Carbon disulfide	1.1333900	1.1425433	1.1425433	0.001	0.81	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.1831500	0.1740956	0.1740956	0.001	-4.94	90.00	AVRG
Acetone	0.0284900	0.0264999	0.0264999	0.001	-6.98	90.00	AVRG
Methyl acetate	0.2027500	0.2397114	0.2397114	0.001	18.23	90.00	AVRG
Methylene Chloride	120.21924	125.00000	0.2821240	0.001	-3.82	90.00	LINR
trans-1,2-Dichloroethene	0.2873100	0.2824826	0.2824826	0.001	-1.68	90.00	AVRG
Methyl-tert-butyl ether	0.4324500	0.4558315	0.4558315	0.001	5.41	90.00	AVRG
1,1-Dichloroethane	0.5362600	0.5684904	0.5684904	0.1	6.01	90.00	AVRG
cis-1,2-Dichloroethene	0.2878700	0.2960301	0.2960301	0.001	2.83	90.00	AVRG
2-butanone	0.0460000	0.0483086	0.0483086	0.001	5.02	90.00	AVRG
Chloroform	0.5384900	0.5585487	0.5585487	0.001	3.72	20.00	AVRG
1,1,1-Trichloroethane	0.4609700	0.4484856	0.4484856	0.001	-2.71	90.00	AVRG
Carbon Tetrachloride	0.4059300	0.3965436	0.3965436	0.001	-2.31	90.00	AVRG
Benzene	1.0737000	1.1319448	1.1319448	0.001	5.42	90.00	AVRG
1,2-Dichloroethane	0.2686300	0.2841304	0.2841304	0.001	5.77	90.00	AVRG
Trichloroethene	0.2778400	0.2725986	0.2725986	0.001	-1.89	90.00	AVRG
1,2-Dichloropropane	0.2411400	0.2750387	0.2750387	0.001	14.06	20.00	AVRG
Bromodichloromethane	0.3565200	0.3739903	0.3739903	0.001	4.90	90.00	AVRG
cis-1,3-Dichloropropene	0.3836200	0.4062275	0.4062275	0.001	5.89	90.00	AVRG
4-Methyl-2-pentanone	0.1692900	0.1754108	0.1754108	0.001	3.62	90.00	AVRG
Toluene	0.9805700	0.9316298	0.9316298	0.001	-4.99	20.00	AVRG
trans-1,3-Dichloropropene	0.4788400	0.4835271	0.4835271	0.001	0.98	90.00	AVRG
1,1,2-Trichloroethane	0.2020700	0.2001455	0.2001455	0.001	-0.95	90.00	AVRG
Tetrachloroethene	0.3383400	0.2848147	0.2848147	0.001	-15.82	90.00	AVRG
2-hexanone	0.1138800	0.1169631	0.1169631	0.001	2.71	90.00	AVRG
Dibromochloromethane	0.3063100	0.2975617	0.2975617	0.001	-2.86	90.00	AVRG
1,2-Dibromoethane	0.2212400	0.2181245	0.2181245	0.001	-1.41	90.00	AVRG
Chlorobenzene	0.9524700	0.9104467	0.9104467	0.3	-4.41	90.00	AVRG
Ethylbenzene	0.5213200	0.4834342	0.4834342	0.001	-7.27	20.00	AVRG
m,p-Xylene	0.6532300	0.6032353	0.6032353	0.001	-7.65	90.00	AVRG
o-Xylene	0.6040100	0.5713786	0.5713786	0.001	-5.40	90.00	AVRG
Styrene	0.9948500	0.9471915	0.9471915	0.001	-4.79	90.00	AVRG
Bromoform	0.1566200	0.1371575	0.1371575	0.1	-12.43	90.00	AVRG
Isopropyl Benzene	1.7613200	1.5686786	1.5686786	0.001	-10.94	90.00	AVRG
1,1,2,2-Tetrachloroethane	0.5537900	0.6022653	0.6022653	0.3	8.75	90.00	AVRG

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Instrument ID: 5972HP71 Calibration Date: 07/09/09 Time: 1738

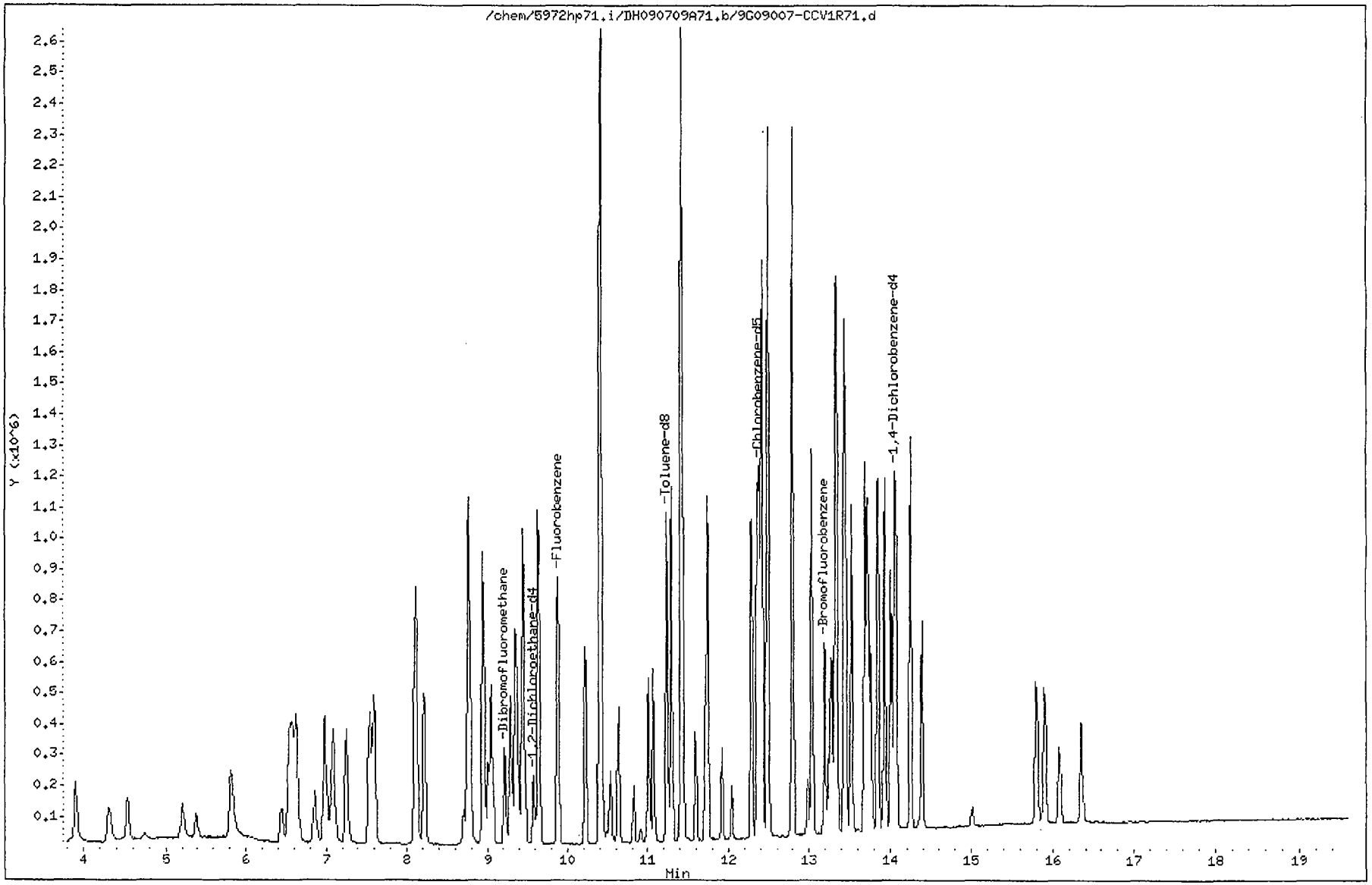
Lab File ID: 9G09007-CCV1R7 Init. Calib. Date(s): 07/01/09 07/01/09

Init. Calib. Times: 1725 1946

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.5858400	1.4499871	1.4499871	0.001	-8.57	90.00	AVRG
1,4-Dichlorobenzene	1.5622200	1.4748368	1.4748368	0.001	-5.59	90.00	AVRG
1,2-Dichlorobenzene	1.2610600	1.1942100	1.1942100	0.001	-5.30	90.00	AVRG
1,2-Dibromo-3-Chloropropane	0.0811800	0.0831330	0.0831330	0.001	2.40	90.00	AVRG
1,2,4-Trichlorobenzene	0.8443400	0.6977352	0.6977352	0.001	-17.36	90.00	AVRG
1,2-Dichloroethene (total)	0.2875900	0.2892564	0.2892564	0.001	0.58	90.00	AVRG
Xylene (total)	0.6040100	0.5713786	0.5713786	0.001	-5.40	90.00	AVRG
Cyclohexane	0.4152000	0.3925604	0.3925604	0.001	-5.45	90.00	AVRG
Methylcyclohexane	0.4591200	0.4536747	0.4536747	0.001	-1.19	90.00	AVRG
Dibromofluoromethane	119.52748	125.00000	0.2629926	0.001	-4.38	90.00	LINR
1,2-Dichloroethane-d4	124.36814	125.00000	0.2129709	0.001	-0.50	90.00	LINR
Toluene-d8	115.56290	125.00000	1.2656062	0.001	-7.55	90.00	LINR
Bromofluorobenzene	119.01049	125.00000	1.0329916	0.001	-4.79	90.00	LINR

Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-CCV1R71.d
Date : 09-JUL-2009 17:38
Client ID: VSTD005
Instrument: 5972hp71.i
Sample Info: 9G09007-CCV1:JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-CCV1R71.d
Report Date: 10-Jul-2009 18:22

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/9G09007-CCV1R71.d
Lab Smp Id: 9G09007-CCV1 Client Smp ID: VSTD005
Inj Date : 09-JUL-2009 17:38
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9G09007-CCV1:JAO
Misc Info : VSTD005
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 4 Continuing Calibration Sample
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: DC.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
* 1 Fluorobenzene	96	9.883	9.883	(1.000)	744637	125.000	
* 2 Chlorobenzene-d5	117	12.356	12.356	(1.000)	505922	125.000	
* 3 1,4-Dichlorobenzene-d4	152	14.060	14.060	(1.000)	221693	125.000	
$ 4 Dibromofluoromethane	113	9.213	9.213	(0.932)	195834	125.000	120
$ 5 1,2-Dichloroethane-d4	65	9.577	9.577	(0.969)	158586	125.000	120
$ 6 Toluene-d8	98	11.233	11.233	(0.909)	640298	125.000	120
$ 7 Bromofluorobenzene	95	13.183	13.183	(0.938)	229007	125.000	120
8 Dichlorodifluoromethane	85	3.893	3.893	(0.394)	266862	125.000	96
9 Chloromethane	50	4.306	4.306	(0.436)	237740	125.000	110
10 Vinyl Chloride	62	4.533	4.533	(0.459)	206738	125.000	130
11 Bromomethane	94	5.203	5.203	(0.526)	124937	125.000	140
12 Chloroethane	64	5.380	5.380	(0.544)	95661	125.000	140
13 Trichlorofluoromethane	101	5.814	5.814	(0.588)	360480	125.000	130
14 Acrolein	56	6.444	6.444	(0.652)	140681	1250.00	1300
15 1,1,1-trichloro-2,2,2-trifluo	117	6.543	6.543	(0.662)	105019	125.000	120

7/10/09

Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-CCV1R71.d
Report Date: 10-Jul-2009 18:22

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
16 1,1,2-trichloro-1,2,2-trifluo	85	6.572	6.572	(0.665)	129638	125.000	120
17 1,1-Dichloroethene	96	6.622	6.622	(0.670)	183978	125.000	120
18 Acetone	43	6.632	6.632	(0.671)	98664	625.000	580
19 Iodomethane	142	6.858	6.858	(0.694)	260589	125.000	140
20 Carbon disulfide	76	6.986	6.986	(0.707)	850780	125.000	130
22 3-Chloropropene	39	7.095	7.095	(0.718)	243934	125.000	160
23 Acetonitrile	41	7.095	7.095	(0.718)	351733	125.000	150
24 Methyl acetate	43	7.055	7.055	(0.714)	178498	125.000	150
25 Methylene Chloride	84	7.252	7.252	(0.734)	210080	125.000	120
26 Acrylonitrile	53	7.528	7.528	(0.762)	256527	1250.00	1400
28 trans-1,2-Dichloroethene	96	7.597	7.597	(0.769)	210347	125.000	120
27 Methyl-tert-butyl ether	73	7.548	7.548	(0.764)	339429	125.000	130
30 Isopropyl ether	45	8.109	8.109	(0.821)	745257	125.000	130
31 Vinyl acetate	43	8.109	8.109	(0.821)	330816	250.000	210
32 1,1-Dichloroethane	63	8.119	8.119	(0.822)	423319	125.000	130
33 Chloroprene	53	8.218	8.218	(0.832)	364960	125.000	130
34 2-butanone	43	8.701	8.701	(0.880)	179862	625.000	660
35 2,2-Dichloropropane	77	8.769	8.769	(0.887)	343155	125.000	120
36 cis-1,2-Dichloroethene	96	8.760	8.760	(0.886)	220435	125.000	130
37 Propionitrile	54	8.779	8.779	(0.888)	467881	6250.00	6900
38 Methacrylonitrile	41	8.947	8.947	(0.905)	596832	1250.00	1400
39 Bromochloromethane	128	9.016	9.016	(0.912)	71056	125.000	130
40 Chloroform	83	9.055	9.055	(0.916)	415916	125.000	130
42 1,1,1-Trichloroethane	97	9.292	9.292	(0.940)	333959	125.000	120
43 Cyclohexane	84	9.351	9.351	(0.946)	292315	125.000	120
44 1,1-dichloropropene	75	9.439	9.439	(0.955)	339438	125.000	130
45 Isobutyl alcohol	43	9.390	9.390	(0.950)	172028	6250.00	6800
46 Carbon Tetrachloride	117	9.459	9.459	(0.957)	295281	125.000	120
47 Benzene	78	9.636	9.636	(0.975)	842888	125.000	130
48 1,2-Dichloroethane	62	9.646	9.646	(0.976)	211574	125.000	130
49 Trichloroethene	130	10.218	10.218	(1.034)	202987	125.000	120
50 Methylcyclohexane	83	10.405	10.405	(1.053)	337823	125.000	120
51 1,2-Dichloropropane	63	10.425	10.425	(1.055)	204804	125.000	140
52 Methylmethacrylate	69	10.405	10.405	(1.053)	677863	1250.00	1500
53 1,4-dioxane	88	10.494	10.494	(1.062)	29190	6250.00	6200
54 Dibromomethane	174	10.543	10.543	(1.067)	68977	125.000	120
55 Bromodichloromethane	83	10.632	10.632	(1.076)	278487	125.000	130
56 2-chloroethyl vinyl ether	63	10.819	10.819	(1.095)	75532	1250.00	1300
57 cis-1,3-Dichloropropene	75	11.006	11.006	(1.114)	302492	125.000	130
58 4-Methyl-2-pentanone	43	11.065	11.065	(0.896)	443721	625.000	650
59 Toluene	92	11.292	11.292	(0.914)	471332	125.000	120
60 Ethylmethacrylate	69	11.410	11.410	(0.923)	1335590	1250.00	1400
61 trans-1,3-Dichloropropene	75	11.430	11.430	(0.925)	244627	125.000	130
62 1,1,2-Trichloroethane	97	11.587	11.587	(0.938)	101258	125.000	120
63 2-hexanone	43	11.705	11.705	(0.947)	295871	625.000	640
64 1,3-Dichloropropane	76	11.735	11.735	(0.950)	211685	125.000	130
65 Tetrachloroethene	164	11.745	11.745	(0.951)	144094	125.000	110

Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-CCV1R71.d
Report Date: 10-Jul-2009 18:22

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ng)	ON-COL (ng)
66	Dibromochloromethane	129	11.912	11.912	(0.964)	150543	125.000	120
67	1,2-Dibromoethane	107	12.040	12.040	(0.974)	110354	125.000	120
68	1-Chlorohexane	55	12.287	12.287	(0.994)	234528	125.000	120
69	Chlorobenzene	112	12.385	12.385	(1.002)	460615	125.000	120
70	Ethylbenzene	106	12.415	12.415	(1.005)	244580	125.000	120
71	1,1,1,2-Tetrachloroethane	131	12.425	12.425	(1.006)	169784	125.000	120
72	m,p-Xylene	106	12.494	12.494	(1.011)	610380	250.000	230
73	o-Xylene	106	12.789	12.789	(1.035)	289073	125.000	120
74	Styrene	104	12.789	12.789	(1.035)	479205	125.000	120
75	Bromoform	173	12.976	12.976	(1.050)	69391	125.000	110
76	Isopropyl Benzene	105	13.026	13.026	(1.054)	793629	125.000	110
77	1,1,2,2-Tetrachloroethane	83	13.232	13.232	(0.941)	133518	125.000	140
79	1,2,3-Trichloropropane	110	13.301	13.301	(1.077)	28958	125.000	120
78	trans-1,4-dichloro-2-butene	53	13.262	13.262	(1.073)	120065	500.000	490
80	n-Propyl Benzene	91	13.321	13.321	(0.947)	1081624	125.000	120
81	Bromobenzene	156	13.331	13.331	(1.079)	165770	125.000	110
82	1,3,5-Trimethyl Benzene	105	13.430	13.430	(0.955)	622002	125.000	120
83	2-Chlorotoluene	126	13.449	13.449	(0.957)	180865	125.000	120
84	4-Chlorotoluene	126	13.518	13.518	(0.961)	177166	125.000	120
85	tert-Butyl Benzene	119	13.686	13.686	(0.973)	584209	125.000	120
86	1,2,4-Trimethyl Benzene	105	13.725	13.725	(0.976)	608841	125.000	120
87	Pentachloroethane	167	13.765	13.765	(0.979)	102908	125.000	120
88	sec-Butyl Benzene	105	13.853	13.853	(0.985)	878316	125.000	120
89	p-Isopropyl Toluene	119	13.932	13.932	(0.991)	657119	125.000	110
90	1,3-Dichlorobenzene	146	14.011	14.011	(0.996)	321452	125.000	110
91	1,4-Dichlorobenzene	146	14.080	14.080	(1.001)	326961	125.000	120
92	n-Butyl Benzene	91	14.247	14.247	(1.013)	751974	125.000	120
93	1,2-Dichlorobenzene	146	14.385	14.385	(1.023)	264748	125.000	120
94	1,2-Dibromo-3-Chloropropane	75	15.006	15.006	(1.067)	18430	125.000	130
95	1,2,4-Trichlorobenzene	180	15.804	15.804	(1.124)	154683	125.000	100
96	Hexachlorobutadiene	225	15.902	15.902	(1.131)	86443	125.000	94
97	Naphthalene	128	16.080	16.080	(1.144)	237386	125.000	110
98	1,2,3-Trichlorobenzene	180	16.356	16.356	(1.163)	119879	125.000	100
M 99	1,2-Dichloroethene (total)	96				430782	250.000	250
M 100	Xylene (total)	106				899453	125.000	370

COMPUCHEM a Division of Liberty Analytical Corp DATE 7/09/09 INITIAL TIME OF TUNE 1612 SHIFT/S(A) ✓ (B)____ (C)____

GC/MS VOLATILE RUN LOG TIME TUNE EXPIRES 0412 LINKER /METHOD 8260B 25mL DOD

COMPUCHEM LOGBOOK 11 WWW 28 (5972hp71)

PREVENTIVE MAINTENANCE retuned

		FILE NAME		pH	Vial	DATE	TIME	Client ID	SDG#	INJ VOL*	DF	CHEMIST	COMMENTS(ETC.) / DISPOSITION
1		9G09007-TUN1		—	—	7/09/09	1612	BFB	—	2uL	—	JAO	LCD=SCD
2		-CCV1	VS	—	—	/ /	1632	VSTD005	—	25mL	—		
3		-CCV1R		—	—	/ /	1738	VSTD005	—	↓	—		
4		9070915-BLK1		—	—	/ /	1819	VBLKJX	VARIOUS	25mL	—		
5		-BS1		—	—	/ /	1907	VJXLCS	↓	↓	—		Passes JCL4-DOD & EPA Spike
6		-BSD1		—	—	/ /	1935	VJXLCSD	↓	↓	—		passes EPA Spike
7		0907002-08		1	A	/ /	2003	Y507-GW05-0709	0907002	25mL			
8		-09		1	A	/ /	2031	-GW05P-0709	↓	↓	—		
9		-10		1	A	/ /	2112	-EB01-070709	↓	↓	—		
10		-11		1	A	/ /	2140	-TB01-070709	↓	↓	—		
11		-12		1	A	/ /	2208	-FB01-070809	↓	↓	—		
12		-13		1	A	/ /	2237	-TB01-070809	↓	↓	—		
13		9070915-MS1		1	B	/ /	2305	-GW05-0709MS	↓	↓	—		
14		-MSD1		1	C	/ /	2333	-GW05-0709MSD	↓	↓	—		
15		0907034-01		1	A	7/10/09	0001	SP11	0907034	↓	—		
16		-02		1	A	/ /	0029	SP2A	↓	↓	—		
17		-05	VB	1	A	/ /	0057	TRIP BLANK	↓	↓	—		acetone
18		0907038-01	DI	1	A	/ /	0125	DPE12TC32	0907038	↓	—	↓	Toluene 2866ng
19						/ /							
20						/ /							
21						/ /		JAO 7-10-09					
22						/ /							
23						/ /							
24						/ /							

*On-column sample aliquot +Not applicable to soil matrix

The presence of the Chemist's/Analyst's employee ID number, or signature, on this run log attests that strict compliance with the method's SOP has occurred. Any SOP deviations require documentation by the responsible chemist/analyst together with the chemist's/analyst's initials and the initials of the lab supervisor and a QA department representative, signifying approval of the deviation.

Tune (ID #7008) Lot #: 66747 Calibration Group Code / Lot #: DC482

Reviewed by: _____ Date 7-10-9 Archon Internal Standard #: 66763

03/02/09: jr

4. Raw QC Data

   a. BFB Data

   b. Blank Data

   c. Laboratory Control Sample Data

   d. Matrix Spike Data

   e. Matrix Spike Duplicate Data

a. BFB Data

For each 12 hour period, per instrument utilized, include:

- Bar Graph spectrum and Tabulated Relative Abundances

- Mass listing

- Reconstructed ion chromatogram

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-TUN171.d

Date : 01-JUL-2009 16:24

Client ID: BFB

Instrument: 5972hp71.i

Sample Info: 9G01002-TUN1:JAO

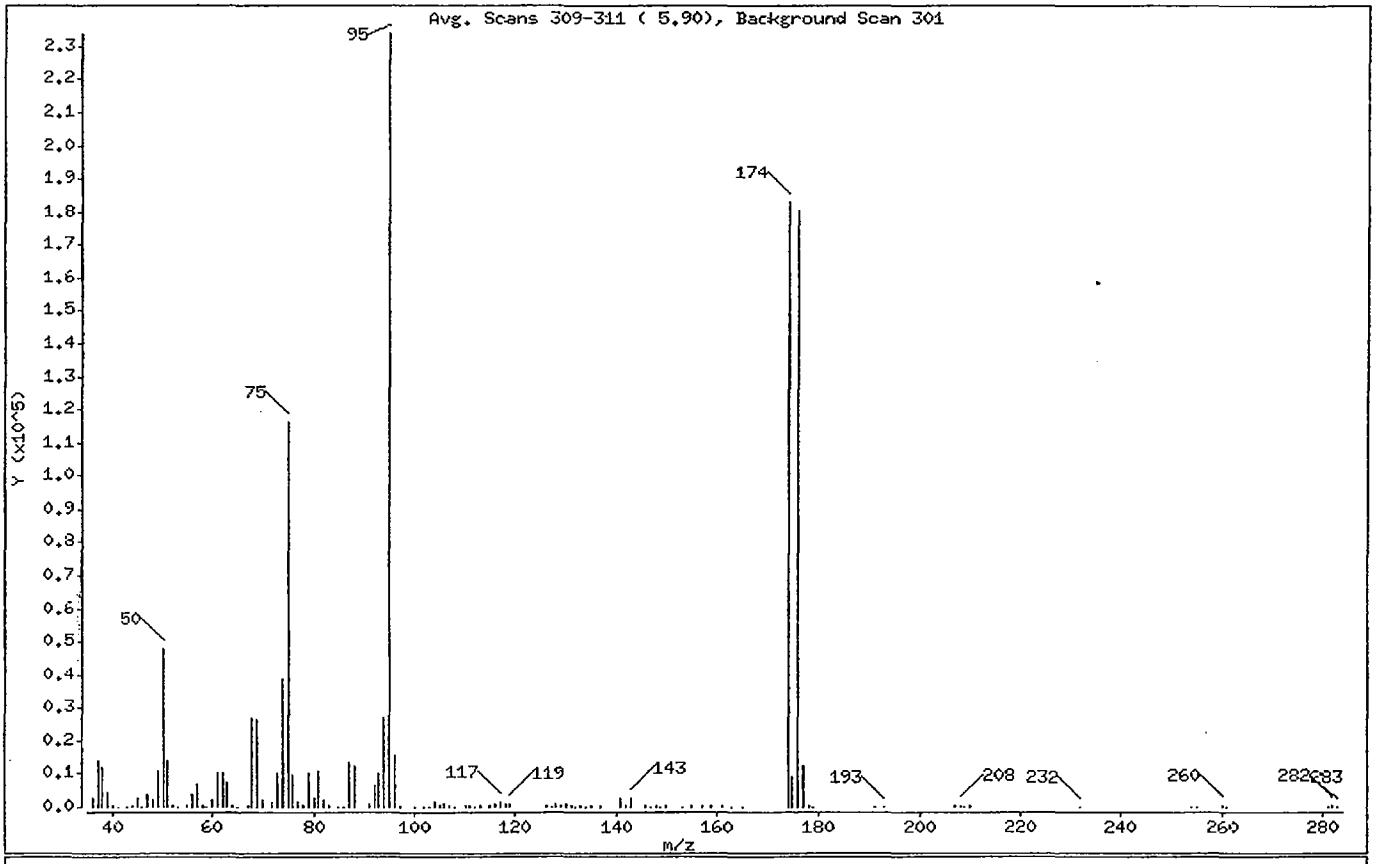
Volume Injected (uL): 2.0

Operator: JAO

Column phase: SPB-624

Column diameter: 0.32

1 bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.60
75	30.00 - 60.00% of mass 95	49.78
96	5.00 - 9.00% of mass 95	6.68
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	78.44
175	5.00 - 9.00% of mass 174	3.94 (5.02)
176	95.00 - 101.00% of mass 174	77.08 (98.27)
177	5.00 - 9.00% of mass 176	5.22 (6.77)

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-TUN171.d

Date : 01-JUL-2009 16:24

Client ID: BFB Instrument: 5972hp71.i

Sample Info: 9G01002-TUN1:JAO

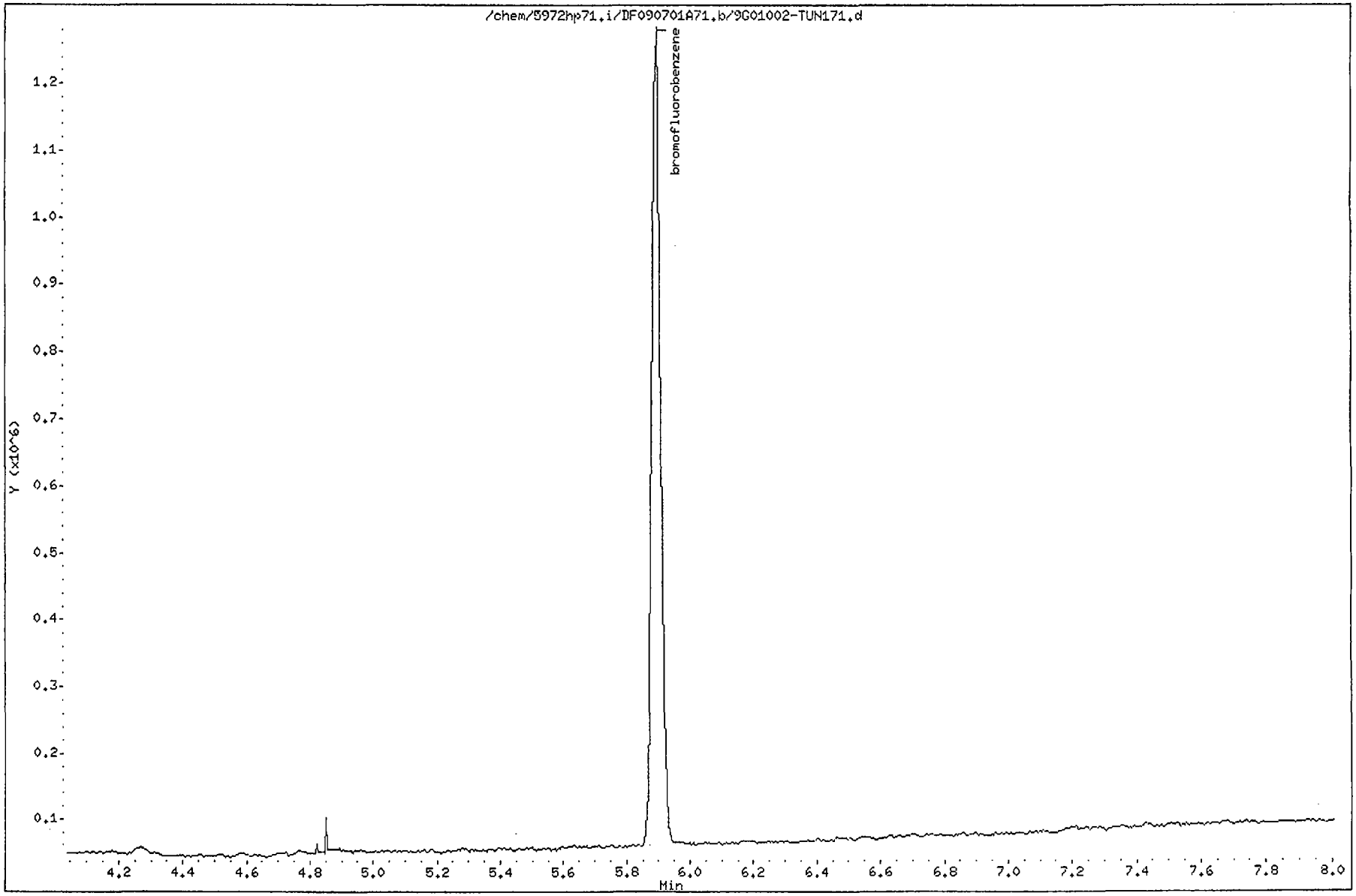
Volume Injected (uL): 2.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

Data File: 9G01002-TUN171.d
Spectrum: Avg. Scans 309-311 (5.90), Background Scan 301
Location of Maximum: 95.00
Number of points: 118

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	2847	69.00	26128	106.00	1163	150.00	340
37.00	14141	70.00	2109	107.00	383	153.00	98
38.00	11702	72.00	1387	108.00	192	155.00	638
39.00	4338	73.00	10261	110.00	284	157.00	420
40.00	382	74.00	38856	111.00	341	159.00	351
41.00	41	75.00	116352	112.00	88	161.00	305
43.00	182	76.00	9952	113.00	334	163.00	160
44.00	749	77.00	1592	115.00	295	165.00	90
45.00	2482	78.00	502	116.00	1082	174.00	183296
46.00	65	79.00	10492	117.00	1513	175.00	9208
47.00	3817	80.00	2741	118.00	995	176.00	180160
48.00	1972	81.00	10951	119.00	1251	177.00	12202
49.00	10516	82.00	2155	126.00	407	178.00	529
50.00	48136	83.00	359	127.00	110	179.00	60
51.00	13784	85.00	56	128.00	1008	191.00	26
52.00	636	86.00	115	129.00	501	193.00	115
53.00	181	87.00	13250	130.00	958	207.00	485
55.00	603	88.00	12118	131.00	329	208.00	510
56.00	3776	91.00	1047	132.00	89	209.00	153
57.00	7176	92.00	6492	133.00	381	210.00	270
58.00	407	93.00	10078	134.00	260	232.00	202
59.00	97	94.00	26664	135.00	601	254.00	86
60.00	2367	95.00	233728	137.00	516	255.00	90
61.00	10455	96.00	15623	141.00	2492	260.00	377
62.00	10255	97.00	474	142.00	277	261.00	176
63.00	7793	100.00	2	143.00	2496	281.00	105
64.00	624	102.00	92	146.00	459	282.00	303
65.00	182	103.00	28	147.00	161	283.00	182
67.00	420	104.00	1432	148.00	673		
68.00	26984	105.00	497	149.00	131		

Data File: /chem/5972hp71.i/DF090701A71.b/9G01002-TUN171.d
Date : 01-JUL-2009 16:24
Client ID: BFB
Instrument: 5972hp71.i
Sample Info: 9G01002-TUN1;JAO
Volume Injected (uL): 2.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-TUN171.d

Date : 02-JUL-2009 09:31

Client ID: BFB

Instrument: 5972hp71.i

Sample Info: 9G01001-TUN1:JAO

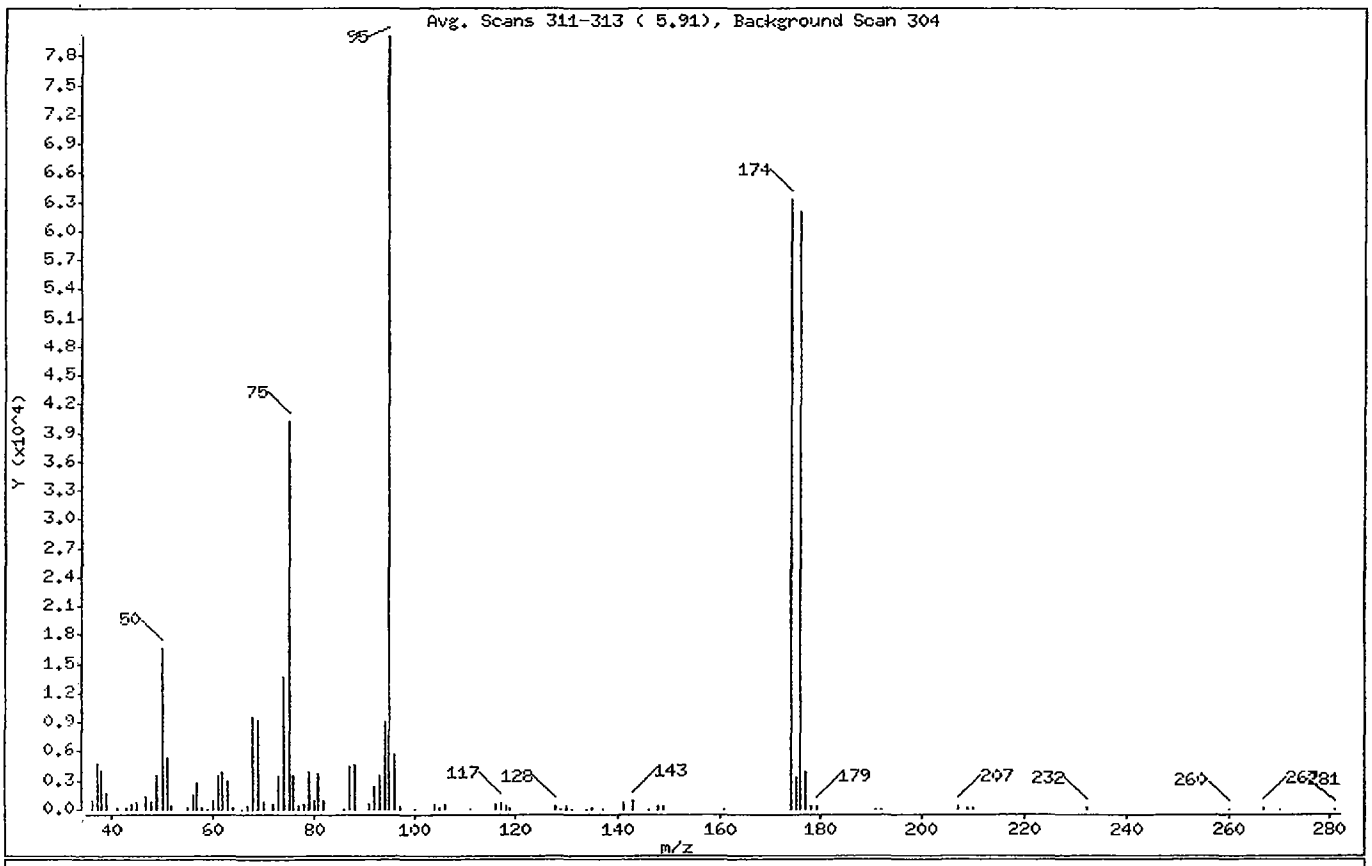
Volume Injected (uL): 2.0

Operator: JAO

Column phase: SPB-624

Column diameter: 0.32

1 bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	20.63
75	30.00 - 60.00% of mass 95	50.29
96	5.00 - 9.00% of mass 95	7.06
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	79.07
175	5.00 - 9.00% of mass 174	4.10 (5.19)
176	95.00 - 101.00% of mass 174	77.36 (97.83)
177	5.00 - 9.00% of mass 176	4.74 (6.12)

Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-TUN171.d

Date : 02-JUL-2009 09:31

Client ID: BFB

Instrument: 5972hp71.i

Sample Info: 9G01001-TUN1:JAO

Volume Injected (uL): 2.0

Operator: JAO

Column phase: SPB-624

Column diameter: 0.32

Data File: 9G02001-TUN171.d

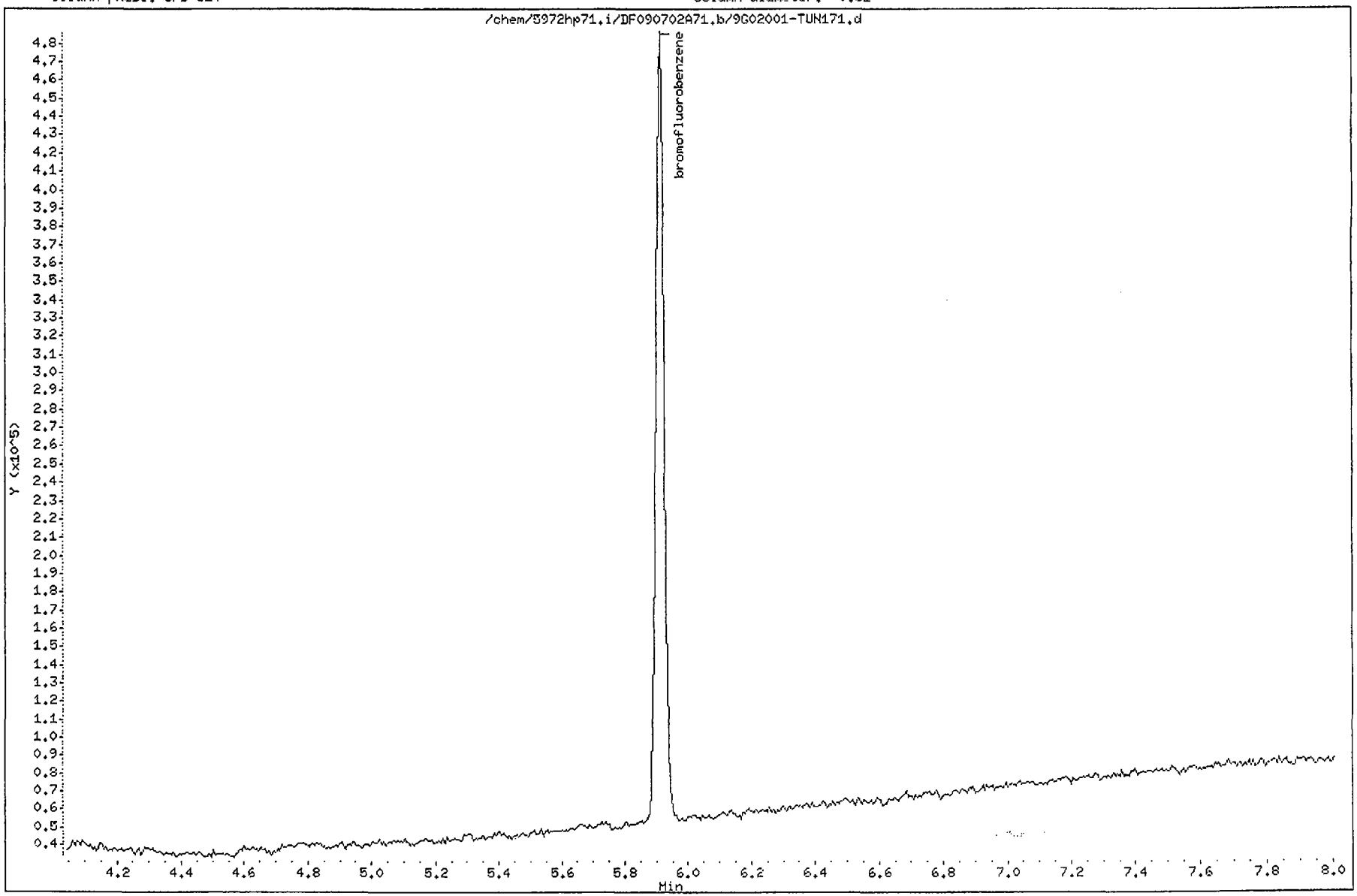
Spectrum: Avg. Scans 311-313 (5.91), Background Scan 304

Location of Maximum: 95.00

Number of points: 88

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	977	64.00	216	94.00	9098	148.00	298
37.00	4762	66.00	87	95.00	80080	149.00	366
38.00	4132	67.00	309	96.00	5651	161.00	15
39.00	1595	68.00	9540	97.00	393	174.00	63320
41.00	129	69.00	9209	100.00	66	175.00	3286
43.00	181	70.00	754	104.00	588	176.00	61944
44.00	597	72.00	574	105.00	155	177.00	3794
45.00	647	73.00	3485	106.00	465	178.00	333
47.00	1232	74.00	13679	111.00	87	179.00	290
48.00	683	75.00	40264	116.00	497	191.00	22
49.00	3516	76.00	3453	117.00	754	192.00	91
50.00	16520	77.00	415	118.00	426	207.00	357
51.00	5272	78.00	484	119.00	214	209.00	113
52.00	398	79.00	3859	128.00	439	210.00	172
55.00	190	80.00	945	129.00	88	232.00	97
56.00	1473	81.00	3662	130.00	389	260.00	3
57.00	2720	82.00	911	131.00	38	267.00	197
58.00	102	86.00	84	134.00	14	270.00	44
59.00	5	87.00	4508	135.00	174	281.00	70
60.00	952	88.00	4604	137.00	89		
61.00	3526	91.00	494	141.00	814		
62.00	3824	92.00	2311	143.00	896		
63.00	2952	93.00	3586	146.00	86		

Data File: /chem/5972hp71.i/DF090702A71.b/9G02001-TUN171.d
Date : 02-JUL-2009 09:31
Client ID: BFB
Instrument: 5972hp71.i
Sample Info: 9G01001-TUN1:JAO
Volume Injected (uL): 2.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-TUN171.d

Date : 06-JUL-2009 10:49

Client ID: BFB

Instrument: 5972hp71.i

Sample Info: 9G06001-TUN1;JAO

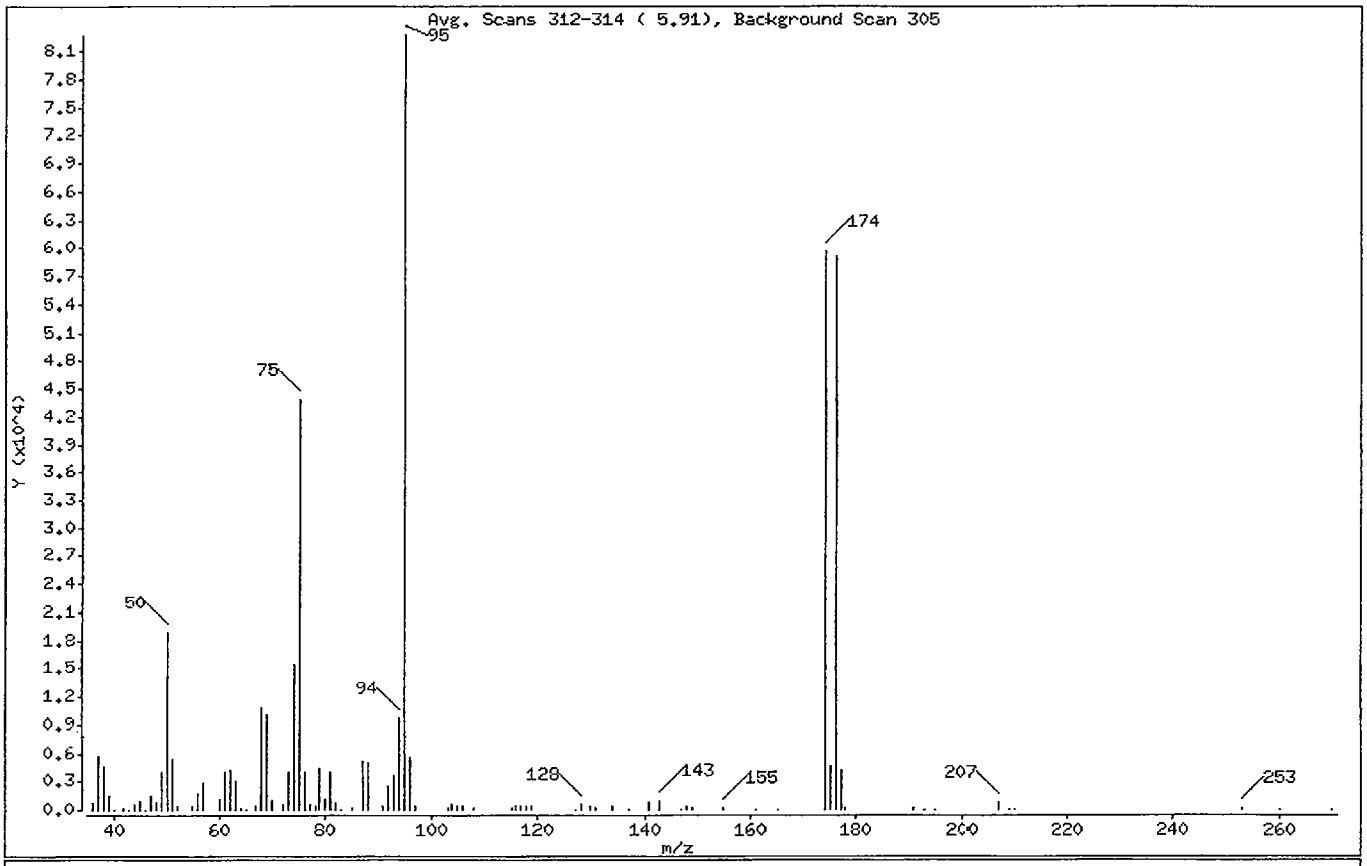
Volume Injected (uL): 2.0

Operator: JAO

Column phase: SPB-624

Column diameter: 0.32

1 bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	22.91
75	30.00 - 60.00% of mass 95	52.97
96	5.00 - 9.00% of mass 95	6.58
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	72.10
175	5.00 - 9.00% of mass 174	5.60 (7.77)
176	95.00 - 101.00% of mass 174	71.49 (99.15)
177	5.00 - 9.00% of mass 176	4.96 (6.94)

Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-TUN171.d

Date : 06-JUL-2009 10:49

Client ID: BFB Instrument: 5972hp71.i

Sample Info: 9G06001-TUN1:JAO

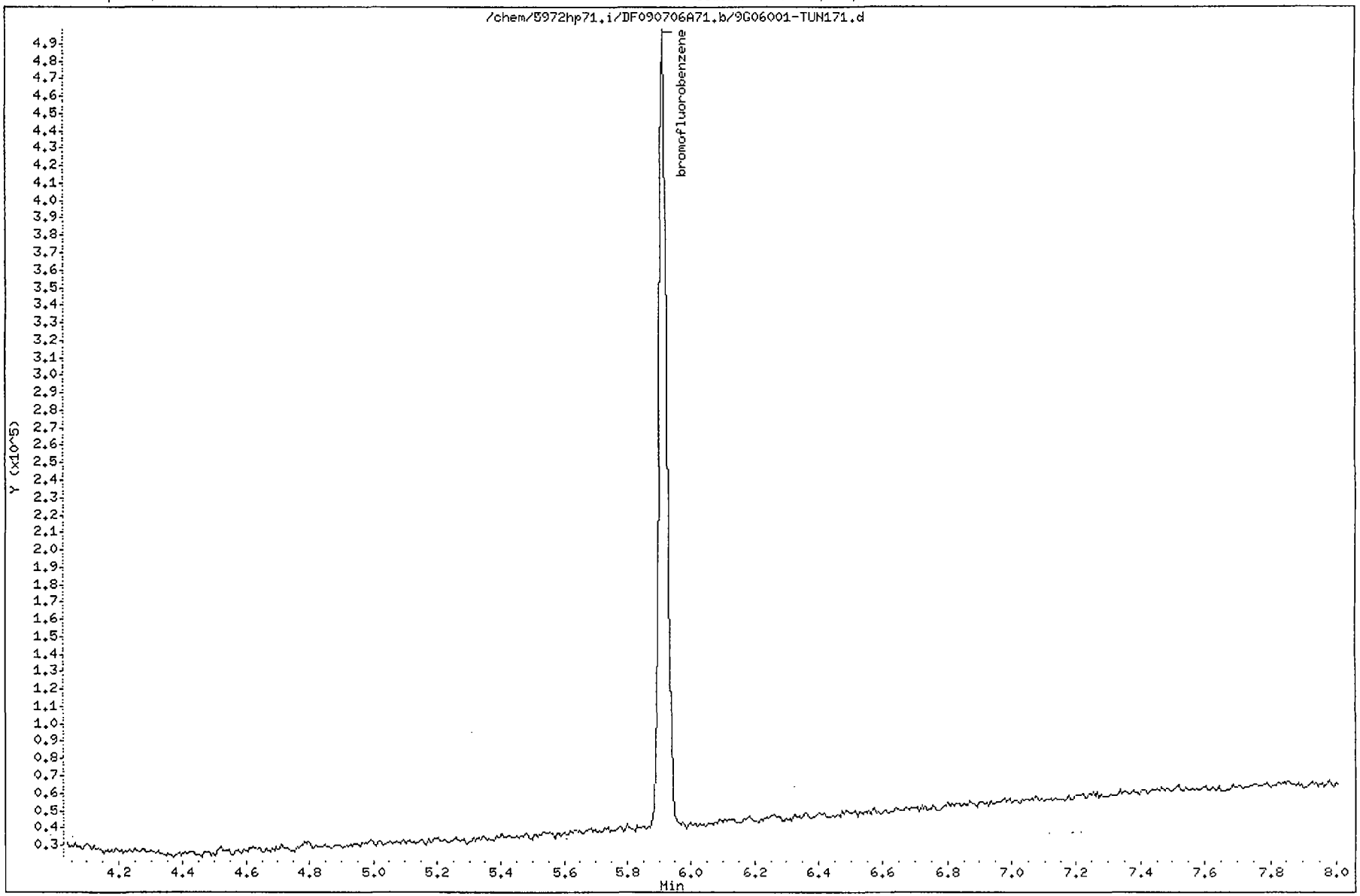
Volume Injected (uL): 2.0 Operator: JAO

Column phase: SPB-624 Column diameter: 0.32

Data File: 9G06001-TUN171.d
Spectrum: Avg. Scans 312-314 (5.91), Background Scan 305
Location of Maximum: 95.00
Number of points: 89

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	685	64.00	262	93.00	3604	147.00	18
37.00	5736	65.00	87	94.00	9736	148.00	300
38.00	4662	67.00	287	95.00	82768	149.00	222
39.00	1585	68.00	10825	96.00	5444	155.00	222
40.00	12	69.00	10053	97.00	325	161.00	25
42.00	202	70.00	898	103.00	165	165.00	91
43.00	75	72.00	652	104.00	597	174.00	59672
44.00	484	73.00	4046	105.00	406	175.00	4636
45.00	885	74.00	15357	106.00	475	176.00	59168
46.00	95	75.00	43840	108.00	96	177.00	4105
47.00	1503	76.00	3915	115.00	196	178.00	196
48.00	781	77.00	503	116.00	456	191.00	259
49.00	3936	78.00	434	117.00	450	193.00	3
50.00	18960	79.00	4424	118.00	408	195.00	91
51.00	5406	80.00	1143	119.00	445	207.00	799
52.00	329	81.00	4065	127.00	42	209.00	82
55.00	472	82.00	702	128.00	480	210.00	91
56.00	1653	83.00	88	130.00	377	253.00	116
57.00	2916	85.00	145	131.00	210	260.00	44
60.00	1080	87.00	5180	134.00	321	270.00	85
61.00	4043	88.00	5000	137.00	85		
62.00	4153	91.00	316	141.00	814		
63.00	3014	92.00	2511	143.00	922		

Data File: /chem/5972hp71.i/DF090706A71.b/9G06001-TUN171.d
Date : 06-JUL-2009 10:49
Client ID: BFB
Instrument: 5972hp71.i
Sample Info: 9G06001-TUN1;JAO
Volume Injected (uL): 2.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-TUN171.d

Date : 09-JUL-2009 16:12

Client ID: BFB

Instrument: 5972hp71.i

Sample Info: 9G09007-TUN1;JAO

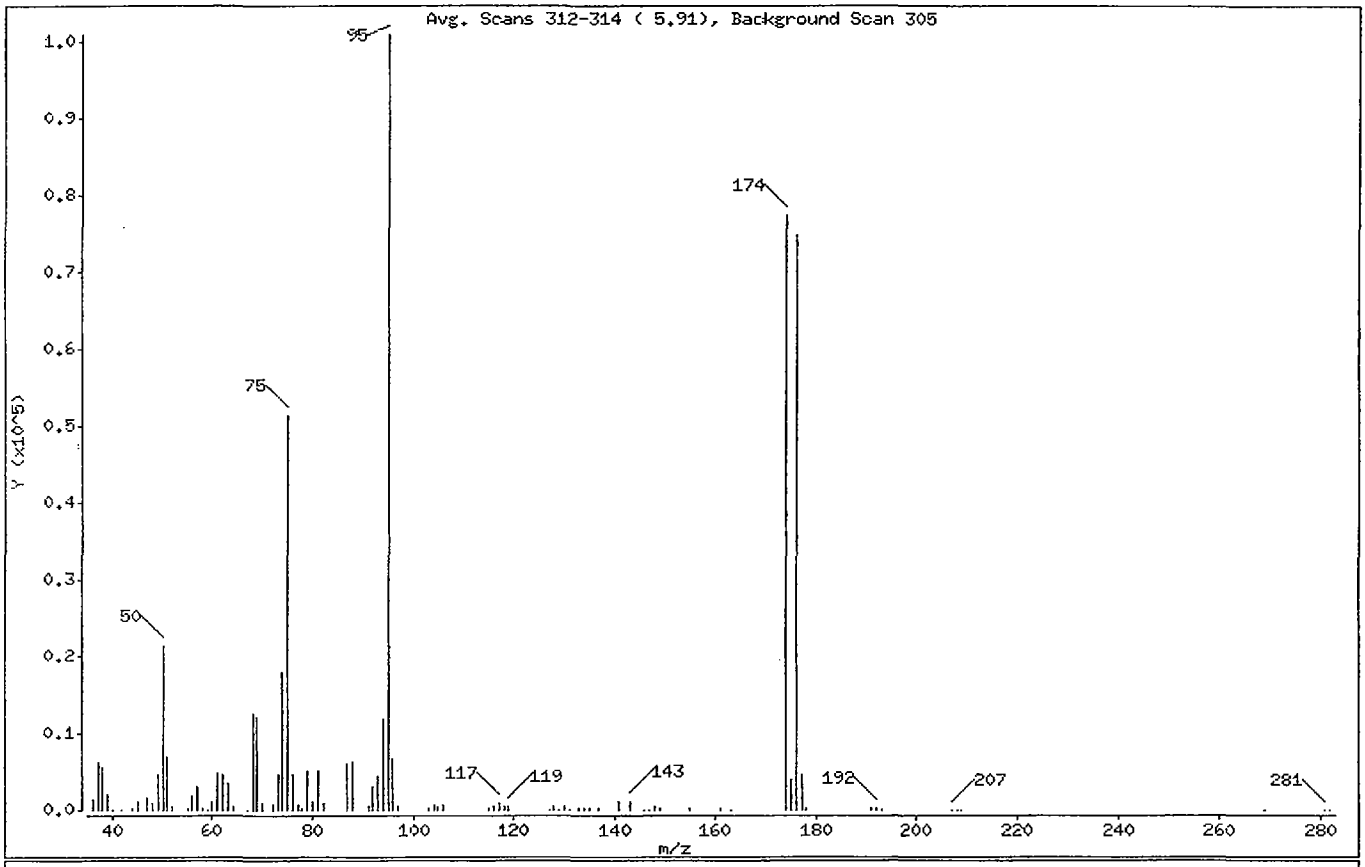
Volume Injected (uL): 2.0

Operator: JAO

Column phase: SPB-624

Column diameter: 0.32

1 bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	21.16
75	30.00 - 60.00% of mass 95	50.82
96	5.00 - 9.00% of mass 95	6.75
173	Less than 2.00% of mass 174	0.00 (0.00)
174	Greater than 50.00% of mass 95	76.81
175	5.00 - 9.00% of mass 174	4.01 (5.23)
176	95.00 - 101.00% of mass 174	74.13 (96.50)
177	5.00 - 9.00% of mass 176	4.54 (6.12)

Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-TUN171.d

Date : 09-JUL-2009 16:12

Client ID: BFB

Instrument: 5972hp71.i

Sample Info: 9G09007-TUN1:JAO

Volume Injected (uL): 2.0

Operator: JAO

Column phase: SPB-624

Column diameter: 0.32

Data File: 9G09007-TUN171.d

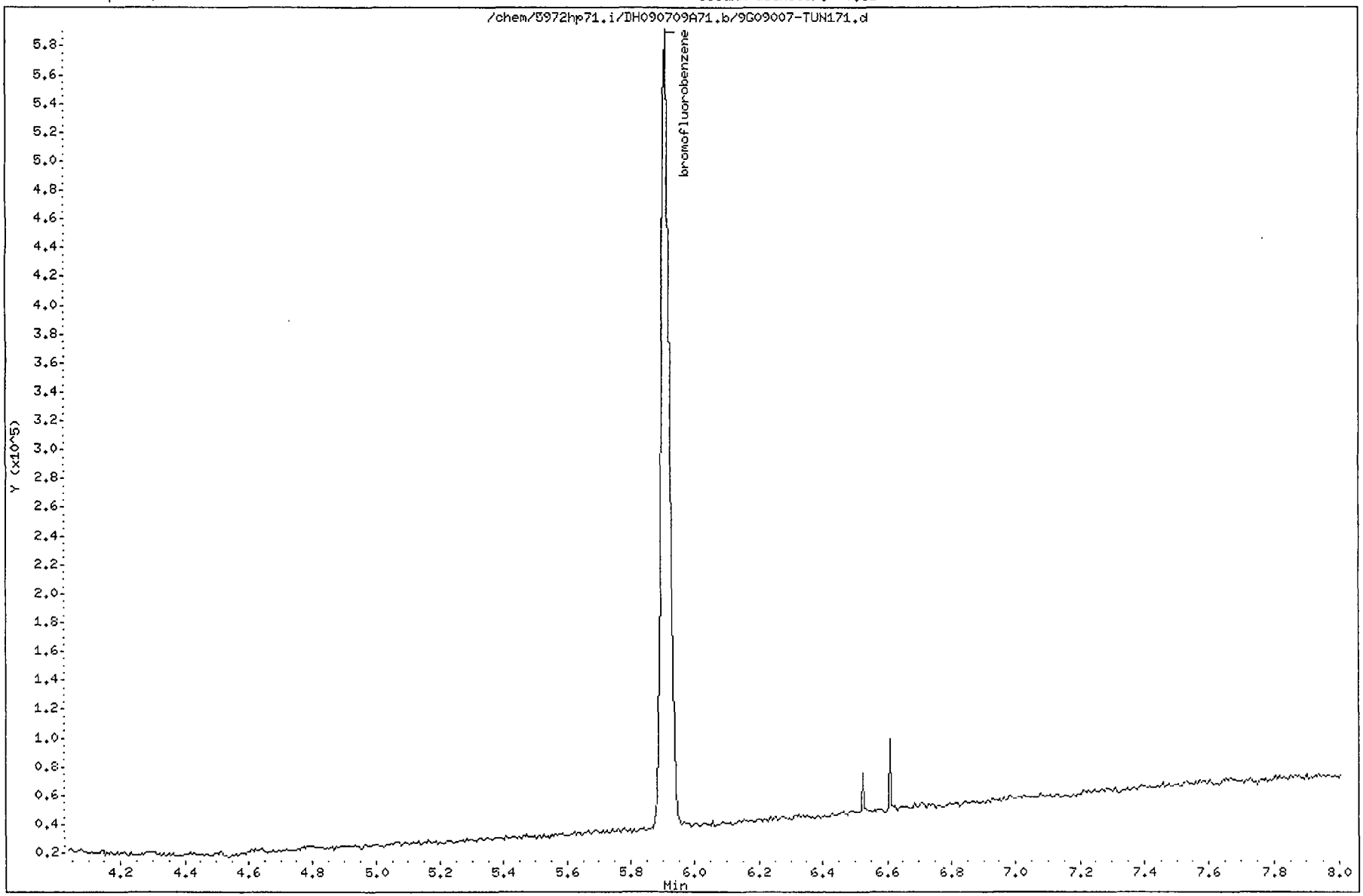
Spectrum: Avg. Scans 312-314 (5.91), Background Scan 305

Location of Maximum: 95.00

Number of points: 89

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	1295	64.00	380	96.00	6816	147.00	60
37.00	6314	67.00	109	97.00	400	148.00	419
38.00	5653	68.00	12577	103.00	160	149.00	237
39.00	2047	69.00	12109	104.00	655	155.00	283
40.00	103	70.00	999	105.00	445	161.00	187
42.00	95	72.00	597	106.00	621	163.00	17
44.00	271	73.00	4660	115.00	169	174.00	77608
45.00	1234	74.00	18032	116.00	485	175.00	4056
47.00	1623	75.00	51352	117.00	869	176.00	74896
48.00	929	76.00	4622	118.00	419	177.00	4584
49.00	4627	77.00	738	119.00	549	178.00	229
50.00	21376	78.00	318	127.00	41	191.00	209
51.00	6954	79.00	5111	128.00	500	192.00	288
52.00	380	80.00	1158	129.00	116	193.00	3
55.00	157	81.00	5011	130.00	430	207.00	112
56.00	1819	82.00	1037	131.00	66	208.00	107
57.00	3022	87.00	6105	133.00	126	209.00	111
58.00	192	88.00	6229	134.00	234	269.00	81
59.00	106	91.00	379	135.00	149	281.00	101
60.00	1149	92.00	2972	137.00	306	282.00	94
61.00	4946	93.00	4437	141.00	1102		
62.00	4733	94.00	11920	143.00	1142		
63.00	3408	95.00	101040	146.00	85		

Data File: /chem/5972hp71.i/DH090709A71.b/9G09007-TUN171.d
Date : 09-JUL-2009 16:12
Client ID: BFB
Instrument: 5972hp71.i
Sample Info: 9G09007-TUN1:JAO
Volume Injected (uL): 2.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



b. Blank Data

Arranged by type of blank (method, storage, instrument) in chronological order, by instrument. Shall include:

- Tabulated Results (Form I VOA)

- Tentatively Identified Compounds (Form I VOA-TIC)

- Reconstructed Ion Chromatogram and quantitation report.

- Target compound spectra with lab-generated standard spectra.

- Quantitation/Calculation of TIC concentrations.

- GC/MS library search spectra for TICs.

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJH

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJH

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

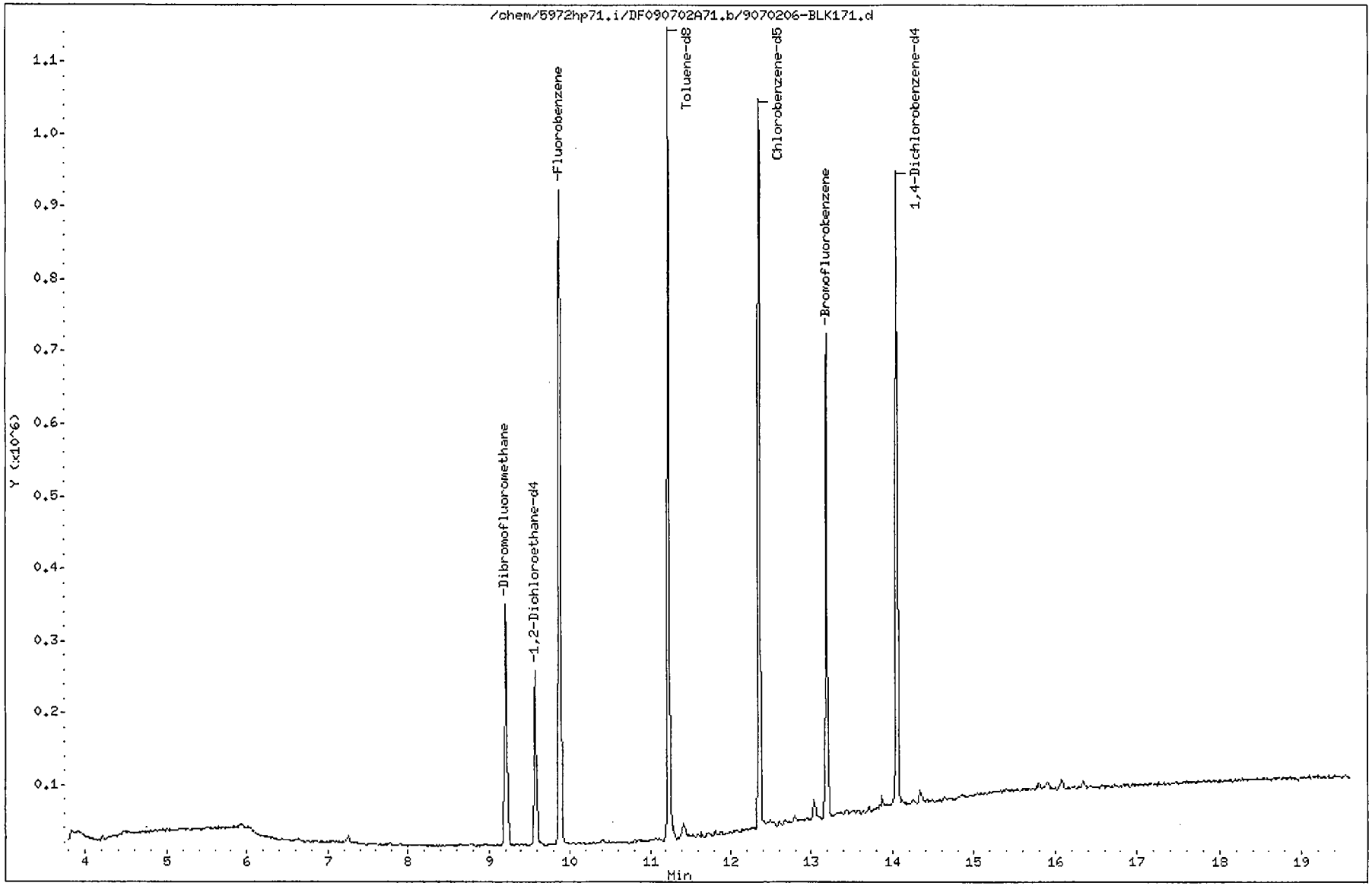
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BLK171.d
Date : 02-JUL-2009 11:25
Client ID: VBLKJH
Sample Info: 9070206-BLK1;JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BLK171.d
Report Date: 06-Jul-2009 16:54

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/9070206-BLK171.d
Lab Smp Id: 9070206-BLK1 Client Smp ID: VBLKJH
Inj Date : 02-JUL-2009 11:25
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070206-BLK1:JAO
Misc Info : VBLKJH
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:43 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
*	1 Fluorobenzene	96	9.881	9.884	(1.000)	793283	125.000	
*	2 Chlorobenzene-d5	117	12.353	12.357	(1.000)	506184	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.058	14.051	(1.000)	235567	125.000	
$	4 Dibromofluoromethane	113	9.211	9.214	(0.932)	216864	124.400	5.0
$	5 1,2-Dichloroethane-d4	65	9.575	9.578	(0.969)	175938	129.597	5.2
$	6 Toluene-d8	98	11.230	11.233	(0.909)	680013	124.486	5.0
$	7 Bromofluorobenzene	95	13.191	13.184	(0.938)	247726	121.521	4.9
	8 Dichlorodifluoromethane	85	Compound Not Detected.					
	9 Chloromethane	50	Compound Not Detected.					
	10 Vinyl Chloride	62	Compound Not Detected.					
	11 Bromomethane	94	Compound Not Detected.					
	12 Chloroethane	64	Compound Not Detected.					
	13 Trichlorofluoromethane	101	Compound Not Detected.					
	17 1,1-Dichloroethene	96	Compound Not Detected.					
	16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BLK171.d
Report Date: 06-Jul-2009 16:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	18 Acetone	43	Compound Not Detected.					
	20 Carbon disulfide	76	Compound Not Detected.					
	24 Methyl acetate	43	Compound Not Detected.					
	25 Methylene Chloride	84	Compound Not Detected.					
	27 Methyl-tert-butyl ether	73	Compound Not Detected.					
	28 trans-1,2-Dichloroethene	96	Compound Not Detected.					
	32 1,1-Dichloroethane	63	Compound Not Detected.					
	34 2-butanone	43	Compound Not Detected.					
	36 cis-1,2-Dichloroethene	96	Compound Not Detected.					
	40 Chloroform	83	Compound Not Detected.					
	42 1,1,1-Trichloroethane	97	Compound Not Detected.					
	43 Cyclohexane	84	Compound Not Detected.					
	46 Carbon Tetrachloride	117	Compound Not Detected.					
	47 Benzene	78	Compound Not Detected.					
	48 1,2-Dichloroethane	62	Compound Not Detected.					
	49 Trichloroethene	130	Compound Not Detected.					
	50 Methylcyclohexane	83	Compound Not Detected.					
	51 1,2-Dichloropropane	63	Compound Not Detected.					
	55 Bromodichloromethane	83	Compound Not Detected.					
	57 cis-1,3-Dichloropropene	75	Compound Not Detected.					
	58 4-Methyl-2-pentanone	43	Compound Not Detected.					
	59 Toluene	92	Compound Not Detected.					
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.					
	62 1,1,2-Trichloroethane	97	Compound Not Detected.					
	63 2-hexanone	43	Compound Not Detected.					
	65 Tetrachloroethene	164	Compound Not Detected.					
	66 Dibromochloromethane	129	Compound Not Detected.					
	67 1,2-Dibromoethane	107	Compound Not Detected.					
	69 Chlorobenzene	112	Compound Not Detected.					
	70 Ethylbenzene	106	Compound Not Detected.					
	72 m,p-Xylene	106	Compound Not Detected.					
	73 o-Xylene	106	Compound Not Detected.					
	74 Styrene	104	Compound Not Detected.					
	75 Bromoform	173	Compound Not Detected.					
	76 Isopropyl Benzene	105	Compound Not Detected.					
	77 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	90 1,3-Dichlorobenzene	146	Compound Not Detected.					
	91 1,4-Dichlorobenzene	146	Compound Not Detected.					
	93 1,2-Dichlorobenzene	146	Compound Not Detected.					
	94 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
	95 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M	99 1,2-Dichloroethene (total)	96	Compound Not Detected.					
M	100 Xylene (total)	106	Compound Not Detected.					

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJI

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.1	J
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJI

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BLK171

Level: (low/med) LOW Date Received: _____

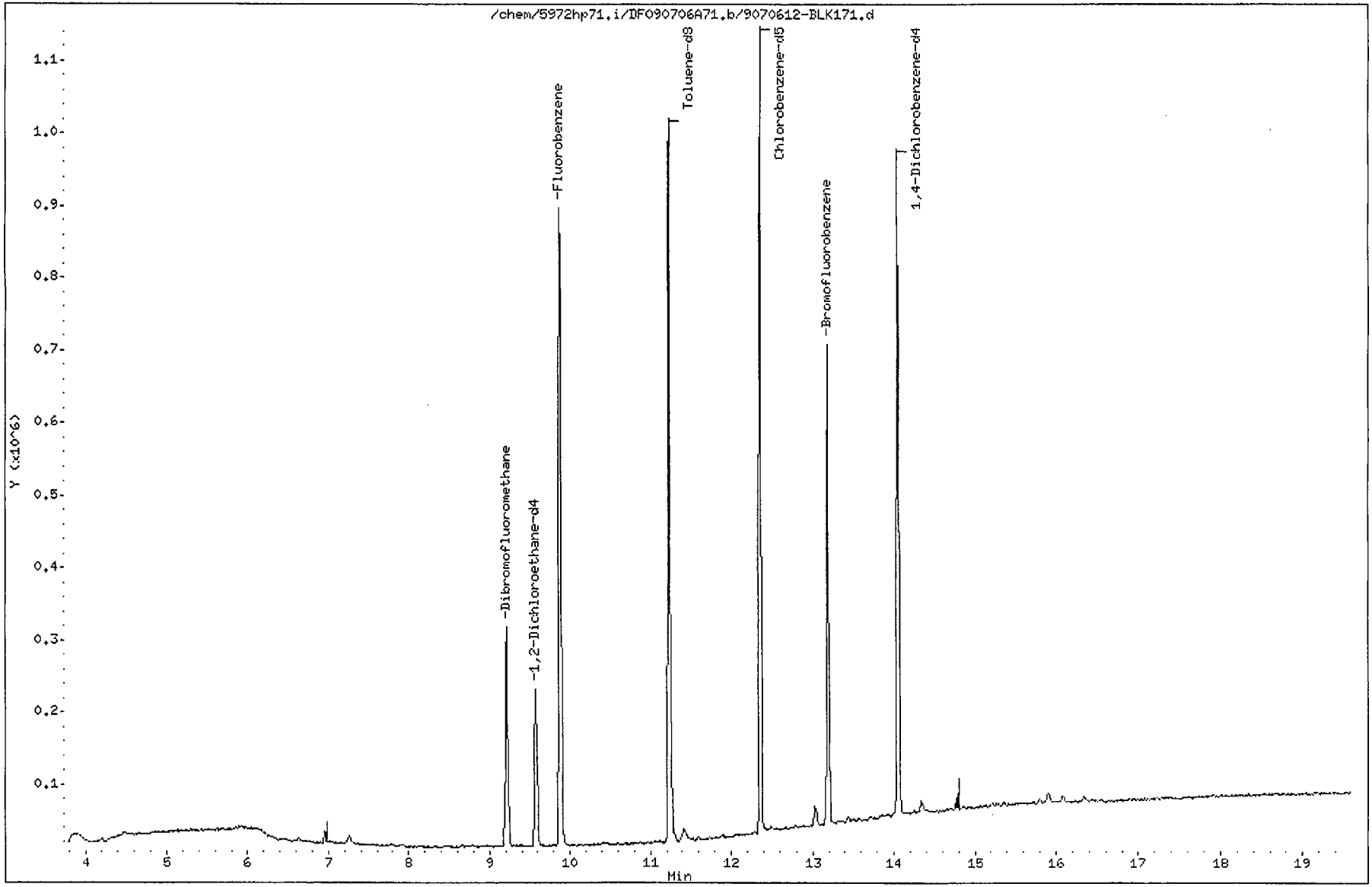
% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BLK171.d
Date : 06-JUL-2009 12:28
Client ID: VBLKJI
Instrument: 5972hp71.i
Sample Info: 9070612-BLK1;JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BLK171.d
Report Date: 07-Jul-2009 15:18

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090706A71.b/9070612-BLK171.d
Lab Smp Id: 9070612-BLK1 Client Smp ID: VBLKJI
Inj Date : 06-JUL-2009 12:28
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070612-BLK1:JAO
Misc Info : VBLKJI
Comment :
Method : /chem/5972hp71.i/DF090706A71.b/W8260-B-25MLv11.m
Meth Date : 07-Jul-2009 14:53 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
*	1 Fluorobenzene	96	9.878	9.882	(1.000)	762807	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.365	(1.000)	500998	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.056	14.059	(1.000)	217218	125.000	
$	4 Dibromofluoromethane	113	9.218	9.212	(0.933)	194417	115.716	4.6
$	5 1,2-Dichloroethane-d4	65	9.573	9.577	(0.969)	166802	127.748	5.1
$	6 Toluene-d8	98	11.238	11.232	(0.909)	613958	110.960	4.4
$	7 Bromofluorobenzene	95	13.189	13.192	(0.938)	223204	118.278	4.7
	8 Dichlorodifluoromethane	85	Compound Not Detected.					
	9 Chloromethane	50	Compound Not Detected.					
	10 Vinyl Chloride	62	Compound Not Detected.					
	11 Bromomethane	94	Compound Not Detected.					
	12 Chloroethane	64	Compound Not Detected.					
	13 Trichlorofluoromethane	101	Compound Not Detected.					
	17 1,1-Dichloroethene	96	Compound Not Detected.					
	16 1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

7/7

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BLK171.d
Report Date: 07-Jul-2009 15:18

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.637	6.631	(0.672)	8943	51.4335	2.1(a)
20	Carbon disulfide	76	Compound Not Detected.					
24	Methyl acetate	43	Compound Not Detected.					
25	Methylene Chloride	84	Compound Not Detected.					
27	Methyl-tert-butyl ether	73	Compound Not Detected.					
28	trans-1,2-Dichloroethene	96	Compound Not Detected.					
32	1,1-Dichloroethane	63	Compound Not Detected.					
34	2-butanone	43	Compound Not Detected.					
36	cis-1,2-Dichloroethene	96	Compound Not Detected.					
40	Chloroform	83	Compound Not Detected.					
42	1,1,1-Trichloroethane	97	Compound Not Detected.					
43	Cyclohexane	84	Compound Not Detected.					
46	Carbon Tetrachloride	117	Compound Not Detected.					
47	Benzene	78	Compound Not Detected.					
48	1,2-Dichloroethane	62	Compound Not Detected.					
49	Trichloroethene	130	Compound Not Detected.					
50	Methylcyclohexane	83	Compound Not Detected.					
51	1,2-Dichloropropane	63	Compound Not Detected.					
55	Bromodichloromethane	83	Compound Not Detected.					
57	cis-1,3-Dichloropropene	75	Compound Not Detected.					
58	4-Methyl-2-pentanone	43	Compound Not Detected.					
59	Toluene	92	Compound Not Detected.					
61	trans-1,3-Dichloropropene	75	Compound Not Detected.					
62	1,1,2-Trichloroethane	97	Compound Not Detected.					
63	2-hexanone	43	Compound Not Detected.					
65	Tetrachloroethene	164	Compound Not Detected.					
66	Dibromochloromethane	129	Compound Not Detected.					
67	1,2-Dibromoethane	107	Compound Not Detected.					
69	Chlorobenzene	112	Compound Not Detected.					
70	Ethylbenzene	106	Compound Not Detected.					
72	m,p-Xylene	106	Compound Not Detected.					
73	o-Xylene	106	Compound Not Detected.					
74	Styrene	104	Compound Not Detected.					
75	Bromoform	173	Compound Not Detected.					
76	Isopropyl Benzene	105	Compound Not Detected.					
77	1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
90	1,3-Dichlorobenzene	146	Compound Not Detected.					
91	1,4-Dichlorobenzene	146	Compound Not Detected.					
93	1,2-Dichlorobenzene	146	Compound Not Detected.					
94	1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
95	1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M 99	1,2-Dichloroethene (total)	96	Compound Not Detected.					
M 100	Xylene (total)	106	Compound Not Detected.					

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BLK171.d
Report Date: 07-Jul-2009 15:18

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BLK171.d

Date : 06-JUL-2009 12:28

Client ID: VBLKJI

Instrument: 5972hp71.i

Sample Info: 9070612-BLK1:JAO

Purge Volume: 25.0

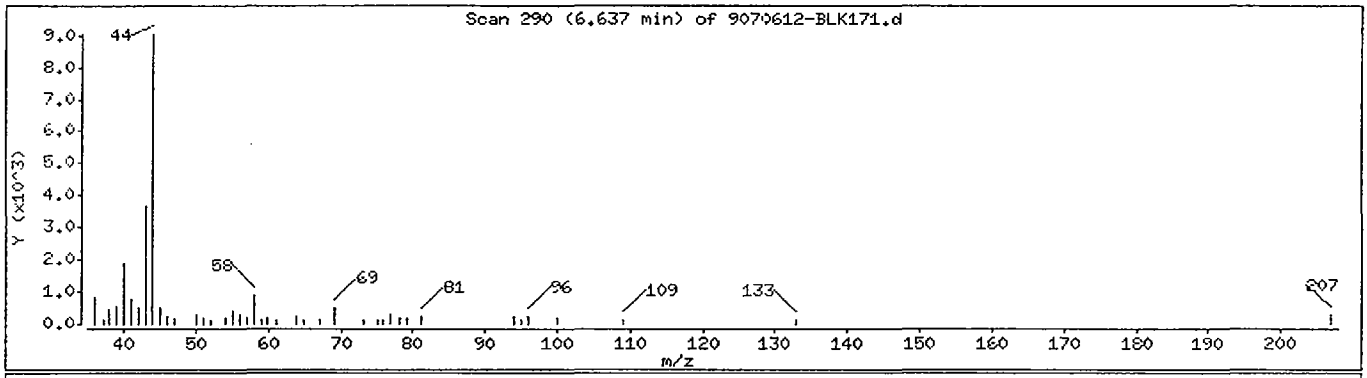
Operator: JAO

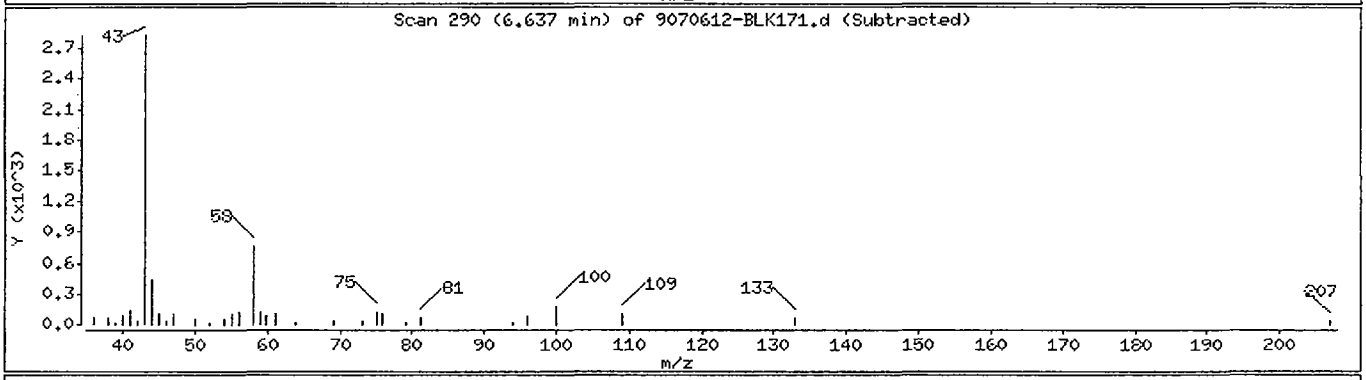
Column phase: SPB-624

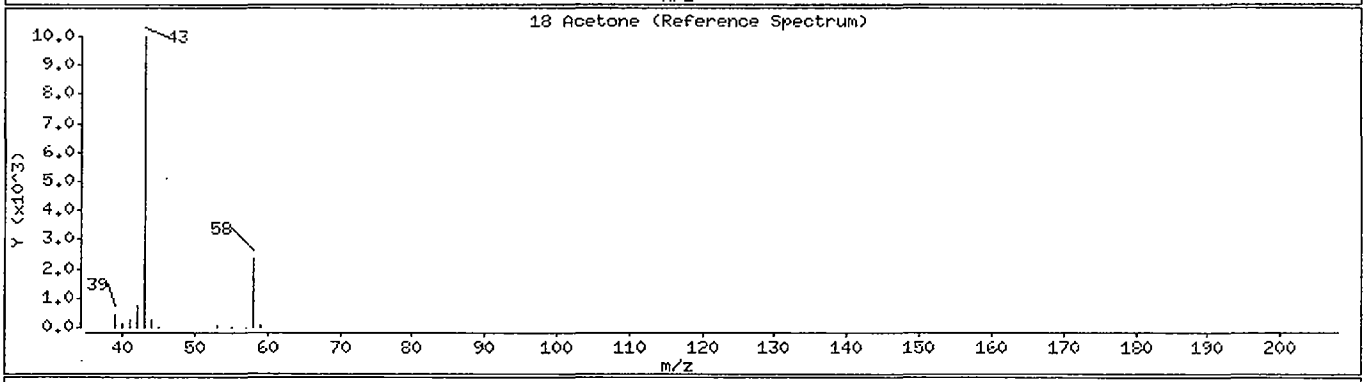
Column diameter: 0.32

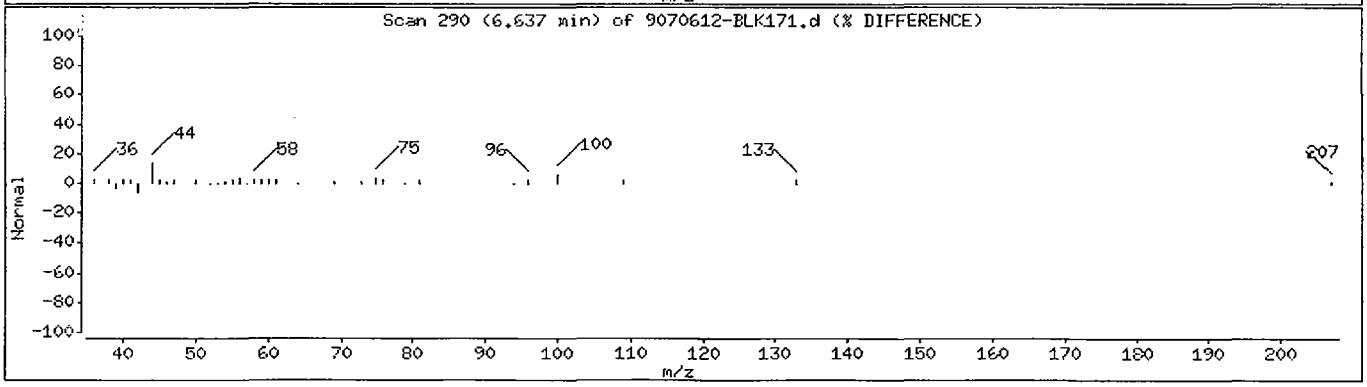
18 Acetone

Concentration: 2.1 ug/L









FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJX

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BLK171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	U
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VBLKJX

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BLK1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BLK171

Level: (low/med) LOW Date Received: _____

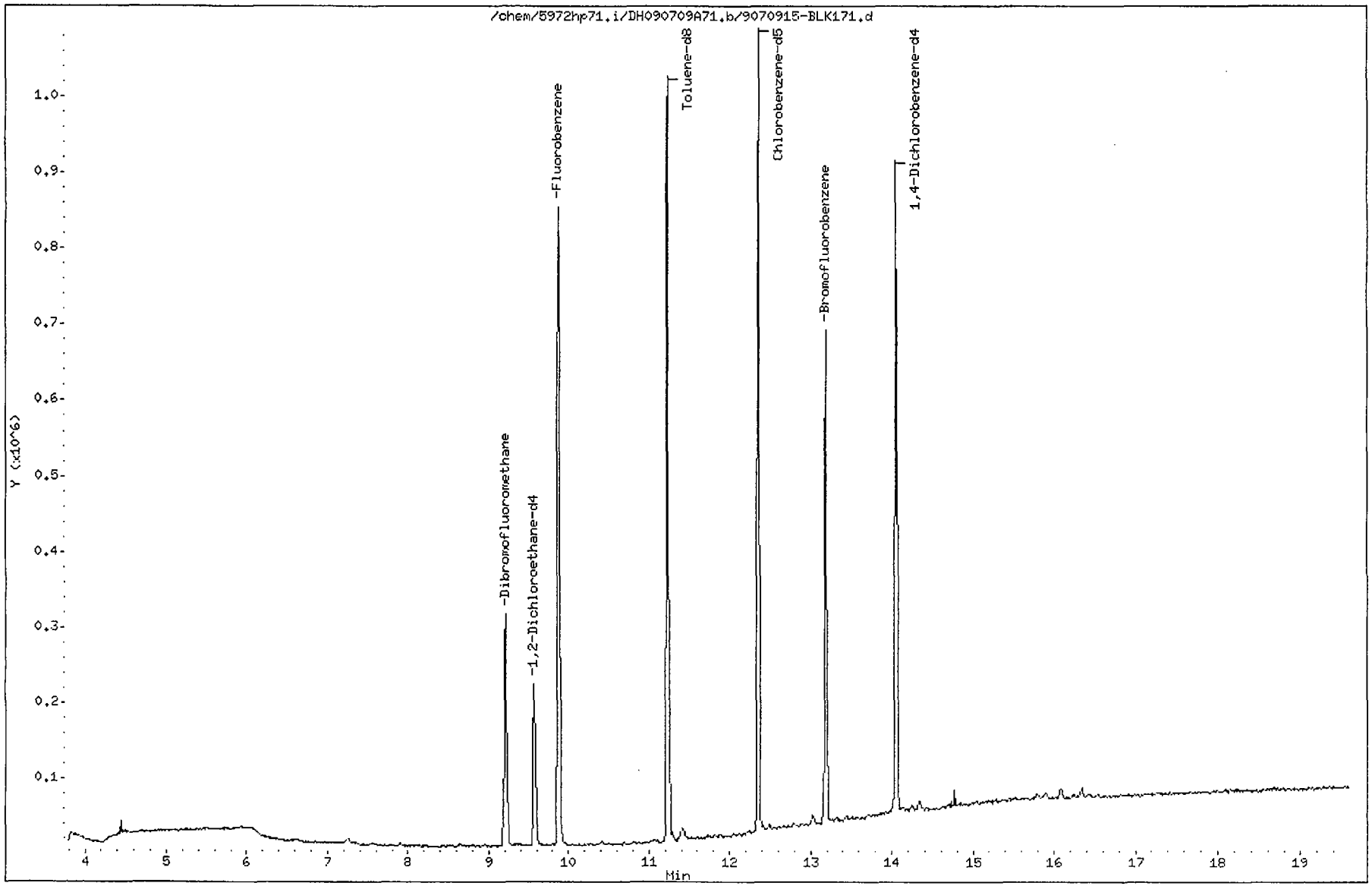
% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-BLK171.d
Date : 09-JUL-2009 18:19
Client ID: VBLKJX
Instrument: 5972hp71.i
Sample Info: 9070915-BLK1:JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/9070915-BLK171.d
Report Date: 10-Jul-2009 18:38

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/9070915-BLK171.d
Lab Smp Id: 9070915-BLK1 Client Smp ID: VBLKJX
Inj Date : 09-JUL-2009 18:19
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070915-BLK1:JAO
Misc Info : VBLKJX
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 5 QC Sample: BLANK
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
* 1	Fluorobenzene	96	9.877	9.883	(1.000)	730200	125.000	
* 2	Chlorobenzene-d5	117	12.360	12.356	(1.000)	479018	125.000	
* 3	1,4-Dichlorobenzene-d4	152	14.054	14.060	(1.000)	202482	125.000	
$ 4	Dibromofluoromethane	113	9.217	9.213	(0.933)	194646	121.204	4.8
$ 5	1,2-Dichloroethane-d4	65	9.572	9.577	(0.969)	161182	128.975	5.2
$ 6	Toluene-d8	98	11.237	11.233	(0.909)	634202	122.256	4.9
$ 7	Bromofluorobenzene	95	13.187	13.183	(0.938)	221087	126.948	5.1
8	Dichlorodifluoromethane	85	Compound Not Detected.					
9	Chloromethane	50	Compound Not Detected.					
10	Vinyl Chloride	62	Compound Not Detected.					
11	Bromomethane	94	Compound Not Detected.					
12	Chloroethane	64	Compound Not Detected.					
13	Trichlorofluoromethane	101	Compound Not Detected.					
17	1,1-Dichloroethene	96	Compound Not Detected.					
16	1,1,2-trichloro-1,2,2-trifluo	85	Compound Not Detected.					

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-BLK171.d
Report Date: 10-Jul-2009 18:38

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	18 Acetone	43	Compound Not Detected.					
	20 Carbon disulfide	76	Compound Not Detected.					
	24 Methyl acetate	43	Compound Not Detected.					
	25 Methylene Chloride	84	Compound Not Detected.					
	27 Methyl-tert-butyl ether	73	Compound Not Detected.					
	28 trans-1,2-Dichloroethene	96	Compound Not Detected.					
	32 1,1-Dichloroethane	63	Compound Not Detected.					
	34 2-butanone	43	Compound Not Detected.					
	36 cis-1,2-Dichloroethene	96	Compound Not Detected.					
	40 Chloroform	83	Compound Not Detected.					
	42 1,1,1-Trichloroethane	97	Compound Not Detected.					
	43 Cyclohexane	84	Compound Not Detected.					
	46 Carbon Tetrachloride	117	Compound Not Detected.					
	47 Benzene	78	Compound Not Detected.					
	48 1,2-Dichloroethane	62	Compound Not Detected.					
	49 Trichloroethene	130	Compound Not Detected.					
	50 Methylcyclohexane	83	Compound Not Detected.					
	51 1,2-Dichloropropane	63	Compound Not Detected.					
	55 Bromodichloromethane	83	Compound Not Detected.					
	57 cis-1,3-Dichloropropene	75	Compound Not Detected.					
	58 4-Methyl-2-pentanone	43	Compound Not Detected.					
	59 Toluene	92	Compound Not Detected.					
	61 trans-1,3-Dichloropropene	75	Compound Not Detected.					
	62 1,1,2-Trichloroethane	97	Compound Not Detected.					
	63 2-hexanone	43	Compound Not Detected.					
	65 Tetrachloroethene	164	Compound Not Detected.					
	66 Dibromochloromethane	129	Compound Not Detected.					
	67 1,2-Dibromoethane	107	Compound Not Detected.					
	69 Chlorobenzene	112	Compound Not Detected.					
	70 Ethylbenzene	106	Compound Not Detected.					
	72 m,p-Xylene	106	Compound Not Detected.					
	73 o-Xylene	106	Compound Not Detected.					
	74 Styrene	104	Compound Not Detected.					
	75 Bromoform	173	Compound Not Detected.					
	76 Isopropyl Benzene	105	Compound Not Detected.					
	77 1,1,2,2-Tetrachloroethane	83	Compound Not Detected.					
	90 1,3-Dichlorobenzene	146	Compound Not Detected.					
	91 1,4-Dichlorobenzene	146	Compound Not Detected.					
	93 1,2-Dichlorobenzene	146	Compound Not Detected.					
	94 1,2-Dibromo-3-Chloropropane	75	Compound Not Detected.					
	95 1,2,4-Trichlorobenzene	180	Compound Not Detected.					
M	99 1,2-Dichloroethene (total)	96	Compound Not Detected.					
M	100 Xylene (total)	106	Compound Not Detected.					

c. Laboratory Control Sample Data

- Tabulated Results (Form I VOA)

- Reconstructed Ion Chromatogram and quantitation report

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.2	
74-87-3	Chloromethane	5.1	
75-01-4	Vinyl Chloride	5.8	
74-83-9	Bromomethane	5.1	
75-00-3	Chloroethane	5.8	
75-69-4	Trichlorofluoromethane	5.4	
75-35-4	1,1-Dichloroethene	5.3	
75-15-0	Carbon disulfide	5.5	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.4	
67-64-1	Acetone	26	
79-20-9	Methyl acetate	5.9	
75-09-2	Methylene Chloride	4.9	
156-60-5	trans-1,2-Dichloroethene	5.2	
1634-04-4	Methyl-tert-butyl ether	5.4	
75-34-3	1,1-Dichloroethane	5.5	
156-59-2	cis-1,2-Dichloroethene	5.2	
78-93-3	2-butanone	28	
67-66-3	Chloroform	5.3	
71-55-6	1,1,1-Trichloroethane	5.2	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	5.4	
107-06-2	1,2-Dichloroethane	5.4	
79-01-6	Trichloroethene	5.1	
78-87-5	1,2-Dichloropropane	5.7	
75-27-4	Bromodichloromethane	5.3	
10061-01-5	cis-1,3-Dichloropropene	5.4	
108-10-1	4-Methyl-2-pentanone	27	
108-88-3	Toluene	5.2	
10061-02-6	trans-1,3-Dichloropropene	5.5	
79-00-5	1,1,2-Trichloroethane	5.3	
127-18-4	Tetrachloroethene	4.9	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.2	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

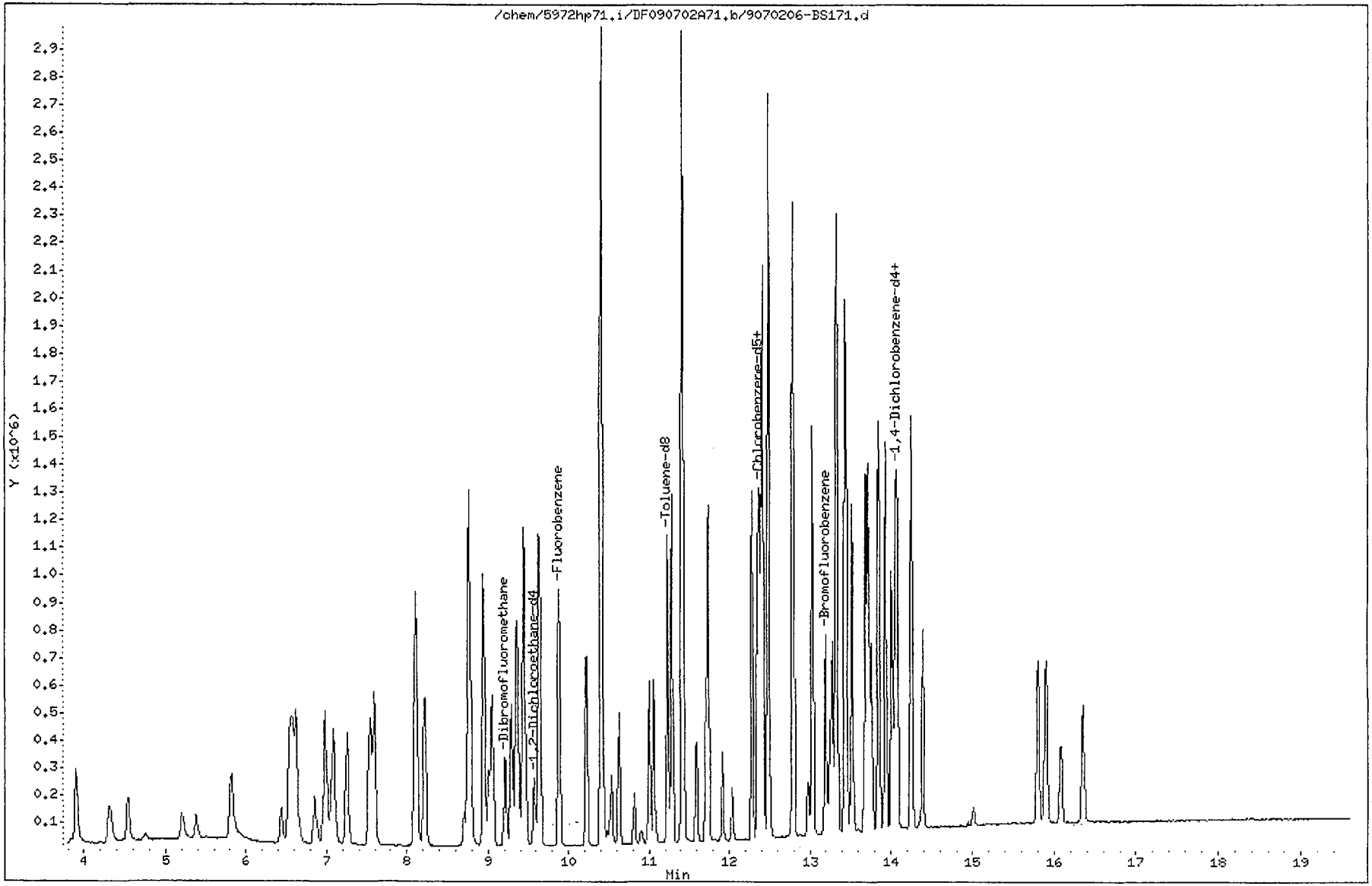
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.3	
108-90-7	Chlorobenzene	5.1	
100-41-4	Ethylbenzene	5.2	
108-38-3	m,p-Xylene	10	
95-47-6	o-Xylene	5.3	
100-42-5	Styrene	5.3	
75-25-2	Bromoform	5.0	
98-82-8	Isopropyl Benzene	5.2	
79-34-5	1,1,2,2-Tetrachloroethane	5.2	
541-73-1	1,3-Dichlorobenzene	4.9	
106-46-7	1,4-Dichlorobenzene	4.9	
95-50-1	1,2-Dichlorobenzene	5.0	
96-12-8	1,2-Dibromo-3-Chloropropane	4.9	
120-82-1	1,2,4-Trichlorobenzene	4.8	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	16	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.5	

Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BS171.d
Date : 02-JUL-2009 12:08
Client ID: VJHLCS
Sample Info: 9070206-BS1;JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BS171.d
Report Date: 06-Jul-2009 16:51

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/9070206-BS171.d
Lab Smp Id: 9070206-BS1 Client Smp ID: VJHLCS
Inj Date : 02-JUL-2009 12:08
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070206-BS1:JAO
Misc Info : VJHLCS
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:43 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1	Fluorobenzene	96	9.879	9.884	(1.000)	788594	125.000	
* 2	Chlorobenzene-d5	117	12.362	12.357	(1.000)	511717	125.000	
* 3	1,4-Dichlorobenzene-d4	152	14.056	14.051	(1.000)	254163	125.000	
$ 4	Dibromofluoromethane	113	9.209	9.214	(0.932)	211808	122.154	4.9
$ 5	1,2-Dichloroethane-d4	65	9.573	9.578	(0.969)	177252	131.368	5.3
$ 6	Toluene-d8	98	11.229	11.233	(0.908)	685409	124.030	5.0
$ 7	Bromofluorobenzene	95	13.189	13.184	(0.938)	251915	113.372	4.5
8	Dichlorodifluoromethane	85	3.899	3.894	(0.395)	383953	130.299	5.2
9	Chloromethane	50	4.312	4.307	(0.437)	293800	128.411	5.1
10	Vinyl Chloride	62	4.529	4.534	(0.458)	245294	144.095	5.8
11	Bromomethane	94	5.199	5.204	(0.526)	115313	127.033	5.1
12	Chloroethane	64	5.376	5.381	(0.544)	104725	145.974	5.8
13	Trichlorofluoromethane	101	5.820	5.815	(0.589)	387115	135.098	5.4
17	1,1-Dichloroethene	96	6.618	6.623	(0.670)	212302	133.745	5.3
16	1,1,2-trichloro-1,2,2-trifluo	85	6.578	6.573	(0.666)	154550	133.757	5.4

Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BS171.d
Report Date: 06-Jul-2009 16:51

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.628	6.632	(0.671)	116013	645.402	26
20	Carbon disulfide	76	6.982	6.987	(0.707)	981016	137.200	5.5
24	Methyl acetate	43	7.051	7.056	(0.714)	187294	146.426	5.9
25	Methylene Chloride	84	7.258	7.253	(0.735)	227063	123.027	4.9
27	Methyl-tert-butyl ether	73	7.554	7.549	(0.765)	368712	135.146	5.4
28	trans-1,2-Dichloroethene	96	7.593	7.598	(0.769)	236379	130.412	5.2
32	1,1-Dichloroethane	63	8.125	8.120	(0.822)	461799	136.499	5.5
34	2-butanone	43	8.697	8.701	(0.880)	201472	694.161	28
36	cis-1,2-Dichloroethene	96	8.766	8.760	(0.887)	235401	129.618	5.2
40	Chloroform	83	9.051	9.056	(0.916)	447807	131.816	5.3
42	1,1,1-Trichloroethane	97	9.288	9.293	(0.940)	377593	129.839	5.2
43	Cyclohexane	84	9.357	9.352	(0.947)	343328	131.073	5.2
46	Carbon Tetrachloride	117	9.455	9.460	(0.957)	334135	130.476	5.2
47	Benzene	78	9.633	9.637	(0.975)	906675	133.852	5.4
48	1,2-Dichloroethane	62	9.652	9.647	(0.977)	230099	135.775	5.4
49	Trichloroethene	130	10.224	10.219	(1.035)	223642	127.589	5.1
50	Methylcyclohexane	83	10.401	10.406	(1.053)	395319	136.483	5.5
51	1,2-Dichloropropane	63	10.421	10.425	(1.055)	218314	143.507	5.7
55	Bromodichloromethane	83	10.628	10.632	(1.076)	298572	132.745	5.3
57	cis-1,3-Dichloropropene	75	11.002	11.007	(1.114)	326649	134.971	5.4
58	4-Methyl-2-pentanone	43	11.061	11.066	(0.895)	476142	687.055	27
59	Toluene	92	11.288	11.293	(0.913)	517080	128.813	5.2
61	trans-1,3-Dichloropropene	75	11.436	11.430	(0.925)	268432	136.936	5.5
62	1,1,2-Trichloroethane	97	11.593	11.588	(0.938)	109436	132.294	5.3
63	2-hexanone	43	11.711	11.706	(0.947)	325172	697.512	28
65	Tetrachloroethene	164	11.741	11.746	(0.950)	169990	122.730	4.9
66	Dibromochloromethane	129	11.918	11.913	(0.964)	163206	130.153	5.2
67	1,2-Dibromoethane	107	12.037	12.041	(0.974)	119131	131.536	5.3
69	Chlorobenzene	112	12.381	12.386	(1.002)	500445	128.347	5.1
70	Ethylbenzene	106	12.411	12.416	(1.004)	275176	128.939	5.2
72	m,p-Xylene	106	12.490	12.485	(1.010)	690955	258.383	10
73	o-Xylene	106	12.785	12.790	(1.034)	326711	132.129	5.3
74	Styrene	104	12.795	12.790	(1.035)	535700	131.536	5.3
75	Bromoform	173	12.972	12.977	(1.049)	80517	125.581	5.0
76	Isopropyl Benzene	105	13.032	13.026	(1.054)	942449	130.708	5.2
77	1,1,2,2-Tetrachloroethane	83	13.238	13.233	(0.942)	145890	129.563	5.2
90	1,3-Dichlorobenzene	146	14.007	14.012	(0.996)	392313	121.667	4.9
91	1,4-Dichlorobenzene	146	14.076	14.081	(1.001)	388845	122.414	4.9
93	1,2-Dichlorobenzene	146	14.391	14.386	(1.024)	317316	123.753	5.0
94	1,2-Dibromo-3-Chloropropane	75	15.002	15.007	(1.067)	20116	121.862	4.9
95	1,2,4-Trichlorobenzene	180	15.800	15.805	(1.124)	206821	120.468	4.8
M 99	1,2-Dichloroethene (total)	96				471780	260.029	10
M 100	Xylene (total)	106				1017666	411.566	16

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.7	
74-87-3	Chloromethane	5.5	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	5.7	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	5.5	
75-15-0	Carbon disulfide	5.6	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.3	
67-64-1	Acetone	26	
79-20-9	Methyl acetate	5.6	
75-09-2	Methylene Chloride	5.3	
156-60-5	trans-1,2-Dichloroethene	5.5	
1634-04-4	Methyl-tert-butyl ether	5.6	
75-34-3	1,1-Dichloroethane	5.9	
156-59-2	cis-1,2-Dichloroethene	5.6	
78-93-3	2-butanone	28	
67-66-3	Chloroform	5.6	
71-55-6	1,1,1-Trichloroethane	5.3	
56-23-5	Carbon Tetrachloride	5.3	
71-43-2	Benzene	5.7	
107-06-2	1,2-Dichloroethane	5.7	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	5.6	
10061-01-5	cis-1,3-Dichloropropene	5.4	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.5	
10061-02-6	trans-1,3-Dichloropropene	5.6	
79-00-5	1,1,2-Trichloroethane	5.7	
127-18-4	Tetrachloroethene	5.1	
591-78-6	2-hexanone	29	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJHLCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070206-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070206-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/02/09

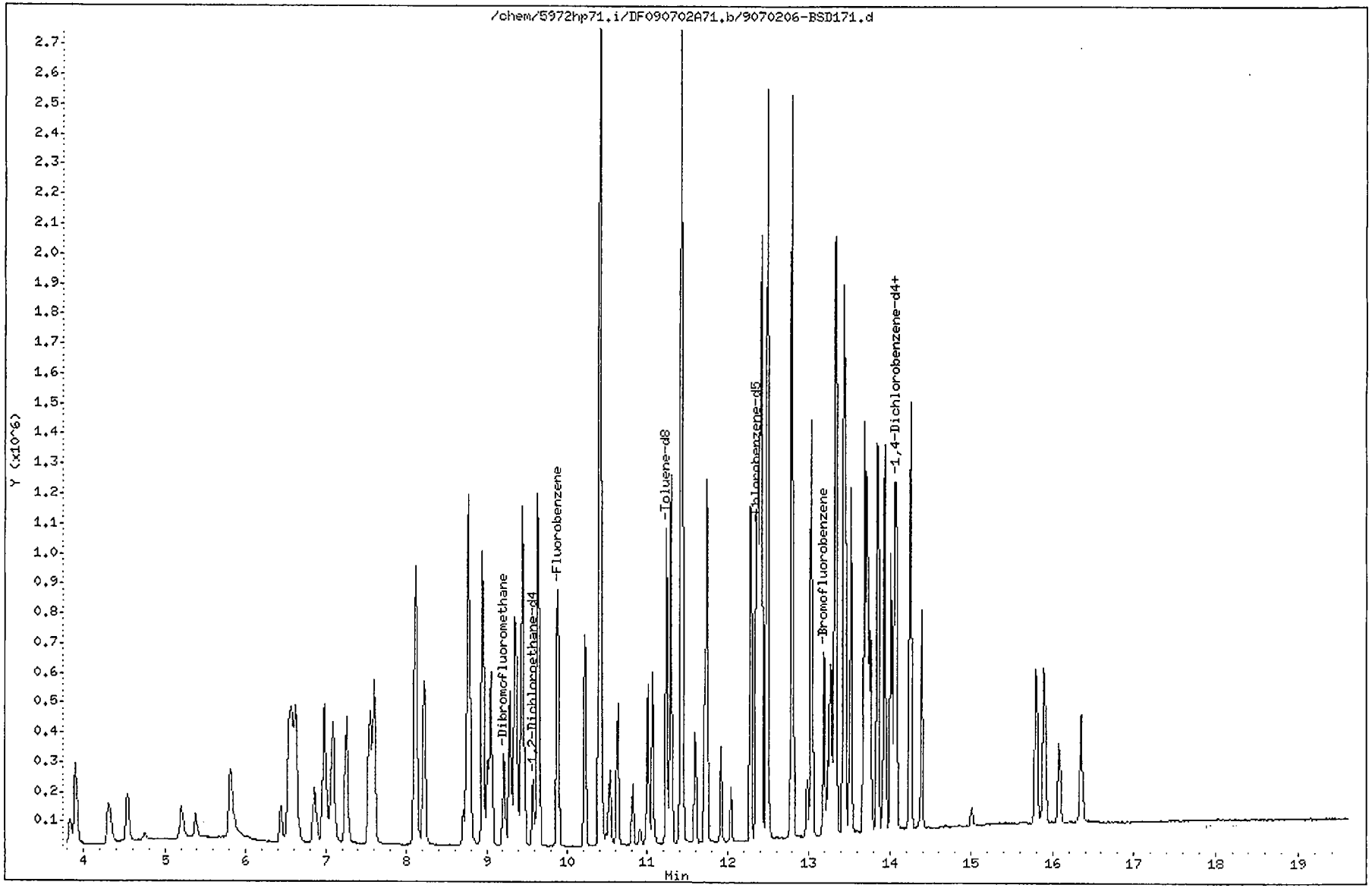
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.6	
108-90-7	Chlorobenzene	5.5	
100-41-4	Ethylbenzene	5.5	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.6	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	5.2	
98-82-8	Isopropyl Benzene	5.5	
79-34-5	1,1,2,2-Tetrachloroethane	5.7	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	5.3	
120-82-1	1,2,4-Trichlorobenzene	5.1	
540-59-0	1,2-Dichloroethene (total)	11	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.5	

Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BSD171.d
Date : 02-JUL-2009 12:36
Client ID: VJHLCSD
Sample Info: 9070206-BSD1:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BSD171.d
Report Date: 06-Jul-2009 16:51

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090702A71.b/9070206-BSD171.d
Lab Smp Id: 9070206-BSD1 Client Smp ID: VJHLCSD
Inj Date : 02-JUL-2009 12:36
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070206-BSD1:JAO
Misc Info : VJHLCSD
Comment :
Method : /chem/5972hp71.i/DF090702A71.b/W8260-B-25MLv11.m
Meth Date : 06-Jul-2009 15:43 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 7 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1	Fluorobenzene	96	9.883	9.884	(1.000)	750554	125.000	
* 2	Chlorobenzene-d5	117	12.356	12.357	(1.000)	475822	125.000	
* 3	1,4-Dichlorobenzene-d4	152	14.060	14.051	(1.000)	219563	125.000	
$ 4	Dibromofluoromethane	113	9.213	9.214	(0.932)	199194	120.655	4.8
$ 5	1,2-Dichloroethane-d4	65	9.577	9.578	(0.969)	160653	125.006	5.0
$ 6	Toluene-d8	98	11.232	11.233	(0.909)	641133	124.946	5.0
$ 7	Bromofluorobenzene	95	13.183	13.184	(0.938)	232770	122.671	4.9
8	Dichlorodifluoromethane	85	3.893	3.894	(0.394)	402638	143.566	5.7
9	Chloromethane	50	4.306	4.307	(0.436)	299309	137.449	5.5
10	Vinyl Chloride	62	4.533	4.534	(0.459)	246604	152.207	6.1
11	Bromomethane	94	5.203	5.204	(0.526)	123366	141.718	5.7
12	Chloroethane	64	5.380	5.381	(0.544)	104873	153.589	6.1
13	Trichlorofluoromethane	101	5.814	5.815	(0.588)	396773	145.486	5.8
17	1,1-Dichloroethene	96	6.622	6.623	(0.670)	208290	137.868	5.5
16	1,1,2-trichloro-1,2,2-trifluo	85	6.572	6.573	(0.665)	145230	132.061	5.3

Data File: /chem/5972hp71.i/DF090702A71.b/9070206-BSD171.d
Report Date: 06-Jul-2009 16:51

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	18 Acetone	43	6.631	6.632	(0.671)	109078	637.577	26
	20 Carbon disulfide	76	6.986	6.987	(0.707)	957212	140.656	5.6
	24 Methyl acetate	43	7.055	7.056	(0.714)	171022	140.481	5.6
	25 Methylene Chloride	84	7.252	7.253	(0.734)	231601	133.001	5.3
	27 Methyl-tert-butyl ether	73	7.558	7.549	(0.765)	365515	140.764	5.6
	28 trans-1,2-Dichloroethene	96	7.597	7.598	(0.769)	236579	137.137	5.5
	32 1,1-Dichloroethane	63	8.119	8.120	(0.822)	473604	147.083	5.9
	34 2-butanone	43	8.700	8.701	(0.880)	191865	694.565	28
	36 cis-1,2-Dichloroethene	96	8.759	8.760	(0.886)	243876	141.091	5.6
	40 Chloroform	83	9.055	9.056	(0.916)	456000	141.030	5.6
	42 1,1,1-Trichloroethane	97	9.291	9.293	(0.940)	368883	133.273	5.3
	43 Cyclohexane	84	9.351	9.352	(0.946)	323986	129.958	5.2
	46 Carbon Tetrachloride	117	9.459	9.460	(0.957)	322105	132.153	5.3
	47 Benzene	78	9.636	9.637	(0.975)	920002	142.704	5.7
	48 1,2-Dichloroethane	62	9.646	9.647	(0.976)	230059	142.632	5.7
	49 Trichloroethene	130	10.218	10.219	(1.034)	222890	133.604	5.3
	50 Methylcyclohexane	83	10.405	10.406	(1.053)	375989	136.388	5.5
	51 1,2-Dichloropropane	63	10.425	10.425	(1.055)	219920	151.890	6.1
	55 Bromodichloromethane	83	10.631	10.632	(1.076)	298201	139.299	5.6
	57 cis-1,3-Dichloropropene	75	11.006	11.007	(1.114)	309530	134.379	5.4
	58 4-Methyl-2-pentanone	43	11.065	11.066	(0.896)	465355	722.146	29
	59 Toluene	92	11.291	11.293	(0.914)	516149	138.281	5.5
	61 trans-1,3-Dichloropropene	75	11.429	11.430	(0.925)	257191	141.100	5.6
	62 1,1,2-Trichloroethane	97	11.587	11.588	(0.938)	108878	141.548	5.7
	63 2-hexanone	43	11.705	11.706	(0.947)	310370	715.984	29
	65 Tetrachloroethene	164	11.745	11.746	(0.951)	162722	126.345	5.1
	66 Dibromochloromethane	129	11.912	11.913	(0.964)	158460	135.901	5.4
	67 1,2-Dibromoethane	107	12.040	12.041	(0.974)	117124	139.076	5.6
	69 Chlorobenzene	112	12.385	12.386	(1.002)	502284	138.536	5.5
	70 Ethylbenzene	106	12.415	12.416	(1.005)	273509	137.826	5.5
	72 m,p-Xylene	106	12.493	12.485	(1.011)	683379	274.828	11
	73 o-Xylene	106	12.789	12.790	(1.035)	323596	140.742	5.6
	74 Styrene	104	12.789	12.790	(1.035)	526998	139.161	5.6
	75 Bromoform	173	12.976	12.977	(1.050)	77950	130.748	5.2
	76 Isopropyl Benzene	105	13.025	13.026	(1.054)	913707	136.281	5.5
	77 1,1,2,2-Tetrachloroethane	83	13.232	13.233	(0.941)	139185	143.087	5.7
	90 1,3-Dichlorobenzene	146	14.011	14.012	(0.996)	370029	132.840	5.3
	91 1,4-Dichlorobenzene	146	14.080	14.081	(1.001)	373305	136.042	5.4
	93 1,2-Dichlorobenzene	146	14.385	14.386	(1.023)	301649	136.181	5.4
	94 1,2-Dibromo-3-Chloropropane	75	15.006	15.007	(1.067)	18954	132.917	5.3
	95 1,2,4-Trichlorobenzene	180	15.804	15.805	(1.124)	187586	126.483	5.1
M	99 1,2-Dichloroethene (total)	96				480455	278.232	11
M	100 Xylene (total)	106				1006975	437.964	18

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.1	
74-87-3	Chloromethane	4.8	
75-01-4	Vinyl Chloride	5.3	
74-83-9	Bromomethane	5.3	
75-00-3	Chloroethane	5.5	
75-69-4	Trichlorofluoromethane	5.1	
75-35-4	1,1-Dichloroethene	4.7	
75-15-0	Carbon disulfide	5.0	
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.8	
67-64-1	Acetone	26	
79-20-9	Methyl acetate	6.0	
75-09-2	Methylene Chloride	4.6	
156-60-5	trans-1,2-Dichloroethene	4.7	
1634-04-4	Methyl-tert-butyl ether	5.4	
75-34-3	1,1-Dichloroethane	5.5	
156-59-2	cis-1,2-Dichloroethene	4.9	
78-93-3	2-butanone	29	
67-66-3	Chloroform	5.1	
71-55-6	1,1,1-Trichloroethane	4.8	
56-23-5	Carbon Tetrachloride	4.8	
71-43-2	Benzene	5.1	
107-06-2	1,2-Dichloroethane	5.6	
79-01-6	Trichloroethene	4.6	
78-87-5	1,2-Dichloropropane	5.8	
75-27-4	Bromodichloromethane	5.2	
10061-01-5	cis-1,3-Dichloropropene	5.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	4.7	
10061-02-6	trans-1,3-Dichloropropene	5.3	
79-00-5	1,1,2-Trichloroethane	5.0	
127-18-4	Tetrachloroethene	4.0	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	4.9	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BS171

Level: (low/med) LOW Date Received: _____

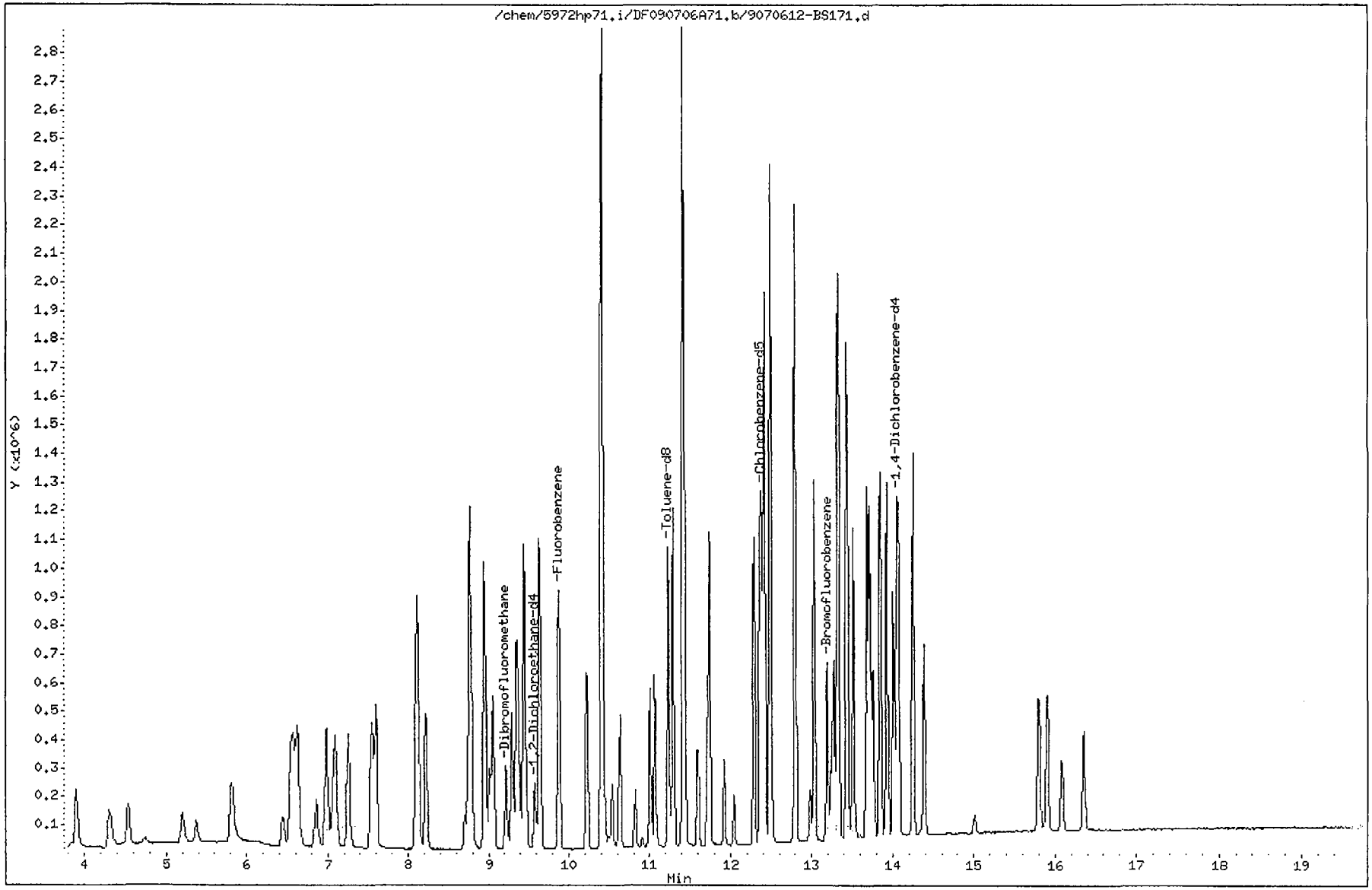
% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	4.9	
108-90-7	Chlorobenzene	4.7	
100-41-4	Ethylbenzene	4.6	
108-38-3	m,p-Xylene	9.2	
95-47-6	o-Xylene	4.7	
100-42-5	Styrene	4.7	
75-25-2	Bromoform	4.4	
98-82-8	Isopropyl Benzene	4.6	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.6	
95-50-1	1,2-Dichlorobenzene	4.7	
96-12-8	1,2-Dibromo-3-Chloropropane	5.3	
120-82-1	1,2,4-Trichlorobenzene	4.2	
540-59-0	1,2-Dichloroethene (total)	9.6	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	4.7	
108-87-2	Methylcyclohexane	5.0	

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BS171.d
Date : 06-JUL-2009 13:07
Client ID: VJILCS
Instrument: 5972hp71.i
Sample Info: 9070612-BS1:JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BS171.d
Report Date: 07-Jul-2009 15:19

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090706A71.b/9070612-BS171.d
Lab Smp Id: 9070612-BS1 Client Smp ID: VJILCS
Inj Date : 06-JUL-2009 13:07
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070612-BS1:JAO
Misc Info : VJILCS
Comment :
Method : /chem/5972hp71.i/DF090706A71.b/W8260-B-25MLv11.m
Meth Date : 07-Jul-2009 14:53 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
*	1 Fluorobenzene	96	9.882	9.882	(1.000)	750344	125.000	
*	2 Chlorobenzene-d5	117	12.365	12.365	(1.000)	499822	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.060	14.059	(1.000)	222489	125.000	
$	4 Dibromofluoromethane	113	9.212	9.212	(0.932)	191187	115.682	4.6
$	5 1,2-Dichloroethane-d4	65	9.577	9.577	(0.969)	169371	131.934	5.3
$	6 Toluene-d8	98	11.232	11.232	(0.908)	618464	112.324	4.5
$	7 Bromofluorobenzene	95	13.193	13.192	(0.938)	229069	118.550	4.7
	8 Dichlorodifluoromethane	85	3.892	3.892	(0.394)	286556	102.204	4.1
	9 Chloromethane	50	4.306	4.306	(0.436)	263784	121.169	4.8
	10 Vinyl Chloride	62	4.533	4.532	(0.459)	214312	132.313	5.3
	11 Bromomethane	94	5.203	5.202	(0.526)	115586	133.362	5.3
	12 Chloroethane	64	5.380	5.380	(0.544)	94047	137.773	5.5
	13 Trichlorofluoromethane	101	5.813	5.813	(0.588)	344300	126.281	5.1
	17 1,1-Dichloroethene	96	6.621	6.621	(0.670)	178455	118.153	4.7
	16 1,1,2-trichloro-1,2,2-trifluo	85	6.572	6.582	(0.665)	130848	119.017	4.8

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BS171.d
Report Date: 07-Jul-2009 15:19

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.631	6.631	(0.671)	110202	644.327	26
20	Carbon disulfide	76	6.986	6.986	(0.707)	843309	123.953	5.0
24	Methyl acetate	43	7.055	7.055	(0.714)	183573	150.833	6.0
25	Methylene Chloride	84	7.252	7.252	(0.734)	202326	114.189	4.6
27	Methyl-tert-butyl ether	73	7.557	7.557	(0.765)	350637	135.072	5.4
28	trans-1,2-Dichloroethene	96	7.597	7.596	(0.769)	200728	116.388	4.7
32	1,1-Dichloroethane	63	8.129	8.128	(0.823)	440073	136.708	5.5
34	2-butanone	43	8.710	8.710	(0.881)	201888	731.053	29
36	cis-1,2-Dichloroethene	96	8.769	8.769	(0.887)	211707	122.514	4.9
40	Chloroform	83	9.055	9.055	(0.916)	412100	127.489	5.1
42	1,1,1-Trichloroethane	97	9.291	9.291	(0.940)	331253	119.711	4.8
43	Cyclohexane	84	9.360	9.360	(0.947)	291361	116.904	4.7
46	Carbon Tetrachloride	117	9.459	9.459	(0.957)	291180	119.499	4.8
47	Benzene	78	9.636	9.636	(0.975)	829011	128.626	5.1
48	1,2-Dichloroethane	62	9.646	9.646	(0.976)	227533	141.105	5.6
49	Trichloroethene	130	10.227	10.227	(1.035)	191628	114.897	4.6
50	Methylcyclohexane	83	10.404	10.404	(1.053)	341767	124.009	5.0
51	1,2-Dichloropropane	63	10.424	10.424	(1.055)	211470	146.095	5.8
55	Bromodichloromethane	83	10.631	10.631	(1.076)	280104	130.882	5.2
57	cis-1,3-Dichloropropene	75	11.005	11.005	(1.114)	305997	132.883	5.3
58	4-Methyl-2-pentanone	43	11.065	11.064	(0.895)	484552	715.830	29
59	Toluene	92	11.291	11.291	(0.913)	461148	117.613	4.7
61	trans-1,3-Dichloropropene	75	11.439	11.439	(0.925)	255344	133.360	5.3
62	1,1,2-Trichloroethane	97	11.597	11.596	(0.938)	101706	125.875	5.0
63	2-hexanone	43	11.705	11.715	(0.947)	323465	710.363	28
65	Tetrachloroethene	164	11.744	11.744	(0.950)	135483	100.144	4.0
66	Dibromochloromethane	129	11.922	11.922	(0.964)	148551	121.285	4.9
67	1,2-Dibromoethane	107	12.040	12.040	(0.974)	108050	122.140	4.9
69	Chlorobenzene	112	12.385	12.385	(1.002)	444364	116.676	4.7
70	Ethylbenzene	106	12.414	12.414	(1.004)	239741	115.009	4.6
72	m,p-Xylene	106	12.493	12.493	(1.010)	600811	230.020	9.2
73	o-Xylene	106	12.789	12.789	(1.034)	285782	118.327	4.7
74	Styrene	104	12.799	12.798	(1.035)	470690	118.324	4.7
75	Bromoform	173	12.976	12.976	(1.049)	68852	109.943	4.4
76	Isopropyl Benzene	105	13.035	13.035	(1.054)	814013	115.582	4.6
77	1,1,2,2-Tetrachloroethane	83	13.232	13.232	(0.941)	136411	138.391	5.5
90	1,3-Dichlorobenzene	146	14.010	14.010	(0.996)	327271	115.945	4.6
91	1,4-Dichlorobenzene	146	14.079	14.079	(1.001)	319139	114.773	4.6
93	1,2-Dichlorobenzene	146	14.385	14.385	(1.023)	265263	118.180	4.7
94	1,2-Dibromo-3-Chloropropane	75	15.005	15.005	(1.067)	19221	133.017	5.3
95	1,2,4-Trichlorobenzene	180	15.803	15.803	(1.124)	157681	104.921	4.2
M 99	1,2-Dichloroethene (total)	96				412435	238.908	9.6
M 100	Xylene (total)	106				886593	367.091	15

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BSD171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.4	
74-87-3	Chloromethane	5.0	
75-01-4	Vinyl Chloride	5.6	
74-83-9	Bromomethane	5.6	
75-00-3	Chloroethane	5.6	
75-69-4	Trichlorofluoromethane	5.3	
75-35-4	1,1-Dichloroethene	4.9	
75-15-0	Carbon disulfide	5.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.1	
67-64-1	Acetone	25	
79-20-9	Methyl acetate	6.3	
75-09-2	Methylene Chloride	4.7	
156-60-5	trans-1,2-Dichloroethene	5.0	
1634-04-4	Methyl-tert-butyl ether	5.3	
75-34-3	1,1-Dichloroethane	5.6	
156-59-2	cis-1,2-Dichloroethene	5.0	
78-93-3	2-butanone	28	
67-66-3	Chloroform	5.2	
71-55-6	1,1,1-Trichloroethane	5.0	
56-23-5	Carbon Tetrachloride	5.0	
71-43-2	Benzene	5.3	
107-06-2	1,2-Dichloroethane	5.6	
79-01-6	Trichloroethene	4.8	
78-87-5	1,2-Dichloropropane	6.0	
75-27-4	Bromodichloromethane	5.2	
10061-01-5	cis-1,3-Dichloropropene	5.4	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.4	
79-00-5	1,1,2-Trichloroethane	5.2	
127-18-4	Tetrachloroethene	4.4	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.0	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJILCSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070612-BSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070612-BSD171

Level: (low/med) LOW Date Received: _____

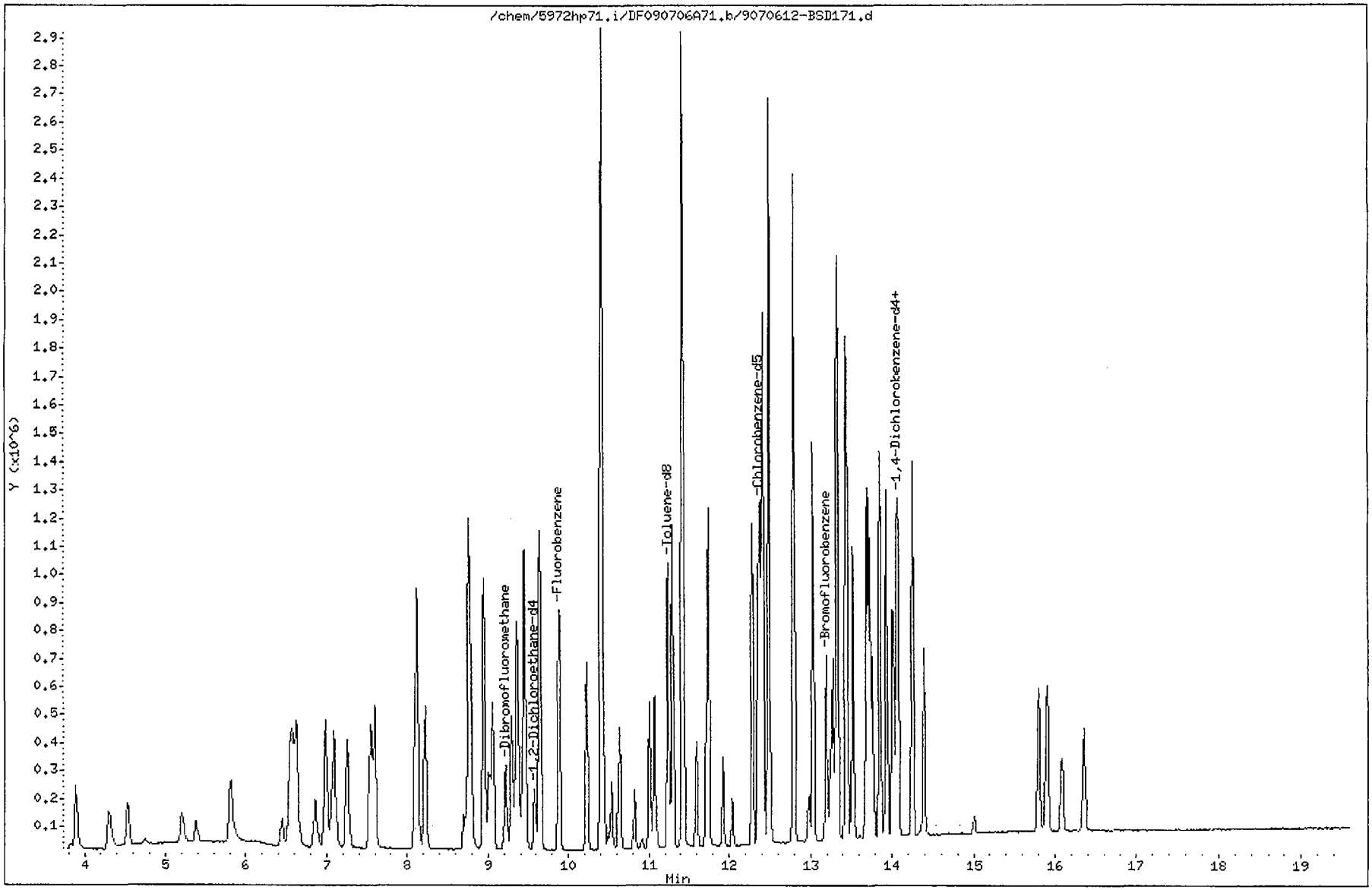
% Moisture: not dec. _____ Date Analyzed: 07/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.1	
108-90-7	Chlorobenzene	5.0	
100-41-4	Ethylbenzene	5.0	
108-38-3	m,p-Xylene	10	
95-47-6	o-Xylene	5.1	
100-42-5	Styrene	5.0	
75-25-2	Bromoform	4.5	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	4.8	
106-46-7	1,4-Dichlorobenzene	4.9	
95-50-1	1,2-Dichlorobenzene	4.9	
96-12-8	1,2-Dibromo-3-Chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	4.4	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	16	
110-82-7	Cyclohexane	5.0	
108-87-2	Methylcyclohexane	5.3	

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BSD171.d
Date : 06-JUL-2009 13:35
Client ID: VJILCSD
Instrument: 5972hp71.i
Sample Info: 9070612-BSD1:JAO
Purge Volume: 25.0
Operator: JAO
Column phase: SPB-624
Column diameter: 0.32



Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BSD171.d
Report Date: 07-Jul-2009 15:19

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DF090706A71.b/9070612-BSD171.d
Lab Smp Id: 9070612-BSD1 Client Smp ID: VJILCSD
Inj Date : 06-JUL-2009 13:35
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070612-BSD1:JAO
Misc Info : VJILCSD
Comment :
Method : /chem/5972hp71.i/DF090706A71.b/W8260-B-25MLv11.m
Meth Date : 07-Jul-2009 14:53 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 7 QC Sample: LCSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
*	1 Fluorobenzene	96	9.878	9.882	(1.000)	748519	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.365	(1.000)	485570	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.056	14.059	(1.000)	220388	125.000	
$	4 Dibromofluoromethane	113	9.218	9.212	(0.933)	191123	115.934	4.6
$	5 1,2-Dichloroethane-d4	65	9.573	9.577	(0.969)	164081	128.068	5.1
$	6 Toluene-d8	98	11.238	11.232	(0.909)	615072	115.688	4.6
$	7 Bromofluorobenzene	95	13.189	13.192	(0.938)	224332	116.976	4.7
	8 Dichlorodifluoromethane	85	3.898	3.892	(0.395)	309078	110.505	4.4
	9 Chloromethane	50	4.302	4.306	(0.435)	271479	125.008	5.0
	10 Vinyl Chloride	62	4.529	4.532	(0.458)	224951	139.220	5.6
	11 Bromomethane	94	5.198	5.202	(0.526)	122539	141.185	5.6
	12 Chloroethane	64	5.386	5.380	(0.545)	95579	140.359	5.6
	13 Trichlorofluoromethane	101	5.819	5.813	(0.589)	360927	132.702	5.3
	17 1,1-Dichloroethene	96	6.627	6.621	(0.671)	184949	122.751	4.9
	16 1,1,2-trichloro-1,2,2-trifluo	85	6.578	6.582	(0.666)	140473	128.083	5.1

Data File: /chem/5972hp71.i/DF090706A71.b/9070612-BSD171.d
Report Date: 07-Jul-2009 15:19

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
	18 Acetone	43	6.627	6.631	(0.671)	107660	630.999	25
	20 Carbon disulfide	76	6.982	6.986	(0.707)	887153	130.715	5.2
	24 Methyl acetate	43	7.061	7.055	(0.715)	190122	156.595	6.3
	25 Methylene Chloride	84	7.258	7.252	(0.735)	206167	116.986	4.7
	27 Methyl-tert-butyl ether	73	7.553	7.557	(0.765)	345706	133.497	5.3
	28 trans-1,2-Dichloroethene	96	7.602	7.596	(0.770)	215455	125.232	5.0
	32 1,1-Dichloroethane	63	8.125	8.128	(0.822)	451814	140.698	5.6
	34 2-butanone	43	8.706	8.710	(0.881)	196010	711.499	28
	36 cis-1,2-Dichloroethene	96	8.765	8.769	(0.887)	217056	125.916	5.0
	40 Chloroform	83	9.061	9.055	(0.917)	421707	130.779	5.2
	42 1,1,1-Trichloroethane	97	9.297	9.291	(0.941)	348189	126.138	5.0
	43 Cyclohexane	84	9.356	9.360	(0.947)	310264	124.792	5.0
	46 Carbon Tetrachloride	117	9.455	9.459	(0.957)	305308	125.602	5.0
	47 Benzene	78	9.642	9.636	(0.976)	848059	131.902	5.3
	48 1,2-Dichloroethane	62	9.652	9.646	(0.977)	224960	139.850	5.6
	49 Trichloroethene	130	10.223	10.227	(1.035)	199373	119.833	4.8
	50 Methylcyclohexane	83	10.410	10.404	(1.054)	367233	133.574	5.3
	51 1,2-Dichloropropane	63	10.430	10.424	(1.056)	217928	150.923	6.0
	55 Bromodichloromethane	83	10.637	10.631	(1.077)	279720	131.021	5.2
	57 cis-1,3-Dichloropropene	75	11.001	11.005	(1.114)	307393	133.814	5.4
	58 4-Methyl-2-pentanone	43	11.061	11.064	(0.895)	470269	715.121	29
	59 Toluene	92	11.287	11.291	(0.913)	474488	124.568	5.0
	61 trans-1,3-Dichloropropene	75	11.435	11.439	(0.925)	250447	134.641	5.4
	62 1,1,2-Trichloroethane	97	11.593	11.596	(0.938)	102284	130.306	5.2
	63 2-hexanone	43	11.711	11.715	(0.947)	315073	712.242	28
	65 Tetrachloroethene	164	11.740	11.744	(0.950)	143442	109.139	4.4
	66 Dibromochloromethane	129	11.918	11.922	(0.964)	147903	124.300	5.0
	67 1,2-Dibromoethane	107	12.036	12.040	(0.974)	108635	126.406	5.1
	69 Chlorobenzene	112	12.381	12.385	(1.002)	461869	124.832	5.0
	70 Ethylbenzene	106	12.410	12.414	(1.004)	251924	124.400	5.0
	72 m,p-Xylene	106	12.489	12.493	(1.010)	633861	249.796	10
	73 o-Xylene	106	12.794	12.789	(1.035)	298105	127.052	5.1
	74 Styrene	104	12.794	12.798	(1.035)	484611	125.399	5.0
	75 Bromoform	173	12.982	12.976	(1.050)	68730	112.969	4.5
	76 Isopropyl Benzene	105	13.031	13.035	(1.054)	849554	124.169	5.0
	77 1,1,2,2-Tetrachloroethane	83	13.238	13.232	(0.942)	134284	137.532	5.5
	90 1,3-Dichlorobenzene	146	14.016	14.010	(0.997)	335313	119.926	4.8
	91 1,4-Dichlorobenzene	146	14.075	14.079	(1.001)	336647	122.224	4.9
	93 1,2-Dichlorobenzene	146	14.391	14.385	(1.024)	274757	123.577	4.9
	94 1,2-Dibromo-3-Chloropropane	75	15.011	15.005	(1.068)	18705	130.680	5.2
	95 1,2,4-Trichlorobenzene	180	15.799	15.803	(1.124)	165523	111.189	4.4
M	99 1,2-Dichloroethene (total)	96				432511	251.148	10
M	100 Xylene (total)	106				931966	397.203	16

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJXLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.1	
74-87-3	Chloromethane	5.1	
75-01-4	Vinyl Chloride	5.9	
74-83-9	Bromomethane	5.8	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.6	
75-35-4	1,1-Dichloroethene	4.9	
75-15-0	Carbon disulfide	5.3	
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.8	
67-64-1	Acetone	25	
79-20-9	Methyl acetate	6.5	
75-09-2	Methylene Chloride	4.9	
156-60-5	trans-1,2-Dichloroethene	5.1	
1634-04-4	Methyl-tert-butyl ether	5.5	
75-34-3	1,1-Dichloroethane	5.7	
156-59-2	cis-1,2-Dichloroethene	5.3	
78-93-3	2-butanone	29	
67-66-3	Chloroform	5.4	
71-55-6	1,1,1-Trichloroethane	5.0	
56-23-5	Carbon Tetrachloride	4.9	
71-43-2	Benzene	5.5	
107-06-2	1,2-Dichloroethane	5.7	
79-01-6	Trichloroethene	4.8	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	5.4	
10061-01-5	cis-1,3-Dichloropropene	5.5	
108-10-1	4-Methyl-2-pentanone	28	
108-88-3	Toluene	4.8	
10061-02-6	trans-1,3-Dichloropropene	5.3	
79-00-5	1,1,2-Trichloroethane	5.2	
127-18-4	Tetrachloroethene	4.0	
591-78-6	2-hexanone	27	
124-48-1	Dibromochloromethane	4.9	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

VJXLCS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-BS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-BS171

Level: (low/med) LOW Date Received: _____

% Moisture: not dec. _____ Date Analyzed: 07/09/09

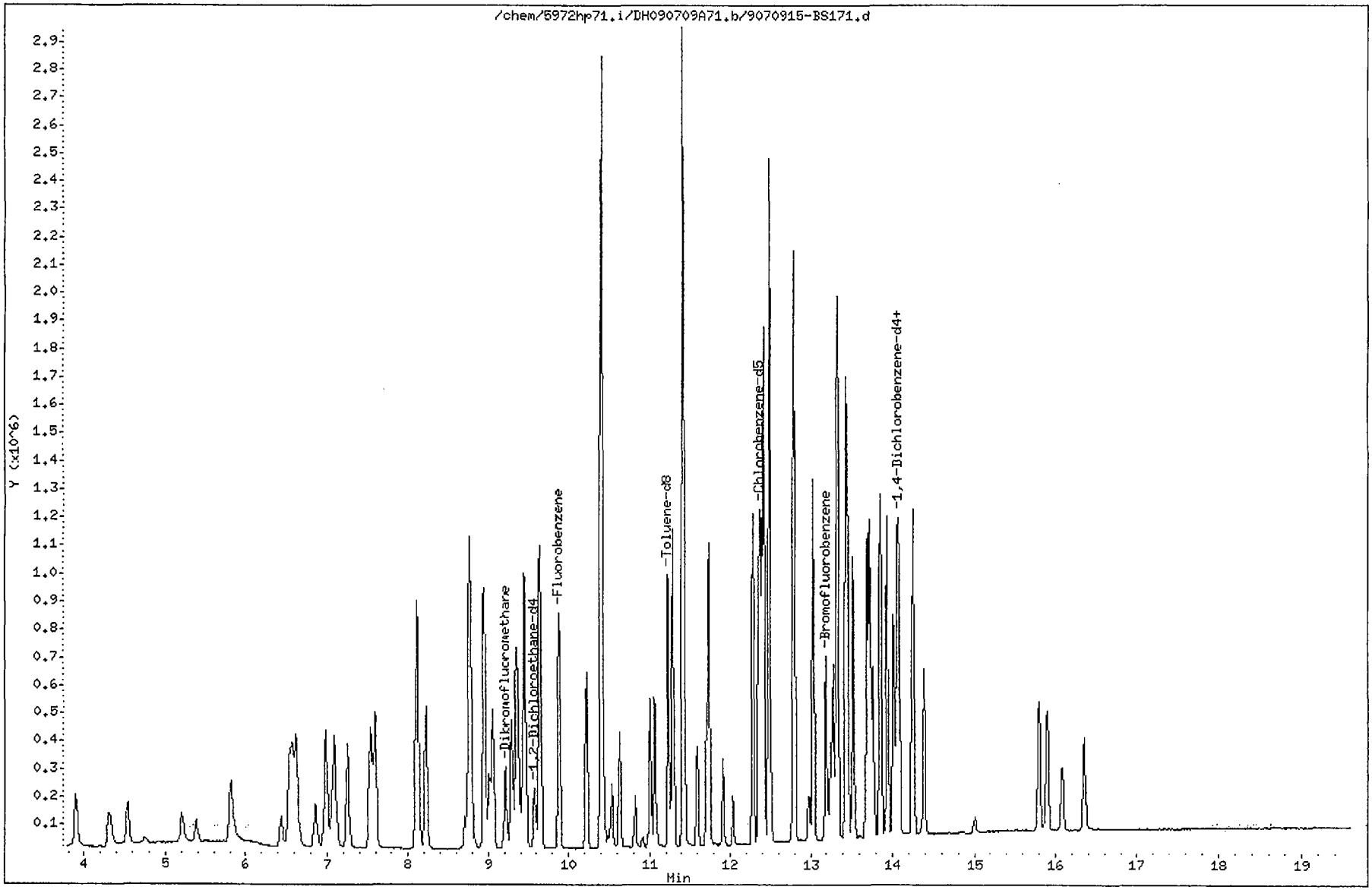
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.0	
108-90-7	Chlorobenzene	4.8	
100-41-4	Ethylbenzene	4.7	
108-38-3	m,p-Xylene	9.4	
95-47-6	o-Xylene	4.8	
100-42-5	Styrene	4.9	
75-25-2	Bromoform	4.4	
98-82-8	Isopropyl Benzene	4.6	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.6	
95-50-1	1,2-Dichlorobenzene	4.6	
96-12-8	1,2-Dibromo-3-Chloropropane	5.3	
120-82-1	1,2,4-Trichlorobenzene	4.1	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	4.8	
108-87-2	Methylcyclohexane	5.1	

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-BS171.d
Date : 09-JUL-2009 19:07
Client ID: VJXLCS
Sample Info: 9070915-BS1;JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/9070915-BS171.d
Report Date: 10-Jul-2009 18:35

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/9070915-BS171.d
Lab Smp Id: 9070915-BS1 Client Smp ID: VJXLCS
Inj Date : 09-JUL-2009 19:07
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070915-BS1:JAO
Misc Info : VJXLCS
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 6 QC Sample: LCS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
*	1 Fluorobenzene	96	9.878	9.883	(1.000)	710116	125.000	
*	2 Chlorobenzene-d5	117	12.361	12.356	(1.000)	481200	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.056	14.060	(1.000)	216773	125.000	
$	4 Dibromofluoromethane	113	9.218	9.213	(0.933)	190143	121.766	4.9
$	5 1,2-Dichloroethane-d4	65	9.573	9.577	(0.969)	161970	133.337	5.3
$	6 Toluene-d8	98	11.238	11.233	(0.909)	622034	118.667	4.7
$	7 Bromofluorobenzene	95	13.189	13.183	(0.938)	229787	122.655	4.9
	8 Dichlorodifluoromethane	85	3.898	3.893	(0.395)	272963	102.871	4.1
	9 Chloromethane	50	4.312	4.306	(0.437)	263899	128.089	5.1
	10 Vinyl Chloride	62	4.539	4.533	(0.459)	226578	147.810	5.9
	11 Bromomethane	94	5.208	5.203	(0.527)	120507	146.035	5.8
	12 Chloroethane	64	5.386	5.380	(0.545)	98388	152.297	6.1
	13 Trichlorofluoromethane	101	5.819	5.814	(0.589)	360066	139.545	5.6
	17 1,1-Dichloroethene	96	6.627	6.622	(0.671)	174952	122.396	4.9
	16 1,1,2-trichloro-1,2,2-trifluo	85	6.578	6.572	(0.666)	125579	120.695	4.8

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-BS171.d
Report Date: 10-Jul-2009 18:35

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.627	6.632	(0.671)	103083	636.847	25
20	Carbon disulfide	76	6.982	6.986	(0.707)	847493	131.625	5.3
24	Methyl acetate	43	7.061	7.055	(0.715)	187706	162.966	6.5
25	Methylene Chloride	84	7.258	7.252	(0.735)	203781	122.560	4.9
27	Methyl-tert-butyl ether	73	7.553	7.548	(0.765)	336388	136.924	5.5
28	trans-1,2-Dichloroethene	96	7.603	7.597	(0.770)	206236	126.356	5.1
32	1,1-Dichloroethane	63	8.125	8.119	(0.822)	431351	141.590	5.7
34	2-butanone	43	8.706	8.701	(0.881)	186678	714.271	29
36	cis-1,2-Dichloroethene	96	8.765	8.760	(0.887)	215261	131.628	5.3
40	Chloroform	83	9.051	9.055	(0.916)	410767	134.275	5.4
42	1,1,1-Trichloroethane	97	9.287	9.292	(0.940)	329371	125.774	5.0
43	Cyclohexane	84	9.356	9.351	(0.947)	280913	119.097	4.8
46	Carbon Tetrachloride	117	9.455	9.459	(0.957)	284247	123.262	4.9
47	Benzene	78	9.632	9.636	(0.975)	831656	136.346	5.5
48	1,2-Dichloroethane	62	9.652	9.646	(0.977)	218492	143.174	5.7
49	Trichloroethene	130	10.223	10.218	(1.035)	189145	119.833	4.8
50	Methylcyclohexane	83	10.410	10.405	(1.054)	332582	127.513	5.1
51	1,2-Dichloropropane	63	10.420	10.425	(1.055)	208918	152.508	6.1
55	Bromodichloromethane	83	10.627	10.632	(1.076)	275941	136.241	5.4
57	cis-1,3-Dichloropropene	75	11.002	11.006	(1.114)	300724	137.991	5.5
58	4-Methyl-2-pentanone	43	11.061	11.065	(0.895)	449904	690.366	28
59	Toluene	92	11.287	11.292	(0.913)	453020	120.012	4.8
61	trans-1,3-Dichloropropene	75	11.435	11.430	(0.925)	245343	133.095	5.3
62	1;1,2-Trichloroethane	97	11.593	11.587	(0.938)	100922	129.739	5.2
63	2-hexanone	43	11.711	11.705	(0.947)	300342	685.107	27
65	Tetrachloroethene	164	11.741	11.745	(0.950)	130976	100.559	4.0
66	Dibromochloromethane	129	11.918	11.912	(0.964)	144094	122.199	4.9
67	1,2-Dibromoethane	107	12.036	12.040	(0.974)	107101	125.753	5.0
69	Chlorobenzene	112	12.381	12.385	(1.002)	442861	120.782	4.8
70	Ethylbenzene	106	12.410	12.415	(1.004)	236262	117.726	4.7
72	m,p-Xylene	106	12.489	12.494	(1.010)	589888	234.578	9.4
73	o-Xylene	106	12.795	12.789	(1.035)	280469	120.621	4.8
74	Styrene	104	12.795	12.789	(1.035)	466354	121.771	4.9
75	Bromoform	173	12.982	12.976	(1.050)	66276	109.925	4.4
76	Isopropyl Benzene	105	13.031	13.026	(1.054)	781544	115.266	4.6
77	1,1,2,2-Tetrachloroethane	83	13.238	13.232	(0.942)	132509	137.977	5.5
90	1,3-Dichlorobenzene	146	14.016	14.011	(0.997)	314213	114.254	4.6
91	1,4-Dichlorobenzene	146	14.075	14.080	(1.001)	308808	113.986	4.6
93	1,2-Dichlorobenzene	146	14.391	14.385	(1.024)	251935	115.202	4.6
94	1,2-Dibromo-3-Chloropropane	75	15.002	15.006	(1.067)	18581	131.979	5.3
95	1,2,4-Trichlorobenzene	180	15.800	15.804	(1.124)	149912	102.381	4.1
M 99	1;2-Dichloroethene (total)	96				421497	257.989	10
M 100	Xylene (total)	106				870357	374.314	15

d. Matrix Spike Data

- Tabulated Results (Form I VOA)

- Reconstructed Ion Chromatogram and quantitation report

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MS171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.2	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	6.1	
75-00-3	Chloroethane	6.3	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	6.8	
75-15-0	Carbon disulfide	6.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.1	
67-64-1	Acetone	28	
79-20-9	Methyl acetate	7.1	
75-09-2	Methylene Chloride	5.6	
156-60-5	trans-1,2-Dichloroethene	5.8	
1634-04-4	Methyl-tert-butyl ether	6.0	
75-34-3	1,1-Dichloroethane	13	
156-59-2	cis-1,2-Dichloroethene	6.0	
78-93-3	2-butanone	30	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	8.8	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	6.2	
107-06-2	1,2-Dichloroethane	6.5	
79-01-6	Trichloroethene	5.5	
78-87-5	1,2-Dichloropropane	7.1	
75-27-4	Bromodichloromethane	6.3	
10061-01-5	cis-1,3-Dichloropropene	6.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.5	
10061-02-6	trans-1,3-Dichloropropene	6.2	
79-00-5	1,1,2-Trichloroethane	5.8	
127-18-4	Tetrachloroethene	4.2	
591-78-6	2-hexanone	28	
124-48-1	Dibromochloromethane	5.4	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MS171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

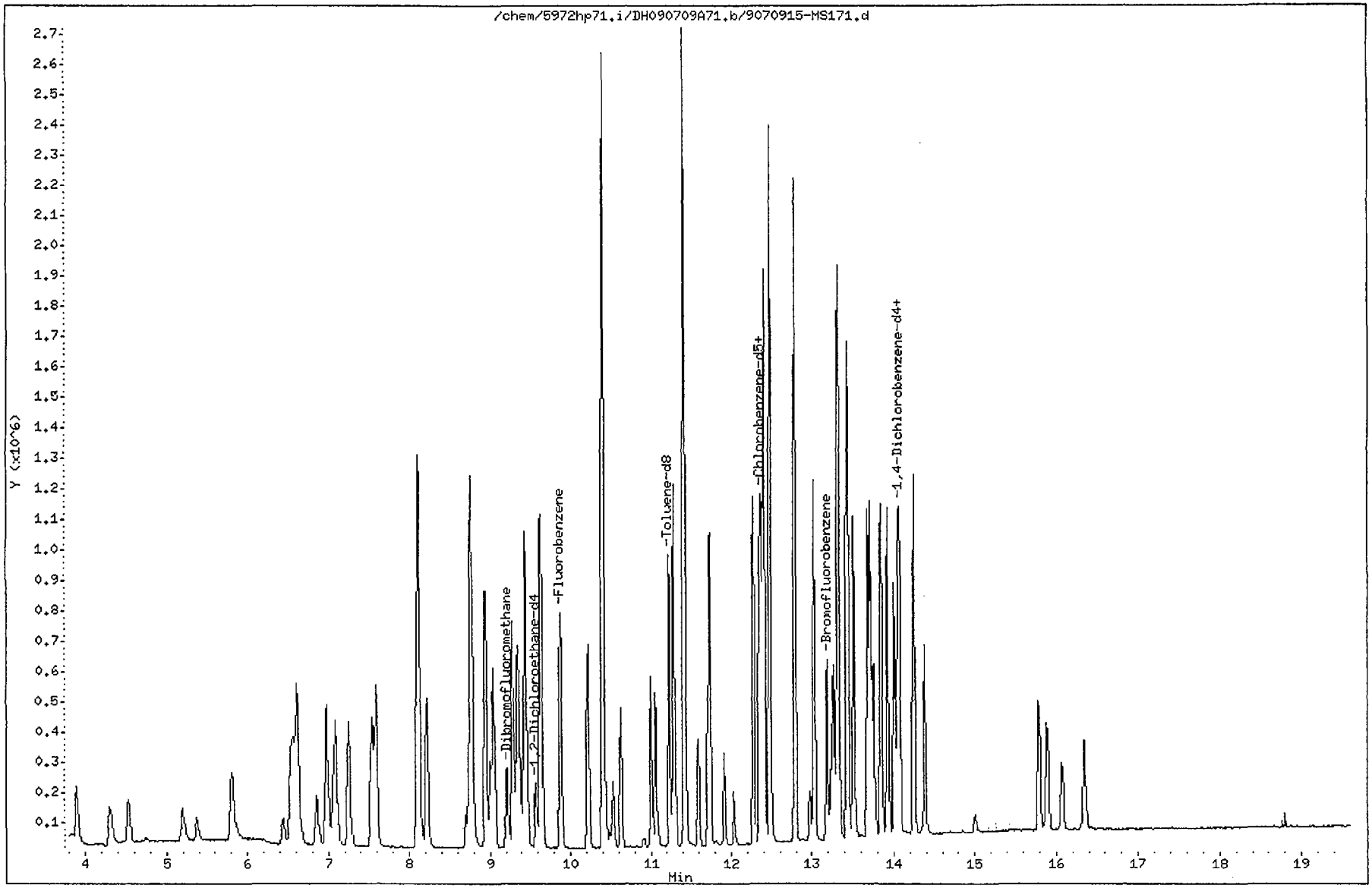
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.5	
108-90-7	Chlorobenzene	5.4	
100-41-4	Ethylbenzene	5.2	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.4	
100-42-5	Styrene	5.4	
75-25-2	Bromoform	4.6	
98-82-8	Isopropyl Benzene	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	6.2	
541-73-1	1,3-Dichlorobenzene	5.1	
106-46-7	1,4-Dichlorobenzene	5.0	
95-50-1	1,2-Dichlorobenzene	5.1	
96-12-8	1,2-Dibromo-3-Chloropropane	5.6	
120-82-1	1,2,4-Trichlorobenzene	4.2	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	17	
110-82-7	Cyclohexane	4.9	
108-87-2	Methylcyclohexane	4.9	

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MS171.d
Date : 09-JUL-2009 23:05
Client ID: YS07-GW05-0709MS
Sample Info: 9070915-MS1:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MS171.d
Report Date: 10-Jul-2009 18:28

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/9070915-MS171.d
Lab Smp Id: 9070915-MS1 Client Smp ID: YS07-GW05-0709MS
Inj Date : 09-JUL-2009 23:05
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070915-MS1:JAO
Misc Info : YS07-GW05-0709MS
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 14 QC Sample: MS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
* 1	Fluorobenzene	96	9.881	9.883	(1.000)	650415	125.000	
* 2	Chlorobenzene-d5	117	12.364	12.356	(1.000)	430067	125.000	
* 3	1,4-Dichlorobenzene-d4	152	14.059	14.060	(1.000)	192442	125.000	
$ 4	Dibromofluoromethane	113	9.221	9.213	(0.933)	176015	123.107	4.9
$ 5	1,2-Dichloroethane-d4	65	9.576	9.577	(0.969)	153117	137.683	5.5
$ 6	Toluene-d8	98	11.231	11.233	(0.908)	580537	125.228	5.0
$ 7	Bromofluorobenzene	95	13.192	13.183	(0.938)	217286	131.963	5.3
8	Dichlorodifluoromethane	85	3.891	3.893	(0.394)	258077	106.188	4.2
9	Chloromethane	50	4.305	4.306	(0.436)	255981	135.651	5.4
10	Vinyl Chloride	62	4.532	4.533	(0.459)	215670	153.609	6.1
11	Bromomethane	94	5.202	5.203	(0.526)	115026	151.824	6.1
12	Chloroethane	64	5.379	5.380	(0.544)	93325	157.720	6.3
13	Trichlorofluoromethane	101	5.812	5.814	(0.588)	344813	145.900	5.8
17	1,1-Dichloroethene	96	6.620	6.622	(0.670)	223913	171.028	6.8(R)
16	1,1,2-trichloro-1,2,2-trifluo	85	6.571	6.572	(0.665)	121165	127.142	5.1

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MS171.d
Report Date: 10-Jul-2009 18:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.630	6.632	(0.671)	103648	699.113	28
20	Carbon disulfide	76	6.985	6.986	(0.707)	914161	155.011	6.2
24	Methyl acetate	43	7.064	7.055	(0.715)	187403	177.637	7.1
25	Methylene Chloride	84	7.251	7.252	(0.734)	211690	141.166	5.6
27	Methyl-tert-butyl ether	73	7.556	7.548	(0.765)	338868	150.594	6.0
28	trans-1,2-Dichloroethene	96	7.596	7.597	(0.769)	215240	143.977	5.8
32	1,1-Dichloroethane	63	8.128	8.119	(0.823)	929012	332.936	13(R)
34	2-butanone	43	8.709	8.701	(0.881)	177244	740.425	30
36	cis-1,2-Dichloroethene	96	8.768	8.760	(0.887)	226156	150.983	6.0
40	Chloroform	83	9.054	9.055	(0.916)	469290	167.487	6.7
42	1,1,1-Trichloroethane	97	9.290	9.292	(0.940)	528152	220.193	8.8(R)
43	Cyclohexane	84	9.359	9.351	(0.947)	262038	121.292	4.9
46	Carbon Tetrachloride	117	9.458	9.459	(0.957)	276959	131.126	5.2
47	Benzene	78	9.635	9.636	(0.975)	868050	155.375	6.2(R)
48	1,2-Dichloroethane	62	9.655	9.646	(0.977)	227121	162.490	6.5
49	Trichloroethene	130	10.226	10.218	(1.035)	199330	137.878	5.5
50	Methylcyclohexane	83	10.413	10.405	(1.054)	289737	121.282	4.9
51	1,2-Dichloropropane	63	10.423	10.425	(1.055)	222254	177.135	7.1(R)
55	Bromodichloromethane	83	10.630	10.632	(1.076)	290693	156.699	6.3(R)
57	cis-1,3-Dichloropropene	75	11.004	11.006	(1.114)	312293	156.453	6.3
58	4-Methyl-2-pentanone	43	11.064	11.065	(0.895)	414990	712.503	29
59	Toluene	92	11.290	11.292	(0.913)	459766	136.280	5.5
61	trans-1,3-Dichloropropene	75	11.438	11.430	(0.925)	254883	154.710	6.2
62	1,1,2-Trichloroethane	97	11.596	11.587	(0.938)	101140	145.479	5.8
63	2-hexanone	43	11.714	11.705	(0.947)	275449	703.029	28
65	Tetrachloroethene	164	11.743	11.745	(0.950)	123416	106.021	4.2
66	Dibromochloromethane	129	11.921	11.912	(0.964)	142871	135.567	5.4
67	1,2-Dibromoethane	107	12.039	12.040	(0.974)	105604	138.738	5.5
69	Chlorobenzene	112	12.384	12.385	(1.002)	441424	134.703	5.4
70	Ethylbenzene	106	12.413	12.415	(1.004)	235316	131.195	5.2
72	m,p-Xylene	106	12.492	12.494	(1.010)	592481	263.622	11
73	o-Xylene	106	12.788	12.789	(1.034)	280397	134.928	5.4
74	Styrene	104	12.798	12.789	(1.035)	462654	135.168	5.4
75	Bromoform	173	12.975	12.976	(1.049)	61851	114.783	4.6
76	Isopropyl Benzene	105	13.034	13.026	(1.054)	753677	124.372	5.0
77	1,1,2,2-Tetrachloroethane	83	13.231	13.232	(0.941)	131241	153.935	6.2
90	1,3-Dichlorobenzene	146	14.009	14.011	(0.996)	310140	127.031	5.1
91	1,4-Dichlorobenzene	146	14.078	14.080	(1.001)	300653	125.007	5.0
93	1,2-Dichlorobenzene	146	14.384	14.385	(1.023)	247051	127.251	5.1
94	1,2-Dibromo-3-Chloropropane	75	15.004	15.006	(1.067)	17635	141.100	5.6
95	1,2,4-Trichlorobenzene	180	15.802	15.804	(1.124)	136969	105.369	4.2
M 99	1,2-Dichloroethene (total)	96				441397	294.968	12
M 100	Xylene (total)	106				872878	420.031	17

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MS171.d
Report Date: 10-Jul-2009 18:28

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

e. Matrix Spike Duplicate Data

- Tabulated Results (Form I VOA)

- Reconstructed Ion Chromatogram and quantitation report

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MSD171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.3	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	6.1	
74-83-9	Bromomethane	6.3	
75-00-3	Chloroethane	6.1	
75-69-4	Trichlorofluoromethane	5.8	
75-35-4	1,1-Dichloroethene	7.3	
75-15-0	Carbon disulfide	6.2	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.3	
67-64-1	Acetone	29	
79-20-9	Methyl acetate	6.7	
75-09-2	Methylene Chloride	5.7	
156-60-5	trans-1,2-Dichloroethene	5.9	
1634-04-4	Methyl-tert-butyl ether	6.2	
75-34-3	1,1-Dichloroethane	13	
156-59-2	cis-1,2-Dichloroethene	6.0	
78-93-3	2-butanone	30	
67-66-3	Chloroform	6.7	
71-55-6	1,1,1-Trichloroethane	8.9	
56-23-5	Carbon Tetrachloride	5.5	
71-43-2	Benzene	6.3	
107-06-2	1,2-Dichloroethane	6.5	
79-01-6	Trichloroethene	5.7	
78-87-5	1,2-Dichloropropane	7.1	
75-27-4	Bromodichloromethane	6.3	
10061-01-5	cis-1,3-Dichloropropene	6.3	
108-10-1	4-Methyl-2-pentanone	29	
108-88-3	Toluene	5.7	
10061-02-6	trans-1,3-Dichloropropene	6.3	
79-00-5	1,1,2-Trichloroethane	5.8	
127-18-4	Tetrachloroethene	4.6	
591-78-6	2-hexanone	29	
124-48-1	Dibromochloromethane	5.6	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS07-GW0
5-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907002

Matrix: (soil/water) WATER Lab Sample ID: 9070915-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9070915-MSD171

Level: (low/med) LOW Date Received: 07/08/09

% Moisture: not dec. _____ Date Analyzed: 07/09/09

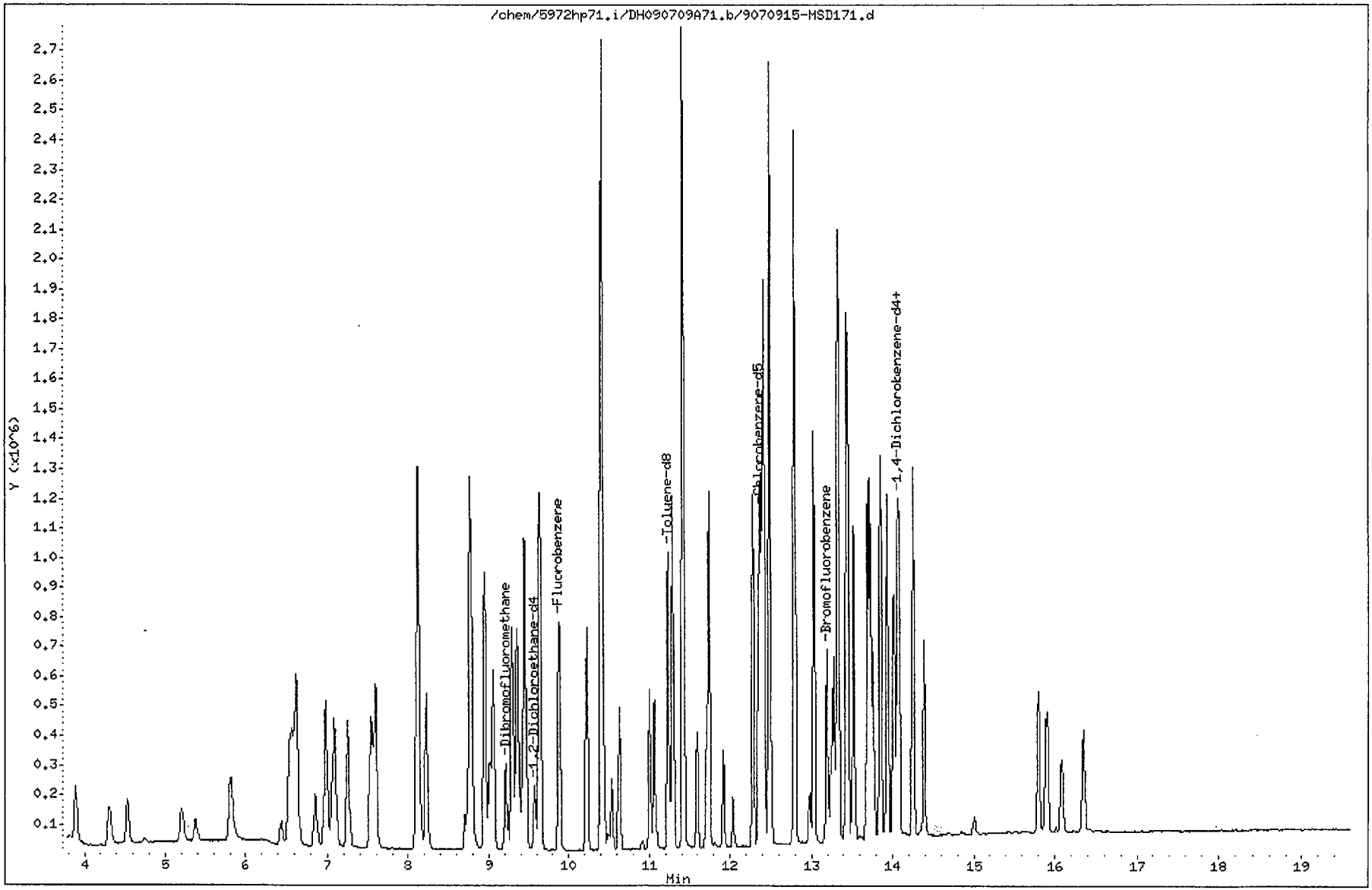
GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.6	
108-90-7	Chlorobenzene	5.7	
100-41-4	Ethylbenzene	5.5	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.7	
100-42-5	Styrene	5.6	
75-25-2	Bromoform	4.8	
98-82-8	Isopropyl Benzene	5.3	
79-34-5	1,1,2,2-Tetrachloroethane	6.3	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.3	
95-50-1	1,2-Dichlorobenzene	5.3	
96-12-8	1,2-Dibromo-3-Chloropropane	6.0	
120-82-1	1,2,4-Trichlorobenzene	4.5	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	18	
110-82-7	Cyclohexane	5.2	
108-87-2	Methylcyclohexane	5.3	

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MSD171.d
Date : 09-JUL-2009 23:33
Client ID: YS07-GW05-0709MSD
Sample Info: 9070915-MSD1:JAO
Purge Volume: 25.0
Column phase: SPB-624

Instrument: 5972hp71.i
Operator: JAO
Column diameter: 0.32



Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MSD171.d
Report Date: 10-Jul-2009 18:28

CompuChem

SW846 UPDATE III METHOD 8260B QUANT & RATIO REPORT

Data file : /chem/5972hp71.i/DH090709A71.b/9070915-MSD171.d
Lab Smp Id: 9070915-MSD1 Client Smp ID: YS07-GW05-0709MSD
Inj Date : 09-JUL-2009 23:33
Operator : JAO Inst ID: 5972hp71.i
Smp Info : 9070915-MSD1:JAO
Misc Info : YS07-GW05-0709MSD
Comment :
Method : /chem/5972hp71.i/DH090709A71.b/W8260-B-25MLv11.m
Meth Date : 10-Jul-2009 18:22 walker Quant Type: ISTD
Cal Date : 01-JUL-2009 18:21 Cal File: 9G01002-CAL671.d
Als bottle: 15 QC Sample: MSD
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: TCL4DOD.sub
Target Version: 3.50
Processing Host: dante

Concentration Formula: Amt * DF * 1/(Vo) * CpndVariable

Name	Value	Description
DF	1.00000	Dilution Factor
Vo	25.00000	volume of water
DF	1.00000	dilution factor

Cpnd Variable Local Compound Variable

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	FINAL (ug/L)
*	1 Fluorobenzene	96	9.887	9.883	(1.000)	674350	125.000	
*	2 Chlorobenzene-d5	117	12.360	12.356	(1.000)	441192	125.000	
*	3 1,4-Dichlorobenzene-d4	152	14.054	14.060	(1.000)	197348	125.000	
$	4 Dibromofluoromethane	113	9.217	9.213	(0.932)	182757	123.292	4.9
$	5 1,2-Dichloroethane-d4	65	9.581	9.577	(0.969)	157626	136.693	5.5
$	6 Toluene-d8	98	11.237	11.233	(0.909)	600941	126.628	5.1
$	7 Bromofluorobenzene	95	13.187	13.183	(0.938)	223191	132.212	5.3
	8 Dichlorodifluoromethane	85	3.897	3.893	(0.394)	269158	106.817	4.3
	9 Chloromethane	50	4.301	4.306	(0.435)	263449	134.653	5.4
	10 Vinyl Chloride	62	4.527	4.533	(0.458)	222412	152.788	6.1
	11 Bromomethane	94	5.197	5.203	(0.526)	124427	158.027	6.3
	12 Chloroethane	64	5.375	5.380	(0.544)	93239	151.983	6.1
	13 Trichlorofluoromethane	101	5.818	5.814	(0.588)	352681	143.932	5.8
	17 1,1-Dichloroethene	96	6.616	6.622	(0.669)	249355	183.701	7.3(R)
	16 1,1,2-trichloro-1,2,2-trifluo	85	6.577	6.572	(0.665)	131170	132.755	5.3

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MSD171.d
Report Date: 10-Jul-2009 18:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng)	CONCENTRATIONS FINAL (ug/L)
18	Acetone	43	6.626	6.632	(0.670)	110030	715.823	29
20	Carbon disulfide	76	6.981	6.986	(0.706)	940661	153.843	6.2
24	Methyl acetate	43	7.059	7.055	(0.714)	182696	167.029	6.7
25	Methylene Chloride	84	7.256	7.252	(0.734)	221434	142.566	5.7
27	Methyl-tert-butyl ether	73	7.552	7.548	(0.764)	360660	154.590	6.2
28	trans-1,2-Dichloroethene	96	7.601	7.597	(0.769)	228239	147.254	5.9
32	1,1-Dichloroethane	63	8.123	8.119	(0.822)	954014	329.761	13(R)
34	2-butanone	43	8.705	8.701	(0.880)	185589	747.767	30
36	cis-1,2-Dichloroethene	96	8.764	8.760	(0.886)	233912	150.618	6.0
40	Chloroform	83	9.059	9.055	(0.916)	485024	166.958	6.7
42	1,1,1-Trichloroethane	97	9.296	9.292	(0.940)	552217	222.054	8.9(R)
43	Cyclohexane	84	9.355	9.351	(0.946)	292089	130.403	5.2
46	Carbon Tetrachloride	117	9.453	9.459	(0.956)	299628	136.823	5.5
47	Benzene	78	9.641	9.636	(0.975)	912222	157.487	6.3(R)
48	1,2-Dichloroethane	62	9.650	9.646	(0.976)	234236	161.632	6.5
49	Trichloroethene	130	10.222	10.218	(1.034)	212889	142.030	5.7
50	Methylcyclohexane	83	10.409	10.405	(1.053)	330305	133.356	5.3
51	1,2-Dichloropropane	63	10.429	10.425	(1.055)	230509	177.194	7.1(R)
55	Bromodichloromethane	83	10.636	10.632	(1.076)	300946	156.468	6.3(R)
57	cis-1,3-Dichloropropene	75	11.010	11.006	(1.114)	323756	156.439	6.3
58	4-Methyl-2-pentanone	43	11.069	11.065	(0.896)	427376	715.265	29
59	Toluene	92	11.286	11.292	(0.913)	492661	142.348	5.7
61	trans-1,3-Dichloropropene	75	11.434	11.430	(0.925)	266039	157.410	6.3
62	1,1,2-Trichloroethane	97	11.591	11.587	(0.938)	104041	145.877	5.8
63	2-hexanone	43	11.710	11.705	(0.947)	288657	718.162	29
65	Tetrachloroethene	164	11.739	11.745	(0.950)	137146	114.845	4.6
66	Dibromochloromethane	129	11.916	11.912	(0.964)	152321	140.890	5.6
67	1,2-Dibromoethane	107	12.035	12.040	(0.974)	109652	140.423	5.6
69	Chlorobenzene	112	12.379	12.385	(1.002)	476087	141.617	5.7
70	Ethylbenzene	106	12.409	12.415	(1.004)	252595	137.278	5.5
72	m,p-Xylene	106	12.488	12.494	(1.010)	634149	275.047	11
73	o-Xylene	106	12.793	12.789	(1.035)	303396	142.314	5.7
74	Styrene	104	12.793	12.789	(1.035)	495540	141.125	5.6
75	Bromoform	173	12.980	12.976	(1.050)	65834	119.094	4.8
76	Isopropyl Benzene	105	13.030	13.026	(1.054)	829078	133.364	5.3
77	1,1,2,2-Tetrachloroethane	83	13.237	13.232	(0.942)	137385	157.135	6.3
90	1,3-Dichlorobenzene	146	14.015	14.011	(0.997)	329325	131.535	5.3
91	1,4-Dichlorobenzene	146	14.074	14.080	(1.001)	328647	133.249	5.3
93	1,2-Dichlorobenzene	146	14.389	14.385	(1.024)	265294	133.251	5.3
94	1,2-Dibromo-3-Chloropropane	75	15.010	15.006	(1.068)	19331	150.827	6.0
95	1,2,4-Trichlorobenzene	180	15.798	15.804	(1.124)	150879	113.184	4.5
M 99	1,2-Dichloroethene (total)	96				462151	297.875	12
M 100	Xylene (total)	106				937546	439.773	18

Data File: /chem/5972hp71.i/DH090709A71.b/9070915-MSD171.d
Report Date: 10-Jul-2009 18:28

QC Flag Legend

R - Spike/Surrogate failed recovery limits.

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 13, 2009
SDG # 0907174, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # 0907174. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles, 6010B & 7471A for metals and the Lloyd Kahn method for TOC. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. Please note that samples YS03-SD03-0709 and YS03-SD04-0709 were incorrectly noted throughout the laboratory data package as YS01-SD03-0709 and YS01-SD04-0709, respectively. These IDs were corrected on the Form 1s in this validation report but corrections were not requested from the laboratory for the data package. The QC tracking memo is included in this validation report and contains a cross reference of the sample IDs and alias sample IDs. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	VOA	Metals	TOC
YS03-SD03-0709	0907174-15	soil	X	X	X
YS03-SD04-0709	0907174-16	soil	X	X	X
YS01-SD30-0709	0907174-14	soil	X	X	X
YS01-SD31-0709	0907174-12	soil	X	X	X
YS01-SD31P-0709	0907174-13	soil	X	X	
YS01-SD32-0709	0907174-04	soil	X	X	X
YS01-SD33-0709	0907174-03	soil	X	X	X
YS03-SD05-0709	0907174-10	soil	X	X	X
YS03-SD05P-0709	0907174-11	soil	X	X	
YS03-SD06-0709	0907174-09	soil	X	X	X
YS03-SD07-0709	0907174-08	soil	X	X	X
YS03-SD08-0709	0907174-06	soil	X	X	X
YS03-SD09-0709	0907174-07	soil	X	X	X
YS03-SD10-0709	0907174-05	soil	X	X	X
YS03-SD11-0709	0907174-02	soil	X	X	X
YS03-SD12-0709	0907174-01	soil	X	X	X
YS03-SD10-0709 MS	0907174-05MS	soil	X	X	X
YS03-SD10-0709 MSD	0907174-05MSD	soil	X	X	X

The following quality control samples were provided with this SDG: sample YS01-SD31P-0709-field duplicate of sample YS01-SD31-0709; and sample YS03-SD05P-0709 -field duplicate of sample YS03-SD05-0709.

The samples were evaluated based on the following criteria:

• Data Completeness	*
• Sample Condition	
• Technical Holding Times	*
• GC/MS Tuning	*
• GC Performance	*
• Initial/Continuing Calibrations	*
• CRI Standards	*
• Interference Check Sample	*
• Blanks	
• Internal Standards	*
• Surrogates	*
• Laboratory Control Samples	*
• Matrix Spike Recoveries	
• Matrix Duplicate RPDs	*
• Post Digestion Spike Recoveries	*
• Serial Dilutions	
• Field Duplicates	
• Identification/Quantitation	
• Reporting Limits	*
• Tentatively Identified Compounds	NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No analytical data required rejection due to quality control issues.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Several samples were qualified as biased low due to a high sample receipt temperature.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Metals

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The associated MS/MSD pair exhibited low recoveries for several analytes that required qualification as biased low L/UL in the field samples. Two of the non-compliant analytes exhibited recoveries below 30% but there were no non-detect results reported for those analytes so none of the results required rejection.

The associated serial dilution analysis exhibited a non-compliant %D for one analyte. This analyte was qualified in all samples.

One of the field duplicate pairs exhibited non-compliant RPDs for aluminum and zinc. These analytes required qualification as estimated in the field duplicate pair.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

TOC

No qualifications to the data were required.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Sample Condition

VOA

According to Region III guidelines aqueous samples received above 4°C+/-2°C are to be analyzed within 7 days from sample collection (since holding time criteria have not been established for non-aqueous samples, the same criteria have been applied); therefore samples YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709 and YS01-SD32-0709 were qualified as biased low L/UL, qualifier code: OT.

Technical Holding Times

According to chain of custody records, sampling was performed on 7/20-24/09 and samples were received at the laboratory 7/22-25/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKLR	2-butanone	3.6J ug/Kg	2.5 ug/Kg	36 ug/Kg
	1,2,4-trichlorobenzene	2.2J	2.5	11
YS01-TB01-072309	acetone	1.9J ug/L	2.5 ug/L	19 ug/L
YS03-TB01-072409	acetone	1.6J	2.5	16
YS01-FB01-072309	acetone	4.5	2.5	45
YS01-EB01-072309	acetone	4.1	2.5	41
YS03-EB01-072109	acetone	4.7	2.5	47
YS03-EB01-072409	acetone	5.2	2.5	52
YS01-EB02-072309	acetone	4.8	2.5	48
YS03-EB02-072209	acetone	4.7	2.5	47

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all samples	acetone	B	BL
YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709, YS03-SD09-0709, YS03-SD07-0709, YS03-SD05-0709, YS01-SD31-0709, YS01-SD31P-0709, YS03-SD03-0709, YS03-SD04-0709	2-butanone	B	BL
YS03-SD12-0709	1,2,4-trichlorobenzene	B	BL

Metals

Blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBS	copper	-0.174B mg/Kg	≤ 10X MDL (0.9 mg/Kg)	L/UL	MBL
	cadmium	-0.070B mg/Kg	≤ 10X MDL (0.3 mg/Kg)	L/UL	MBL
	silver	-0.040B mg/Kg	≤ 10X MDL (0.3 mg/Kg)	L/UL	MBL
CCB	beryllium	1.0 ug/L	0.50 mg/Kg	B	MBL
YS01-FB02-072309	sodium	860BE ug/L	430 mg/kg	B	FBL
	selenium	3.6B ug/L	1.80 mg/Kg	B	FBL

Associated samples and required qualifications are noted in the following table.

Sample ID	analyte	Q Flag	Q Code
YS01-SD30-0709, YS01-SD31P-0709	copper	L	MBL
all samples	cadmium	L/UL	MBL
all samples	silver	L/UL	MBL
YS03-SD04-0709, YS01-SD30-0709, YS01-SD31-0709, YS01-SD31P-0709, YS03-SD03-0709, YS03-SD05-0709, YS03-SD05P-0709, YS03-SD09-0709, YS03-SD08-0709	beryllium	B	MBL
YS01-SD30-0709, YS01-SD31P-0709	sodium	B	FBL
YS03-SD04-0709, YS01-SD33-0709, YS01-SD32-0709, YS03-SD03-0709, YS03-SD05-0709, YS03-SD05P-0709, YS03-SD09-0709, YS03-SD11-0709, YS03-SD06-0709, YS03-SD08-0709, YS03-SD10-0709, YS03-SD12-0709, YS03-SD07-0709	selenium	B	FBL

Matrix Spike Recoveries

Metals

The matrix spike analysis of sample YS03-SD10-0709 exhibited non-compliant %Rs (<80% or >120%) for six analytes. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS03-SD10-0709	antimony arsenic chromium vanadium zinc	all samples	43.1/40.6 61.7/27.1 43.4/44.9 38.1/38.0 75.2/73.3	L/UL	MSL
	selenium manganese		21.1/-32.9 -50.5/-49.6	L/R*	MSL

*Non-detect results for Se & Mn required rejection due to MS recoveries below 30%. However, there were no non-detect results reported for either of the analytes. Please note that most of the Se results were flagged as B due to field blank contamination.

Serial Dilutions

Metals

The serial dilution analysis of sample YS03-SD10-0709 exhibited a non-compliant %Ds (>10%) for one analyte. Specific action is noted in the following table.

SD	Analytes	Samples Affected	%D	Q Flag	Q Code
YS03-SD10-0709	lead	all samples	11.7	J/UJ	SD

Field Duplicate

Metals

One of the field duplicate pairs submitted in this SDG exhibited non-compliant RPDs for two analytes. Specific action is noted in the following table.

FD Pair	Analytes	RPD	Q Flag	Q Code
YS01-SD31-0709, YS01-SD31P-0709	aluminum	40%	J	FD
	zinc*	34%		

*Zn was flagged L/UL due to low matrix spike recoveries with the MSL qualifier code.

Identification/Quantitation

Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Qual code
YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709, YS01-SD32-0709	all results	+/-	L/UL	OT
all samples	acetone	+	B	BL
YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709, YS03-SD09-0709, YS03-SD07-0709, YS03-SD05-0709, YS01-SD31-0709, YS01-SD31P-0709, YS03-SD03-0709, YS03-SD04-0709	2-butanone	+	B	BL
YS03-SD12-0709	1,2,4-trichlorobenzene	+	B	BL

Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS01-SD30-0709, YS01-SD31P-0709	copper	+/- up to 10X MDL	L/UL	MBL
all samples	cadmium	+/- up to 10X MDL	L/UL	MBL
all samples	silver	+/- up to 10X MDL	L/UL	MBL
YS03-SD04-0709, YS01-SD30-0709, YS01-SD31-0709, YS01-SD31P-0709, YS03-SD03-0709, YS03-SD05-0709, YS03-SD05P-0709, YS03-SD09-0709, YS03-SD08-0709	beryllium	+ up to action limit	B	MBL
YS01-SD30-0709, YS01-SD31P-0709	sodium	+ up to action limit	B	FBL
YS03-SD04-0709, YS01-SD33-0709, YS01-SD32-0709, YS03-SD03-0709, YS03-SD05-0709, YS03-SD05P-0709, YS03-SD09-0709, YS03-SD11-0709, YS03-SD06-0709, YS03-SD08-0709, YS03-SD10-0709, YS03-SD12-0709, YS03-SD07-0709	selenium	+ up to action limit	B	FBL
all samples	antimony arsenic selenium chromium manganese vanadium zinc	+/-	L/UL	MSL
all samples	lead	+/-	J/UJ	SD
YS03-SD05-0709, YS03-SD05P-0709	aluminum zinc**	+	J	FD
all samples	all analytes	+B	J	

*selenium was flagged due to MS recoveries <30% with MSL qualifier code; ** zinc was flagged L/UL due to MS recoveries <80% with an MSL qualifier code

TOC

Sample ID	Parameter	Results	Q Flag	Q code
No qualifications were required				

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD03-0709
3

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-15

Sample wt/vol: 3.10(g/mL) G Lab File ID: 0907174-1559

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. 76 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
75-71-8	Dichlorodifluoromethane	34	U	
74-87-3	Chloromethane	34	U	
75-01-4	Vinyl Chloride	34	U	
74-83-9	Bromomethane	34	U	
75-00-3	Chloroethane	34	U	
75-69-4	Trichlorofluoromethane	34	U	
75-35-4	1,1-Dichloroethene	34	U	
75-15-0	Carbon disulfide	11	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	34	U	
67-64-1	Acetone	510		B,BL
75-09-2	Methylene Chloride	34	U	
156-60-5	trans-1,2-Dichloroethene	34	U	
1634-04-4	Methyl-tert-butyl ether	34	U	
75-34-3	1,1-Dichloroethane	34	U	
156-59-2	cis-1,2-Dichloroethene	34	U	
78-93-3	2-butanone	61	J	B,BL
67-66-3	Chloroform	34	U	
71-55-6	1,1,1-Trichloroethane	34	U	
56-23-5	Carbon Tetrachloride	34	U	
71-43-2	Benzene	34	U	
107-06-2	1,2-Dichloroethane	34	U	
79-01-6	Trichloroethene	34	U	
78-87-5	1,2-Dichloropropane	34	U	
75-27-4	Bromodichloromethane	34	U	
10061-01-5	cis-1,3-Dichloropropene	34	U	
108-10-1	4-Methyl-2-pentanone	84	U	
108-88-3	Toluene	34	U	
10061-02-6	trans-1,3-Dichloropropene	34	U	
79-00-5	1,1,2-Trichloroethane	34	U	
127-18-4	Tetrachloroethene	34	U	
591-78-6	2-hexanone	84	U	
124-48-1	Dibromochloromethane	34	U	
106-93-4	1,2-Dibromoethane	34	U	

FORM I VOA

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD03-0709
3

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-15

Sample wt/vol: 3.10(g/mL) G Lab File ID: 0907174-1559

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. 76 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	34	U
100-41-4	Ethylbenzene	34	U
100-42-5	Styrene	34	U
75-25-2	Bromoform	34	U
98-82-8	Isopropyl Benzene	34	U
79-34-5	1,1,2,2-Tetrachloroethane	34	U
541-73-1	1,3-Dichlorobenzene	34	U
106-46-7	1,4-Dichlorobenzene	34	U
95-50-1	1,2-Dichlorobenzene	34	U
96-12-8	1,2-Dibromo-3-Chloropropane	34	U
120-82-1	1,2,4-Trichlorobenzene	34	U
1330-20-7	Xylene (total)	34	U
79-20-9	Methyl acetate	34	U
110-82-7	Cyclohexane	34	U
108-87-2	Methylcyclohexane	34	U
108-38-3	m,p-Xylene (part of total)	67	U
95-47-6	o-Xylene (part of total)	34	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD04-0709
3

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-16

Sample wt/vol: 3.91(g/mL) G Lab File ID: 0907174-1659

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. 32 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	9.4	U
74-87-3	Chloromethane	9.4	U
75-01-4	Vinyl Chloride	9.4	U
74-83-9	Bromomethane	9.4	U
75-00-3	Chloroethane	9.4	U
75-69-4	Trichlorofluoromethane	9.4	U
75-35-4	1,1-Dichloroethene	9.4	U
75-15-0	Carbon disulfide	3.0	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	9.4	U
67-64-1	Acetone	95	B,BL
75-09-2	Methylene Chloride	9.4	U
156-60-5	trans-1,2-Dichloroethene	9.4	U
1634-04-4	Methyl-tert-butyl ether	9.4	U
75-34-3	1,1-Dichloroethane	9.4	U
156-59-2	cis-1,2-Dichloroethene	9.4	U
78-93-3	2-butanone	14	J B,BL
67-66-3	Chloroform	9.4	U
71-55-6	1,1,1-Trichloroethane	9.4	U
56-23-5	Carbon Tetrachloride	9.4	U
71-43-2	Benzene	9.4	U
107-06-2	1,2-Dichloroethane	9.4	U
79-01-6	Trichloroethene	9.4	U
78-87-5	1,2-Dichloropropane	9.4	U
75-27-4	Bromodichloromethane	9.4	U
10061-01-5	cis-1,3-Dichloropropene	9.4	U
108-10-1	4-Methyl-2-pentanone	24	U
108-88-3	Toluene	9.4	U
10061-02-6	trans-1,3-Dichloropropene	9.4	U
79-00-5	1,1,2-Trichloroethane	9.4	U
127-18-4	Tetrachloroethene	9.4	U
591-78-6	2-hexanone	24	U
124-48-1	Dibromochloromethane	9.4	U
106-93-4	1,2-Dibromoethane	9.4	U

FORM I VOA

10/08/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD04-0709
3

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-16

Sample wt/vol: 3.91(g/mL) G Lab File ID: 0907174-1659

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. 32 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	9.4	U
100-41-4	Ethylbenzene	9.4	U
100-42-5	Styrene	9.4	U
75-25-2	Bromoform	9.4	U
98-82-8	Isopropyl Benzene	9.4	U
79-34-5	1,1,2,2-Tetrachloroethane	9.4	U
541-73-1	1,3-Dichlorobenzene	9.4	U
106-46-7	1,4-Dichlorobenzene	9.4	U
95-50-1	1,2-Dichlorobenzene	9.4	U
96-12-8	1,2-Dibromo-3-Chloropropane	9.4	U
120-82-1	1,2,4-Trichlorobenzene	9.4	U
1330-20-7	Xylene (total)	9.4	U
79-20-9	Methyl acetate	9.4	U
110-82-7	Cyclohexane	9.4	U
108-87-2	Methylcyclohexane	9.4	U
108-38-3	m,p-Xylene (part of total)	19	U
95-47-6	o-Xylene (part of total)	9.4	U

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD30-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-14

Sample wt/vol: 4.89(g/mL) G Lab File ID: 0907174-1459

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 19 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.3	U
74-87-3	Chloromethane	6.3	U
75-01-4	Vinyl Chloride	6.3	U
74-83-9	Bromomethane	6.3	U
75-00-3	Chloroethane	6.3	U
75-69-4	Trichlorofluoromethane	6.3	U
75-35-4	1,1-Dichloroethene	6.3	U
75-15-0	Carbon disulfide	4.4	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.3	U
67-64-1	Acetone	57	B,PR
75-09-2	Methylene Chloride	6.3	U
156-60-5	trans-1,2-Dichloroethene	6.3	U
1634-04-4	Methyl-tert-butyl ether	6.3	U
75-34-3	1,1-Dichloroethane	6.3	U
156-59-2	cis-1,2-Dichloroethene	6.3	U
78-93-3	2-butanone	6.6	J
67-66-3	Chloroform	6.3	U
71-55-6	1,1,1-Trichloroethane	6.3	U
56-23-5	Carbon Tetrachloride	6.3	U
71-43-2	Benzene	6.3	U
107-06-2	1,2-Dichloroethane	6.3	U
79-01-6	Trichloroethene	6.3	U
78-87-5	1,2-Dichloropropane	6.3	U
75-27-4	Bromodichloromethane	6.3	U
10061-01-5	cis-1,3-Dichloropropene	6.3	U
108-10-1	4-Methyl-2-pentanone	16	U
108-88-3	Toluene	6.3	U
10061-02-6	trans-1,3-Dichloropropene	6.3	U
79-00-5	1,1,2-Trichloroethane	6.3	U
127-18-4	Tetrachloroethene	6.3	U
591-78-6	2-hexanone	16	U
124-48-1	Dibromochloromethane	6.3	U
106-93-4	1,2-Dibromoethane	6.3	U

FORM I VOA

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD30-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-14

Sample wt/vol: 4.89(g/mL) G Lab File ID: 0907174-1459

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 19 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	6.3	U
100-41-4	Ethylbenzene	6.3	U
100-42-5	Styrene	6.3	U
75-25-2	Bromoform	6.3	U
98-82-8	Isopropyl Benzene	6.3	U
79-34-5	1,1,2,2-Tetrachloroethane	6.3	U
541-73-1	1,3-Dichlorobenzene	6.3	U
106-46-7	1,4-Dichlorobenzene	6.3	U
95-50-1	1,2-Dichlorobenzene	6.3	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.3	U
120-82-1	1,2,4-Trichlorobenzene	6.3	U
1330-20-7	Xylene (total)	6.3	U
79-20-9	Methyl acetate	6.3	U
110-82-7	Cyclohexane	6.3	U
108-87-2	Methylcyclohexane	6.3	U
108-38-3	m,p-Xylene (part of total)	13	U
95-47-6	o-Xylene (part of total)	6.3	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD31-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-12

Sample wt/vol: 4.92(g/mL) G Lab File ID: 0907174-1259

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 24 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
75-71-8	Dichlorodifluoromethane	6.7	U	
74-87-3	Chloromethane	6.7	U	
75-01-4	Vinyl Chloride	6.7	U	
74-83-9	Bromomethane	6.7	U	
75-00-3	Chloroethane	6.7	U	
75-69-4	Trichlorofluoromethane	6.7	U	
75-35-4	1,1-Dichloroethene	6.7	U	
75-15-0	Carbon disulfide	13		
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.7	U	
67-64-1	Acetone	67		B, BL
75-09-2	Methylene Chloride	6.7	U	
156-60-5	trans-1,2-Dichloroethene	6.7	U	
1634-04-4	Methyl-tert-butyl ether	6.7	U	
75-34-3	1,1-Dichloroethane	6.7	U	
156-59-2	cis-1,2-Dichloroethene	6.7	U	
78-93-3	2-butanone	13		B, BL
67-66-3	Chloroform	6.7	U	
71-55-6	1,1,1-Trichloroethane	6.7	U	
56-23-5	Carbon Tetrachloride	6.7	U	
71-43-2	Benzene	6.7	U	
107-06-2	1,2-Dichloroethane	6.7	U	
79-01-6	Trichloroethene	6.7	U	
78-87-5	1,2-Dichloropropane	6.7	U	
75-27-4	Bromodichloromethane	6.7	U	
10061-01-5	cis-1,3-Dichloropropene	6.7	U	
108-10-1	4-Methyl-2-pentanone	17	U	
108-88-3	Toluene	6.7	U	
10061-02-6	trans-1,3-Dichloropropene	6.7	U	
79-00-5	1,1,2-Trichloroethane	6.7	U	
127-18-4	Tetrachloroethene	6.7	U	
591-78-6	2-hexanone	17	U	
124-48-1	Dibromochloromethane	6.7	U	
106-93-4	1,2-Dibromoethane	6.7	U	

FORM I VOA

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD31-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-12

Sample wt/vol: 4.92(g/mL) G Lab File ID: 0907174-1259

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 24 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	6.7	U
100-41-4	Ethylbenzene	6.7	U
100-42-5	Styrene	6.7	U
75-25-2	Bromoform	6.7	U
98-82-8	Isopropyl Benzene	6.7	U
79-34-5	1,1,2,2-Tetrachloroethane	6.7	U
541-73-1	1,3-Dichlorobenzene	6.7	U
106-46-7	1,4-Dichlorobenzene	6.7	U
95-50-1	1,2-Dichlorobenzene	6.7	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.7	U
120-82-1	1,2,4-Trichlorobenzene	6.7	U
1330-20-7	Xylene (total)	6.7	U
79-20-9	Methyl acetate	6.7	U
110-82-7	Cyclohexane	6.7	U
108-87-2	Methylcyclohexane	6.7	U
108-38-3	m,p-Xylene (part of total)	13	U
95-47-6	o-Xylene (part of total)	6.7	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD31P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-13

Sample wt/vol: 4.78(g/mL) G Lab File ID: 0907174-1359

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 25 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	7.0	U
74-87-3	Chloromethane	7.0	U
75-01-4	Vinyl Chloride	7.0	U
74-83-9	Bromomethane	7.0	U
75-00-3	Chloroethane	7.0	U
75-69-4	Trichlorofluoromethane	7.0	U
75-35-4	1,1-Dichloroethene	7.0	U
75-15-0	Carbon disulfide	13	
76-13-1	1,1,2-trichloro-1,2,2-triflu	7.0	U
67-64-1	Acetone	120	B, BL
75-09-2	Methylene Chloride	7.0	U
156-60-5	trans-1,2-Dichloroethene	7.0	U
1634-04-4	Methyl-tert-butyl ether	7.0	U
75-34-3	1,1-Dichloroethane	7.0	U
156-59-2	cis-1,2-Dichloroethene	7.0	U
78-93-3	2-butanone	17	J B, BL
67-66-3	Chloroform	7.0	U
71-55-6	1,1,1-Trichloroethane	7.0	U
56-23-5	Carbon Tetrachloride	7.0	U
71-43-2	Benzene	7.0	U
107-06-2	1,2-Dichloroethane	7.0	U
79-01-6	Trichloroethene	7.0	U
78-87-5	1,2-Dichloropropane	7.0	U
75-27-4	Bromodichloromethane	7.0	U
10061-01-5	cis-1,3-Dichloropropene	7.0	U
108-10-1	4-Methyl-2-pentanone	17	U
108-88-3	Toluene	7.0	U
10061-02-6	trans-1,3-Dichloropropene	7.0	U
79-00-5	1,1,2-Trichloroethane	7.0	U
127-18-4	Tetrachloroethene	7.0	U
591-78-6	2-hexanone	17	U
124-48-1	Dibromochloromethane	7.0	U
106-93-4	1,2-Dibromoethane	7.0	U

FORM I VOA

100807

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD31P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-13

Sample wt/vol: 4.78(g/mL) G Lab File ID: 0907174-1359

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 25 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	7.0	U
100-41-4	Ethylbenzene	7.0	U
100-42-5	Styrene	7.0	U
75-25-2	Bromoform	7.0	U
98-82-8	Isopropyl Benzene	7.0	U
79-34-5	1,1,2,2-Tetrachloroethane	7.0	U
541-73-1	1,3-Dichlorobenzene	7.0	U
106-46-7	1,4-Dichlorobenzene	7.0	U
95-50-1	1,2-Dichlorobenzene	7.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	7.0	U
120-82-1	1,2,4-Trichlorobenzene	7.0	U
1330-20-7	Xylene (total)	7.0	U
79-20-9	Methyl acetate	7.0	U
110-82-7	Cyclohexane	7.0	U
108-87-2	Methylcyclohexane	7.0	U
108-38-3	m,p-Xylene (part of total)	14	U
95-47-6	o-Xylene (part of total)	7.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD32-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-04

Sample wt/vol: 2.41(g/mL) G Lab File ID: 0907174-0459

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 69 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	33	U
74-87-3	Chloromethane	33	U
75-01-4	Vinyl Chloride	33	U
74-83-9	Bromomethane	33	U
75-00-3	Chloroethane	33	U
75-69-4	Trichlorofluoromethane	33	U
75-35-4	1,1-Dichloroethene	33	U
75-15-0	Carbon disulfide	10	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	33	U
67-64-1	Acetone	190	
75-09-2	Methylene Chloride	33	U
156-60-5	trans-1,2-Dichloroethene	33	U
1634-04-4	Methyl-tert-butyl ether	33	U
75-34-3	1,1-Dichloroethane	33	U
156-59-2	cis-1,2-Dichloroethene	33	U
78-93-3	2-butanone	84	U
67-66-3	Chloroform	33	U
71-55-6	1,1,1-Trichloroethane	33	U
56-23-5	Carbon Tetrachloride	33	U
71-43-2	Benzene	33	U
107-06-2	1,2-Dichloroethane	33	U
79-01-6	Trichloroethene	33	U
78-87-5	1,2-Dichloropropane	33	U
75-27-4	Bromodichloromethane	33	U
10061-01-5	cis-1,3-Dichloropropene	33	U
108-10-1	4-Methyl-2-pentanone	84	U
108-88-3	Toluene	33	U
10061-02-6	trans-1,3-Dichloropropene	33	U
79-00-5	1,1,2-Trichloroethane	33	U
127-18-4	Tetrachloroethene	33	U
591-78-6	2-hexanone	84	U
124-48-1	Dibromochloromethane	33	U
106-93-4	1,2-Dibromoethane	33	U

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FORM I VOA

10/08/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD32-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-04

Sample wt/vol: 2.41(g/mL) G Lab File ID: 0907174-0459

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 69 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	33	U
100-41-4	Ethylbenzene	33	U
100-42-5	Styrene	33	U
75-25-2	Bromoform	33	U
98-82-8	Isopropyl Benzene	33	U
79-34-5	1,1,2,2-Tetrachloroethane	33	U
541-73-1	1,3-Dichlorobenzene	33	U
106-46-7	1,4-Dichlorobenzene	33	U
95-50-1	1,2-Dichlorobenzene	33	U
96-12-8	1,2-Dibromo-3-Chloropropane	33	U
120-82-1	1,2,4-Trichlorobenzene	33	U
1330-20-7	Xylene (total)	33	U
79-20-9	Methyl acetate	33	U
110-82-7	Cyclohexane	33	U
108-87-2	Methylcyclohexane	33	U
108-38-3	m,p-Xylene (part of total)	67	U
95-47-6	o-Xylene (part of total)	33	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD33-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-03

Sample wt/vol: 3.76(g/mL) G Lab File ID: 0907174-0359

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 61 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	17	U
74-87-3	Chloromethane	17	U
75-01-4	Vinyl Chloride	17	U
74-83-9	Bromomethane	17	U
75-00-3	Chloroethane	17	U
75-69-4	Trichlorofluoromethane	17	U
75-35-4	1,1-Dichloroethene	17	U
75-15-0	Carbon disulfide	4.9	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	17	U
67-64-1	Acetone	79	
75-09-2	Methylene Chloride	17	U
156-60-5	trans-1,2-Dichloroethene	17	U
1634-04-4	Methyl-tert-butyl ether	17	U
75-34-3	1,1-Dichloroethane	17	U
156-59-2	cis-1,2-Dichloroethene	17	U
78-93-3	2-butanone	15	J
67-66-3	Chloroform	17	U
71-55-6	1,1,1-Trichloroethane	17	U
56-23-5	Carbon Tetrachloride	17	U
71-43-2	Benzene	17	U
107-06-2	1,2-Dichloroethane	17	U
79-01-6	Trichloroethene	17	U
78-87-5	1,2-Dichloropropane	17	U
75-27-4	Bromodichloromethane	17	U
10061-01-5	cis-1,3-Dichloropropene	17	U
108-10-1	4-Methyl-2-pentanone	43	U
108-88-3	Toluene	17	U
10061-02-6	trans-1,3-Dichloropropene	17	U
79-00-5	1,1,2-Trichloroethane	17	U
127-18-4	Tetrachloroethene	17	U
591-78-6	2-hexanone	43	U
124-48-1	Dibromochloromethane	17	U
106-93-4	1,2-Dibromoethane	17	U

FORM I VOA

100807

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SD33-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-03

Sample wt/vol: 3.76(g/mL) G Lab File ID: 0907174-0359

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 61 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	17	U
100-41-4	Ethylbenzene	17	U
100-42-5	Styrene	17	U
75-25-2	Bromoform	17	U
98-82-8	Isopropyl Benzene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
541-73-1	1,3-Dichlorobenzene	17	U
106-46-7	1,4-Dichlorobenzene	17	U
95-50-1	1,2-Dichlorobenzene	17	U
96-12-8	1,2-Dibromo-3-Chloropropane	17	U
120-82-1	1,2,4-Trichlorobenzene	17	U
1330-20-7	Xylene (total)	17	U
79-20-9	Methyl acetate	17	U
110-82-7	Cyclohexane	17	U
108-87-2	Methylcyclohexane	17	U
108-38-3	m,p-Xylene (part of total)	34	U
95-47-6	o-Xylene (part of total)	17	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD05-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-10

Sample wt/vol: 3.98(g/mL) G Lab File ID: 0907174-1059

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 46 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
75-15-0	Carbon disulfide	5.7	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	12	U
67-64-1	Acetone	98	B,BL
75-09-2	Methylene Chloride	12	U
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl-tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
78-93-3	2-butanone	17	J B,BL
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
71-43-2	Benzene	12	U
107-06-2	1,2-Dichloroethane	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	29	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-hexanone	29	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U

FORM I VOA

100801

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD05-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-10

Sample wt/vol: 3.98(g/mL) G Lab File ID: 0907174-1059

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 46 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropyl Benzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-Chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
1330-20-7	Xylene (total)	12	U
79-20-9	Methyl acetate	12	U
110-82-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U
108-38-3	m,p-Xylene (part of total)	23	U
95-47-6	o-Xylene (part of total)	12	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-11

Sample wt/vol: 3.58(g/mL) G Lab File ID: 0907174-1159

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 41 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	12	U
74-87-3	Chloromethane	12	U
75-01-4	Vinyl Chloride	12	U
74-83-9	Bromomethane	12	U
75-00-3	Chloroethane	12	U
75-69-4	Trichlorofluoromethane	12	U
75-35-4	1,1-Dichloroethene	12	U
75-15-0	Carbon disulfide	7.0	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	12	U
67-64-1	Acetone	80	BB
75-09-2	Methylene Chloride	12	U
156-60-5	trans-1,2-Dichloroethene	12	U
1634-04-4	Methyl-tert-butyl ether	12	U
75-34-3	1,1-Dichloroethane	12	U
156-59-2	cis-1,2-Dichloroethene	12	U
78-93-3	2-butanone	30	U
67-66-3	Chloroform	12	U
71-55-6	1,1,1-Trichloroethane	12	U
56-23-5	Carbon Tetrachloride	12	U
71-43-2	Benzene	12	U
107-06-2	1,2-Dichloroethane	12	U
79-01-6	Trichloroethene	12	U
78-87-5	1,2-Dichloropropane	12	U
75-27-4	Bromodichloromethane	12	U
10061-01-5	cis-1,3-Dichloropropene	12	U
108-10-1	4-Methyl-2-pentanone	30	U
108-88-3	Toluene	12	U
10061-02-6	trans-1,3-Dichloropropene	12	U
79-00-5	1,1,2-Trichloroethane	12	U
127-18-4	Tetrachloroethene	12	U
591-78-6	2-hexanone	30	U
124-48-1	Dibromochloromethane	12	U
106-93-4	1,2-Dibromoethane	12	U

100807

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-11

Sample wt/vol: 3.58(g/mL) G Lab File ID: 0907174-1159

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. 41 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	12	U
100-41-4	Ethylbenzene	12	U
100-42-5	Styrene	12	U
75-25-2	Bromoform	12	U
98-82-8	Isopropyl Benzene	12	U
79-34-5	1,1,2,2-Tetrachloroethane	12	U
541-73-1	1,3-Dichlorobenzene	12	U
106-46-7	1,4-Dichlorobenzene	12	U
95-50-1	1,2-Dichlorobenzene	12	U
96-12-8	1,2-Dibromo-3-Chloropropane	12	U
120-82-1	1,2,4-Trichlorobenzene	12	U
1330-20-7	Xylene (total)	12	U
79-20-9	Methyl acetate	12	U
110-82-7	Cyclohexane	12	U
108-87-2	Methylcyclohexane	12	U
108-38-3	m,p-Xylene (part of total)	24	U
95-47-6	o-Xylene (part of total)	12	U

100807

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD06-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-09

Sample wt/vol: 3.45(g/mL) G Lab File ID: 0907174-0959

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 66 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	21	U
74-87-3	Chloromethane	21	U
75-01-4	Vinyl Chloride	21	U
74-83-9	Bromomethane	21	U
75-00-3	Chloroethane	21	U
75-69-4	Trichlorofluoromethane	21	U
75-35-4	1,1-Dichloroethene	21	U
75-15-0	Carbon disulfide	6.8	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	21	U
67-64-1	Acetone	120	B,BL
75-09-2	Methylene Chloride	21	U
156-60-5	trans-1,2-Dichloroethene	21	U
1634-04-4	Methyl-tert-butyl ether	21	U
75-34-3	1,1-Dichloroethane	21	U
156-59-2	cis-1,2-Dichloroethene	21	U
78-93-3	2-butanone	53	U
67-66-3	Chloroform	21	U
71-55-6	1,1,1-Trichloroethane	21	U
56-23-5	Carbon Tetrachloride	21	U
71-43-2	Benzene	21	U
107-06-2	1,2-Dichloroethane	21	U
79-01-6	Trichloroethene	21	U
78-87-5	1,2-Dichloropropane	21	U
75-27-4	Bromodichloromethane	21	U
10061-01-5	cis-1,3-Dichloropropene	21	U
108-10-1	4-Methyl-2-pentanone	53	U
108-88-3	Toluene	21	U
10061-02-6	trans-1,3-Dichloropropene	21	U
79-00-5	1,1,2-Trichloroethane	21	U
127-18-4	Tetrachloroethene	21	U
591-78-6	2-hexanone	53	U
124-48-1	Dibromochloromethane	21	U
106-93-4	1,2-Dibromoethane	21	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD06-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-09

Sample wt/vol: 3.45(g/mL) G Lab File ID: 0907174-0959

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 66 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	21	U
100-41-4	Ethylbenzene	21	U
100-42-5	Styrene	21	U
75-25-2	Bromoform	21	U
98-82-8	Isopropyl Benzene	21	U
79-34-5	1,1,2,2-Tetrachloroethane	21	U
541-73-1	1,3-Dichlorobenzene	21	U
106-46-7	1,4-Dichlorobenzene	21	U
95-50-1	1,2-Dichlorobenzene	21	U
96-12-8	1,2-Dibromo-3-Chloropropane	21	U
120-82-1	1,2,4-Trichlorobenzene	21	U
1330-20-7	Xylene (total)	21	U
79-20-9	Methyl acetate	21	U
110-82-7	Cyclohexane	21	U
108-87-2	Methylcyclohexane	21	U
108-38-3	m,p-Xylene (part of total)	43	U
95-47-6	o-Xylene (part of total)	21	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD07-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-08

Sample wt/vol: 3.40(g/mL) G Lab File ID: 0907174-0859

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 64 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	20	U
74-87-3	Chloromethane	20	U
75-01-4	Vinyl Chloride	20	U
74-83-9	Bromomethane	20	U
75-00-3	Chloroethane	20	U
75-69-4	Trichlorofluoromethane	20	U
75-35-4	1,1-Dichloroethene	20	U
75-15-0	Carbon disulfide	9.8	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	20	U
67-64-1	Acetone	120	B,BL
75-09-2	Methylene Chloride	20	U
156-60-5	trans-1,2-Dichloroethene	20	U
1634-04-4	Methyl-tert-butyl ether	20	U
75-34-3	1,1-Dichloroethane	20	U
156-59-2	cis-1,2-Dichloroethene	20	U
78-93-3	2-butanone	24	J B,BL
67-66-3	Chloroform	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
71-43-2	Benzene	20	U
107-06-2	1,2-Dichloroethane	20	U
79-01-6	Trichloroethene	20	U
78-87-5	1,2-Dichloropropane	20	U
75-27-4	Bromodichloromethane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
108-10-1	4-Methyl-2-pentanone	51	U
108-88-3	Toluene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
79-00-5	1,1,2-Trichloroethane	20	U
127-18-4	Tetrachloroethene	20	U
591-78-6	2-hexanone	51	U
124-48-1	Dibromochloromethane	20	U
106-93-4	1,2-Dibromoethane	20	U

FORM I VOA

100807

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD07-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-08

Sample wt/vol: 3.40(g/mL) G Lab File ID: 0907174-0859

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 64 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
75-25-2	Bromoform	20	U
98-82-8	Isopropyl Benzene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-50-1	1,2-Dichlorobenzene	20	U
96-12-8	1,2-Dibromo-3-Chloropropane	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
1330-20-7	Xylene (total)	20	U
79-20-9	Methyl acetate	20	U
110-82-7	Cyclohexane	20	U
108-87-2	Methylcyclohexane	20	U
108-38-3	m,p-Xylene (part of total)	41	U
95-47-6	o-Xylene (part of total)	20	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD08-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-06

Sample wt/vol: 3.07(g/mL) G Lab File ID: 0907174-0659

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 77 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	35	U
74-87-3	Chloromethane	35	U
75-01-4	Vinyl Chloride	35	U
74-83-9	Bromomethane	35	U
75-00-3	Chloroethane	35	U
75-69-4	Trichlorofluoromethane	35	U
75-35-4	1,1-Dichloroethene	35	U
75-15-0	Carbon disulfide	38	
76-13-1	1,1,2-trichloro-1,2,2-triflu	35	U
67-64-1	Acetone	130	B,BL
75-09-2	Methylene Chloride	35	U
156-60-5	trans-1,2-Dichloroethene	35	U
1634-04-4	Methyl-tert-butyl ether	35	U
75-34-3	1,1-Dichloroethane	35	U
156-59-2	cis-1,2-Dichloroethene	35	U
78-93-3	2-butanone	89	U
67-66-3	Chloroform	35	U
71-55-6	1,1,1-Trichloroethane	35	U
56-23-5	Carbon Tetrachloride	35	U
71-43-2	Benzene	35	U
107-06-2	1,2-Dichloroethane	35	U
79-01-6	Trichloroethene	35	U
78-87-5	1,2-Dichloropropane	35	U
75-27-4	Bromodichloromethane	35	U
10061-01-5	cis-1,3-Dichloropropene	35	U
108-10-1	4-Methyl-2-pentanone	89	U
108-88-3	Toluene	35	U
10061-02-6	trans-1,3-Dichloropropene	35	U
79-00-5	1,1,2-Trichloroethane	35	U
127-18-4	Tetrachloroethene	35	U
591-78-6	2-hexanone	89	U
124-48-1	Dibromochloromethane	35	U
106-93-4	1,2-Dibromoethane	35	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD08-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-06

Sample wt/vol: 3.07(g/mL) G Lab File ID: 0907174-0659

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 77 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	35	U
100-41-4	Ethylbenzene	35	U
100-42-5	Styrene	35	U
75-25-2	Bromoform	35	U
98-82-8	Isopropyl Benzene	35	U
79-34-5	1,1,2,2-Tetrachloroethane	35	U
541-73-1	1,3-Dichlorobenzene	35	U
106-46-7	1,4-Dichlorobenzene	35	U
95-50-1	1,2-Dichlorobenzene	35	U
96-12-8	1,2-Dibromo-3-Chloropropane	35	U
120-82-1	1,2,4-Trichlorobenzene	35	U
1330-20-7	Xylene (total)	35	U
79-20-9	Methyl acetate	35	U
110-82-7	Cyclohexane	35	U
108-87-2	Methylcyclohexane	35	U
108-38-3	m,p-Xylene (part of total)	71	U
95-47-6	o-Xylene (part of total)	35	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD09-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-07

Sample wt/vol: 3.57(g/mL) G Lab File ID: 0907174-0759

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 71 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
75-71-8	Dichlorodifluoromethane	24	U	
74-87-3	Chloromethane	24	U	
75-01-4	Vinyl Chloride	24	U	
74-83-9	Bromomethane	24	U	
75-00-3	Chloroethane	24	U	
75-69-4	Trichlorofluoromethane	24	U	
75-35-4	1,1-Dichloroethene	24	U	
75-15-0	Carbon disulfide	16	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	24	U	
67-64-1	Acetone	84		B,BL
75-09-2	Methylene Chloride	24	U	
156-60-5	trans-1,2-Dichloroethene	24	U	
1634-04-4	Methyl-tert-butyl ether	24	U	
75-34-3	1,1-Dichloroethane	24	U	
156-59-2	cis-1,2-Dichloroethene	24	U	
78-93-3	2-butanone	26		JB,BL
67-66-3	Chloroform	24	U	
71-55-6	1,1,1-Trichloroethane	24	U	
56-23-5	Carbon Tetrachloride	24	U	
71-43-2	Benzene	24	U	
107-06-2	1,2-Dichloroethane	24	U	
79-01-6	Trichloroethene	24	U	
78-87-5	1,2-Dichloropropane	24	U	
75-27-4	Bromodichloromethane	24	U	
10061-01-5	cis-1,3-Dichloropropene	24	U	
108-10-1	4-Methyl-2-pentanone	60	U	
108-88-3	Toluene	24	U	
10061-02-6	trans-1,3-Dichloropropene	24	U	
79-00-5	1,1,2-Trichloroethane	24	U	
127-18-4	Tetrachloroethene	24	U	
591-78-6	2-hexanone	60	U	
124-48-1	Dibromochloromethane	24	U	
106-93-4	1,2-Dibromoethane	24	U	

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD09-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-07

Sample wt/vol: 3.57(g/mL) G Lab File ID: 0907174-0759

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 71 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	24	U
100-41-4	Ethylbenzene	24	U
100-42-5	Styrene	24	U
75-25-2	Bromoform	24	U
98-82-8	Isopropyl Benzene	24	U
79-34-5	1,1,2,2-Tetrachloroethane	24	U
541-73-1	1,3-Dichlorobenzene	24	U
106-46-7	1,4-Dichlorobenzene	24	U
95-50-1	1,2-Dichlorobenzene	24	U
96-12-8	1,2-Dibromo-3-Chloropropane	24	U
120-82-1	1,2,4-Trichlorobenzene	24	U
1330-20-7	Xylene (total)	24	U
79-20-9	Methyl acetate	24	U
110-82-7	Cyclohexane	24	U
108-87-2	Methylcyclohexane	24	U
108-38-3	m,p-Xylene (part of total)	48	U
95-47-6	o-Xylene (part of total)	24	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD10-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-05

Sample wt/vol: 3.10(g/mL) G Lab File ID: 0907174-0559

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 60 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	20	U
74-87-3	Chloromethane	20	U
75-01-4	Vinyl Chloride	20	U
74-83-9	Bromomethane	20	U
75-00-3	Chloroethane	20	U
75-69-4	Trichlorofluoromethane	20	U
75-35-4	1,1-Dichloroethene	20	U
75-15-0	Carbon disulfide	13	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	20	U
67-64-1	Acetone	68	B,BL
75-09-2	Methylene Chloride	20	U
156-60-5	trans-1,2-Dichloroethene	20	U
1634-04-4	Methyl-tert-butyl ether	20	U
75-34-3	1,1-Dichloroethane	20	U
156-59-2	cis-1,2-Dichloroethene	20	U
78-93-3	2-butanone	50	U
67-66-3	Chloroform	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
71-43-2	Benzene	20	U
107-06-2	1,2-Dichloroethane	20	U
79-01-6	Trichloroethene	20	U
78-87-5	1,2-Dichloropropane	20	U
75-27-4	Bromodichloromethane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
79-00-5	1,1,2-Trichloroethane	20	U
127-18-4	Tetrachloroethene	20	U
591-78-6	2-hexanone	50	U
124-48-1	Dibromochloromethane	20	U
106-93-4	1,2-Dibromoethane	20	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD10-0709

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-05

Sample wt/vol: 3.10(g/mL) G Lab File ID: 0907174-0559

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 60 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
75-25-2	Bromoform	20	U
98-82-8	Isopropyl Benzene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-50-1	1,2-Dichlorobenzene	20	U
96-12-8	1,2-Dibromo-3-Chloropropane	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
1330-20-7	Xylene (total)	20	U
79-20-9	Methyl acetate	20	U
110-82-7	Cyclohexane	20	U
108-87-2	Methylcyclohexane	20	U
108-38-3	m,p-Xylene (part of total)	40	U
95-47-6	o-Xylene (part of total)	20	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD11-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-02

Sample wt/vol: 3.37(g/mL) G Lab File ID: 0907174-0259

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 63 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	20	U
74-87-3	Chloromethane	20	U
75-01-4	Vinyl Chloride	20	U
74-83-9	Bromomethane	20	U
75-00-3	Chloroethane	20	U
75-69-4	Trichlorofluoromethane	20	U
75-35-4	1,1-Dichloroethene	20	U
75-15-0	Carbon disulfide	11	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	20	U
67-64-1	Acetone	150	
75-09-2	Methylene Chloride	20	U
156-60-5	trans-1,2-Dichloroethene	20	U
1634-04-4	Methyl-tert-butyl ether	20	U
75-34-3	1,1-Dichloroethane	20	U
156-59-2	cis-1,2-Dichloroethene	20	U
78-93-3	2-butanone	20	U
67-66-3	Chloroform	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
71-43-2	Benzene	20	U
107-06-2	1,2-Dichloroethane	20	U
79-01-6	Trichloroethene	20	U
78-87-5	1,2-Dichloropropane	20	U
75-27-4	Bromodichloromethane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
108-10-1	4-Methyl-2-pentanone	50	U
108-88-3	Toluene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
79-00-5	1,1,2-Trichloroethane	20	U
127-18-4	Tetrachloroethene	20	U
591-78-6	2-hexanone	50	U
124-48-1	Dibromochloromethane	20	U
106-93-4	1,2-Dibromoethane	20	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD11-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-02

Sample wt/vol: 3.37(g/mL) G Lab File ID: 0907174-0259

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 63 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	20	U
100-42-5	Styrene	20	U
75-25-2	Bromoform	20	U
98-82-8	Isopropyl Benzene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U
541-73-1	1,3-Dichlorobenzene	20	U
106-46-7	1,4-Dichlorobenzene	20	U
95-50-1	1,2-Dichlorobenzene	20	U
96-12-8	1,2-Dibromo-3-Chloropropane	20	U
120-82-1	1,2,4-Trichlorobenzene	20	U
1330-20-7	Xylene (total)	20	U
79-20-9	Methyl acetate	20	U
110-82-7	Cyclohexane	20	U
108-87-2	Methylcyclohexane	20	U
108-38-3	m,p-Xylene (part of total)	40	U
95-47-6	o-Xylene (part of total)	20	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD12-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-01

Sample wt/vol: 3.41(g/mL) G Lab File ID: 0907174-0159

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 65 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	21	U
74-87-3	Chloromethane	21	U
75-01-4	Vinyl Chloride	21	U
74-83-9	Bromomethane	21	U
75-00-3	Chloroethane	21	U
75-69-4	Trichlorofluoromethane	21	U
75-35-4	1,1-Dichloroethene	21	U
75-15-0	Carbon disulfide	16	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	21	U
67-64-1	Acetone	200	
75-09-2	Methylene Chloride	21	U
156-60-5	trans-1,2-Dichloroethene	21	U
1634-04-4	Methyl-tert-butyl ether	21	U
75-34-3	1,1-Dichloroethane	21	U
156-59-2	cis-1,2-Dichloroethene	21	U
78-93-3	2-butanone	36	
67-66-3	Chloroform	21	U
71-55-6	1,1,1-Trichloroethane	21	U
56-23-5	Carbon Tetrachloride	21	U
71-43-2	Benzene	21	U
107-06-2	1,2-Dichloroethane	21	U
79-01-6	Trichloroethene	21	U
78-87-5	1,2-Dichloropropane	21	U
75-27-4	Bromodichloromethane	21	U
10061-01-5	cis-1,3-Dichloropropene	21	U
108-10-1	4-Methyl-2-pentanone	52	U
108-88-3	Toluene	21	U
10061-02-6	trans-1,3-Dichloropropene	21	U
79-00-5	1,1,2-Trichloroethane	21	U
127-18-4	Tetrachloroethene	21	U
591-78-6	2-hexanone	52	U
124-48-1	Dibromochloromethane	21	U
106-93-4	1,2-Dibromoethane	21	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD12-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 0907174-01

Sample wt/vol: 3.41(g/mL) G Lab File ID: 0907174-0159

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. 65 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG		Q
108-90-7	Chlorobenzene	21	U	ULOT
100-41-4	Ethylbenzene	21	U	ULOT
100-42-5	Styrene	4.6	J	LOT
75-25-2	Bromoform	21	U	ULOT
98-82-8	Isopropyl Benzene	21	U	
79-34-5	1,1,2,2-Tetrachloroethane	21	U	
541-73-1	1,3-Dichlorobenzene	21	U	
106-46-7	1,4-Dichlorobenzene	21	U	
95-50-1	1,2-Dichlorobenzene	21	U	
96-12-8	1,2-Dibromo-3-Chloropropane	21	U	
120-82-1	1,2,4-Trichlorobenzene	9.0	J	B, BL
1330-20-7	Xylene (total)	21	U	ULOT
79-20-9	Methyl acetate	21	U	
110-82-7	Cyclohexane	21	U	
108-87-2	Methylcyclohexane	21	U	
108-38-3	m,p-Xylene (part of total)	42	U	
95-47-6	o-Xylene (part of total)	21	U	

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD1
0-0709MS

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 9073110-MS1

Sample wt/vol: 3.46(g/mL) G Lab File ID: 9073110-MS159

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 60 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	120	
74-87-3	Chloromethane	140	
75-01-4	Vinyl Chloride	130	
74-83-9	Bromomethane	28	
75-00-3	Chloroethane	250	
75-69-4	Trichlorofluoromethane	120	
75-35-4	1,1-Dichloroethene	130	
75-15-0	Carbon disulfide	140	
76-13-1	1,1,2-trichloro-1,2,2-triflu	110	
67-64-1	Acetone	460	
75-09-2	Methylene Chloride	130	
156-60-5	trans-1,2-Dichloroethene	130	
1634-04-4	Methyl-tert-butyl ether	150	
75-34-3	1,1-Dichloroethane	150	
156-59-2	cis-1,2-Dichloroethene	130	
78-93-3	2-butanone	320	
67-66-3	Chloroform	150	
71-55-6	1,1,1-Trichloroethane	130	
56-23-5	Carbon Tetrachloride	130	
71-43-2	Benzene	140	
107-06-2	1,2-Dichloroethane	140	
79-01-6	Trichloroethene	110	
78-87-5	1,2-Dichloropropane	150	
75-27-4	Bromodichloromethane	130	
10061-01-5	cis-1,3-Dichloropropene	130	
108-10-1	4-Methyl-2-pentanone	310	
108-88-3	Toluene	110	
10061-02-6	trans-1,3-Dichloropropene	120	
79-00-5	1,1,2-Trichloroethane	120	
127-18-4	Tetrachloroethene	89	
591-78-6	2-hexanone	250	
124-48-1	Dibromochloromethane	110	
106-93-4	1,2-Dibromoethane	110	

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-SD1
0-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 9073110-MS1

Sample wt/vol: 3.46(g/mL) G Lab File ID: 9073110-MS159

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 60 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	98	
100-41-4	Ethylbenzene	97	
100-42-5	Styrene	75	
75-25-2	Bromoform	87	
98-82-8	Isopropyl Benzene	86	
79-34-5	1,1,2,2-Tetrachloroethane	100	
541-73-1	1,3-Dichlorobenzene	68	
106-46-7	1,4-Dichlorobenzene	65	
95-50-1	1,2-Dichlorobenzene	70	
96-12-8	1,2-Dibromo-3-Chloropropane	71	
120-82-1	1,2,4-Trichlorobenzene	36	
1330-20-7	Xylene (total)	290	
79-20-9	Methyl acetate	110	
110-82-7	Cyclohexane	110	
108-87-2	Methylcyclohexane	74	
108-38-3	m,p-Xylene (part of total)	190	
95-47-6	o-Xylene (part of total)	99	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-SD1
0-0709MSD

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 9073110-MSD1

Sample wt/vol: 3.46(g/mL) G Lab File ID: 9073110-MSD159

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 60 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	140	
74-87-3	Chloromethane	130	
75-01-4	Vinyl Chloride	130	
74-83-9	Bromomethane	45	
75-00-3	Chloroethane	150	
75-69-4	Trichlorofluoromethane	180	
75-35-4	1,1-Dichloroethene	160	
75-15-0	Carbon disulfide	180	
76-13-1	1,1,2-trichloro-1,2,2-triflu	140	
67-64-1	Acetone	620	
75-09-2	Methylene Chloride	150	
156-60-5	trans-1,2-Dichloroethene	150	
1634-04-4	Methyl-tert-butyl ether	170	
75-34-3	1,1-Dichloroethane	170	
156-59-2	cis-1,2-Dichloroethene	150	
78-93-3	2-butanone	400	
67-66-3	Chloroform	160	
71-55-6	1,1,1-Trichloroethane	150	
56-23-5	Carbon Tetrachloride	140	
71-43-2	Benzene	160	
107-06-2	1,2-Dichloroethane	160	
79-01-6	Trichloroethene	130	
78-87-5	1,2-Dichloropropane	160	
75-27-4	Bromodichloromethane	150	
10061-01-5	cis-1,3-Dichloropropene	150	
108-10-1	4-Methyl-2-pentanone	390	
108-88-3	Toluene	130	
10061-02-6	trans-1,3-Dichloropropene	140	
79-00-5	1,1,2-Trichloroethane	140	
127-18-4	Tetrachloroethene	110	
591-78-6	2-hexanone	360	
124-48-1	Dibromochloromethane	130	
106-93-4	1,2-Dibromoethane	130	

FORM I VOA

100807

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SD1
0-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix: (soil/water) SOIL Lab Sample ID: 9073110-MSD1

Sample wt/vol: 3.46(g/mL) G Lab File ID: 9073110-MSD159

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. 60 Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	120	
100-41-4	Ethylbenzene	120	
100-42-5	Styrene	90	
75-25-2	Bromoform	110	
98-82-8	Isopropyl Benzene	110	
79-34-5	1,1,2,2-Tetrachloroethane	130	
541-73-1	1,3-Dichlorobenzene	86	
106-46-7	1,4-Dichlorobenzene	82	
95-50-1	1,2-Dichlorobenzene	85	
96-12-8	1,2-Dibromo-3-Chloropropane	100	
120-82-1	1,2,4-Trichlorobenzene	50	
1330-20-7	Xylene (total)	350	
79-20-9	Methyl acetate	130	
110-82-7	Cyclohexane	140	
108-87-2	Methylcyclohexane	110	
108-38-3	m,p-Xylene (part of total)	230	
95-47-6	o-Xylene (part of total)	120	

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01/3-SD04-0709

XICOM JAC 101009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-16

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 68.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2350			P	
7440-36-0	Antimony	1.4	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	1.6		~~N~~ L	P	MSL
7440-39-3	Barium	12.3	~~B~~	J	P	
7440-41-7	Beryllium	0.34	~~B~~	B MBL	P	
7440-43-9	Cadmium	0.69	~~U~~	UL MBL	P	
7440-70-2	Calcium	621	~~B~~	J	P	
7440-47-3	Chromium	5.1		~~N~~ L	P	MSL
7440-48-4	Cobalt	1.1			P	
7440-50-8	Copper	3.5			P	
7439-89-6	Iron	3380			P	
7439-92-1	Lead	6.5		~~E~~ J	P	SD
7439-95-4	Magnesium	618	~~B~~	J	P	
7439-96-5	Manganese	9.7		~~N~~ L	P	MSL
7439-97-6	Mercury	0.030	~~B~~	J	CV	
7440-02-0	Nickel	2.5	~~B~~	J	P	
7440-09-7	Potassium	372	~~B~~	J	P	
7782-49-2	Selenium	0.50	~~B~~	~~N~~ B FSL	P	
7440-22-4	Silver	0.69	~~U~~	UL MBL	P	
7440-23-5	Sodium	1770			P	
7440-28-0	Thallium	1.4	U		P	
7440-62-2	Vanadium	8.4		~~N~~ L	P	MSL
7440-66-6	Zinc	29.7		~~N~~ L	P	MSL

JAC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SD03-0709
3

Xicon JC 101009

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-15

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 24.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5520			P	
7440-36-0	Antimony	4.1	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	1.7	~~B~~	~~N~~ L	P	MSL
7440-39-3	Barium	16.7	~~B~~	J	P	
7440-41-7	Beryllium	1.0	~~B~~	B MBL	P	
7440-43-9	Cadmium	2.1	~~U~~	UL MBL	P	
7440-70-2	Calcium	8890			P	
7440-47-3	Chromium	10.1		~~N~~ L	P	MSL
7440-48-4	Cobalt	2.2			P	
7440-50-8	Copper	12.3			P	
7439-89-6	Iron	8280			P	
7439-92-1	Lead	23.2		~~B~~ J	P	SD
7439-95-4	Magnesium	5520			P	
7439-96-5	Manganese	73.2		~~N~~ L	P	MSL
7439-97-6	Mercury	0.12	~~B~~	J	CV	
7440-02-0	Nickel	7.6	~~B~~	J	P	
7440-09-7	Potassium	1330	~~B~~	J	P	
7782-49-2	Selenium	2.0	~~B~~	~~N~~ B FBL	P	
7440-22-4	Silver	2.1	~~U~~	UL MBL	P	
7440-23-5	Sodium	13600			P	
7440-28-0	Thallium	4.1	U		P	
7440-62-2	Vanadium	20.9		~~N~~ L	P	MSL
7440-66-6	Zinc	36.0		~~N~~ L	P	MSL

JAC 101609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SD30-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-14

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 80.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	395			P	
7440-36-0	Antimony	1.2	~~U~~	~~J~~ UL	P	MSL
7440-38-2	Arsenic	1.2	~~U~~	~~J~~ UL	P	MSL
7440-39-3	Barium	2.1	~~B~~	J	P	
7440-41-7	Beryllium	0.13	~~B~~	B MBL	P	
7440-43-9	Cadmium	0.58	~~U~~	UL MBL	P	
7440-70-2	Calcium	182	~~B~~	J	P	
7440-47-3	Chromium	0.88	~~B~~	~~J~~ L	P	MSL
7440-48-4	Cobalt	0.11	~~B~~	J	P	
7440-50-8	Copper	0.47	~~B~~	L MBL	P	
7439-89-6	Iron	471			P	
7439-92-1	Lead	1.6		~~E~~ J	P	SD
7439-95-4	Magnesium	37.4	~~B~~	J	P	
7439-96-5	Manganese	1.6		~~J~~ L	P	MSL
7439-97-6	Mercury	0.037	U		CV	
7440-02-0	Nickel	0.23	~~B~~	J	P	
7440-09-7	Potassium	29.2	~~B~~	J	P	
7782-49-2	Selenium	0.58	~~U~~	~~J~~ R	P	MSL
7440-22-4	Silver	0.58	~~U~~	UL MBL	P	
7440-23-5	Sodium	142	~~B~~	B FBL	P	
7440-28-0	Thallium	1.2	U		P	
7440-62-2	Vanadium	0.79	~~B~~	~~J~~ J L	P	MSL
7440-66-6	Zinc	2.5		~~J~~ L	P	MSL

JAC 101609

XI corr JAC 101109

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-SD31-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-12

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 75.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	716		J	P	FD
7440-36-0	Antimony	1.3	~~U~~	~~J~~ UL	P	MSL
7440-38-2	Arsenic	1.3	~~U~~	~~J~~ UL	P	MSL
7440-39-3	Barium	5.3	~~B~~	J	P	
7440-41-7	Beryllium	0.17	~~B~~	B MBL	P	
7440-43-9	Cadmium	0.65	~~U~~	UL MBL	P	
7440-70-2	Calcium	895			P	
7440-47-3	Chromium	1.6		~~J~~ L	P	MSL
7440-48-4	Cobalt	0.57	~~B~~	J	P	
7440-50-8	Copper	1.8			P	
7439-89-6	Iron	1760			P	
7439-92-1	Lead	2.1		~~J~~ J	P	SD
7439-95-4	Magnesium	206	~~B~~	J	P	
7439-96-5	Manganese	15.5		~~J~~ L	P	MSL
7439-97-6	Mercury	0.043	U		CV	
7440-02-0	Nickel	0.88	~~B~~	J	P	
7440-09-7	Potassium	90.1	~~B~~	J	P	
7782-49-2	Selenium	0.65	~~U~~	~~J~~ R	P	MSL
7440-22-4	Silver	0.65	~~U~~	UL MBL	P	
7440-23-5	Sodium	657			P	
7440-28-0	Thallium	1.3	U		P	
7440-62-2	Vanadium	1.9	~~B~~	~~J~~ J L	P	MSL
7440-66-6	Zinc	5.1		~~J~~ L	P	MSL

xl corr JAC 101109

JAC 10/6/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SD31P-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-13

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 75.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	478		J	P	FD
7440-36-0	Antimony	1.3	~~U~~	~~UJ~~ UL	P	MSL
7440-38-2	Arsenic	1.3	~~U~~	~~UJ~~ UL	P	MSL
7440-39-3	Barium	4.4	~~B~~	J	P	
7440-41-7	Beryllium	0.15	~~B~~	B MBL	P	
7440-43-9	Cadmium	0.64	~~U~~	UL MBL	P	
7440-70-2	Calcium	604	~~B~~	J	P	
7440-47-3	Chromium	1.2	~~B~~	~~J~~ L	P	MSL
7440-48-4	Cobalt	0.44	~~B~~	J	P	
7440-50-8	Copper	0.64	~~B~~	L MBL	P	
7439-89-6	Iron	1300			P	
7439-92-1	Lead	1.9		~~B~~ J	P	SD
7439-95-4	Magnesium	138	~~B~~	J	P	
7439-96-5	Manganese	13.1		~~J~~ L	P	MSL
7439-97-6	Mercury	0.040	U		CV	
7440-02-0	Nickel	0.54	~~B~~	J	P	
7440-09-7	Potassium	67.0	~~B~~	J	P	
7782-49-2	Selenium	0.64	~~U~~	~~J~~ R	P	MSL
7440-22-4	Silver	0.64	~~U~~	UL MBL	P	
7440-23-5	Sodium	499	~~B~~	B FBL	P	
7440-28-0	Thallium	1.3	U		P	
7440-62-2	Vanadium	1.2	~~B~~	~~J~~ J L	P	MSL
7440-66-6	Zinc	3.6		~~J~~ L	P	MSL

KLcom JMC 10/9/09

JMC 10/6/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SD32-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-04

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 30.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	25600			P	
7440-36-0	Antimony	3.2	~~U~~	~~J~~ UL	P	MSL
7440-38-2	Arsenic	7.3		~~J~~ L	P	MSL
7440-39-3	Barium	47.6	~~B~~	~~J~~	P	
7440-41-7	Beryllium	1.5	~~B~~	J	P	
7440-43-9	Cadmium	1.6	~~U~~	UL MBL	P	
7440-70-2	Calcium	2500			P	
7440-47-3	Chromium	51.6		~~J~~ L	P	MSL
7440-48-4	Cobalt	8.9			P	
7440-50-8	Copper	28.9			P	
7439-89-6	Iron	40000			P	
7439-92-1	Lead	29.6		~~B~~ J	P	SD
7439-95-4	Magnesium	8030			P	
7439-96-5	Manganese	316		~~J~~ L	P	MSL
7439-97-6	Mercury	0.064	~~B~~	J	CV	
7440-02-0	Nickel	23.0			P	
7440-09-7	Potassium	5150			P	
7782-49-2	Selenium	2.6		~~J~~ B FBL	P	
7440-22-4	Silver	1.6	~~U~~	UL MBL	P	
7440-23-5	Sodium	12100			P	
7440-28-0	Thallium	3.2	U		P	
7440-62-2	Vanadium	61.1		~~J~~ L	P	MSL
7440-66-6	Zinc	125		~~J~~ L	P	MSL

JC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SD33-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-03

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 38.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	22600			P	
7440-36-0	Antimony	2.6	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	11.6		N L	P	MSL
7440-39-3	Barium	42.7	~~B~~	J	P	
7440-41-7	Beryllium	1.3			P	
7440-43-9	Cadmium	1.3	~~U~~	UL MBL	P	
7440-70-2	Calcium	2720			P	
7440-47-3	Chromium	45.8		~~N~~ L	P	MSL
7440-48-4	Cobalt	8.0			P	
7440-50-8	Copper	26.8			P	
7439-89-6	Iron	40000			P	
7439-92-1	Lead	27.2		~~E~~ J	P	SD
7439-95-4	Magnesium	7110			P	
7439-96-5	Manganese	250		~~N~~ L	P	MSL
7439-97-6	Mercury	0.069	~~B~~	J	CV	
7440-02-0	Nickel	21.1			P	
7440-09-7	Potassium	4300			P	
7782-49-2	Selenium	3.0		~~N~~ B FBL	P	
7440-22-4	Silver	1.3	~~U~~	UL MBL	P	
7440-23-5	Sodium	7430			P	
7440-28-0	Thallium	2.6	U		P	
7440-62-2	Vanadium	62.3		~~N~~ L	P	MSL
7440-66-6	Zinc	114		~~N~~ L	P	MSL

JAC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS03-SD05-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-10

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 53.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5480			P	
7440-36-0	Antimony	1.8	~~U~~	~~J~~ UL	P	MSL
7440-38-2	Arsenic	2.4		~~J~~ L	P	MSL
7440-39-3	Barium	11.1	~~B~~	J	P	
7440-41-7	Beryllium	0.46	~~B~~	B MBL	P	
7440-43-9	Cadmium	0.89	~~U~~	UL MBL	P	
7440-70-2	Calcium	1480			P	
7440-47-3	Chromium	11.4		~~J~~ L	P	MSL
7440-48-4	Cobalt	2.2			P	
7440-50-8	Copper	6.4			P	
7439-89-6	Iron	9900			P	
7439-92-1	Lead	8.8		~~E~~ J	P	SD
7439-95-4	Magnesium	1840			P	
7439-96-5	Manganese	61.8		~~J~~ L	P	MSL
7439-97-6	Mercury	0.056	U		CV	
7440-02-0	Nickel	5.4	~~B~~	J	P	
7440-09-7	Potassium	976			P	
7782-49-2	Selenium	1.2		~~J~~ B MBL	P	
7440-22-4	Silver	0.89	~~U~~	UL MBL	P	
7440-23-5	Sodium	3040			P	
7440-28-0	Thallium	1.8	U		P	
7440-62-2	Vanadium	16.6		~~J~~ L	P	MSL
7440-66-6	Zinc	27.0		~~J~~ L	P	MSL

JBC 10/6/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SD05P-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-11

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 58.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	4860			P	
7440-36-0	Antimony	1.6	~~U~~	~~UJ~~ UL	P	MSL
7440-38-2	Arsenic	2.0		~~UJ~~ L	P	MSL
7440-39-3	Barium	9.9	~~B~~	J	P	
7440-41-7	Beryllium	0.42	~~B~~	B MBL	P	
7440-43-9	Cadmium	0.82	~~U~~	UL MBL	P	
7440-70-2	Calcium	1190			P	
7440-47-3	Chromium	10.5		~~UJ~~ L	P	MSL
7440-48-4	Cobalt	2.0			P	
7440-50-8	Copper	5.4			P	
7439-89-6	Iron	8460			P	
7439-92-1	Lead	7.3		~~UJ~~ J	P	SD
7439-95-4	Magnesium	1600			P	
7439-96-5	Manganese	53.2		~~UJ~~ L	P	MSL
7439-97-6	Mercury	0.030	~~B~~	J	CV	
7440-02-0	Nickel	4.7	~~B~~	J	P	
7440-09-7	Potassium	867			P	
7782-49-2	Selenium	0.97		~~UJ~~ B FBL	P	
7440-22-4	Silver	0.82	~~U~~	UL MBL	P	
7440-23-5	Sodium	2440			P	
7440-28-0	Thallium	1.6	U		P	
7440-62-2	Vanadium	14.1		~~UJ~~ L	P	MSL
7440-66-6	Zinc	23.3		~~UJ~~ L	P	MSL

JAC 10/6/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SD06-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-09

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 34.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	20900			P	
7440-36-0	Antimony	2.8	~~U~~	~~J~~ UL	P	MSL
7440-38-2	Arsenic	7.7		~~J~~ L	P	MSL
7440-39-3	Barium	39.4	~~B~~	J	P	
7440-41-7	Beryllium	1.3	~~B~~	J	P	
7440-43-9	Cadmium	1.4	~~U~~	UL MBL	P	
7440-70-2	Calcium	2500			P	
7440-47-3	Chromium	42.4		~~J~~ L	P	MSL
7440-48-4	Cobalt	7.7			P	
7440-50-8	Copper	23.5			P	
7439-89-6	Iron	35000			P	
7439-92-1	Lead	24.8		~~J~~ J	P	SD
7439-95-4	Magnesium	6690			P	
7439-96-5	Manganese	238		~~J~~ L	P	MSL
7439-97-6	Mercury	0.054	~~B~~	J	CV	
7440-02-0	Nickel	19.2			P	
7440-09-7	Potassium	4260			P	
7782-49-2	Selenium	2.3		~~J~~ B FBL	P	
7440-22-4	Silver	1.4	~~U~~	UL MBL	P	
7440-23-5	Sodium	9560			P	
7440-28-0	Thallium	2.8	U		P	
7440-62-2	Vanadium	52.2		~~J~~ L	P	MSL
7440-66-6	Zinc	105		~~J~~ L	P	MSL

JC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SD07-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-08

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 35.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	22400			P	
7440-36-0	Antimony	2.8	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	9.7		~~N~~ L	P	MSL
7440-39-3	Barium	41.5	~~B~~	J	P	
7440-41-7	Beryllium	1.3	~~B~~	J	P	
7440-43-9	Cadmium	1.4	~~U~~	UL MSL	P	
7440-70-2	Calcium	2660			P	
7440-47-3	Chromium	44.8		~~N~~ L	P	MSL
7440-48-4	Cobalt	7.8			P	
7440-50-8	Copper	28.0			P	
7439-89-6	Iron	39500			P	
7439-92-1	Lead	25.1		~~E~~ J	P	SD
7439-95-4	Magnesium	6820			P	
7439-96-5	Manganese	274		~~N~~ L	P	MSL
7439-97-6	Mercury	0.083	~~B~~	J	CV	
7440-02-0	Nickel	20.0			P	
7440-09-7	Potassium	4430			P	
7782-49-2	Selenium	3.6		~~N~~ B FB4	P	
7440-22-4	Silver	1.4	~~U~~	UL MBL	P	
7440-23-5	Sodium	8520			P	
7440-28-0	Thallium	2.8	U		P	
7440-62-2	Vanadium	51.1		~~N~~ L	P	MSL
7440-66-6	Zinc	110		~~N~~ L	P	MSL

JAC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS03-SD08-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-06

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 23.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	27800			P	
7440-36-0	Antimony	3.9	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	9.4		~~N~~ L	P	MSL
7440-39-3	Barium	51.4	~~B~~	J	P	
7440-41-7	Beryllium	1.6	~~B~~	B MBL	P	
7440-43-9	Cadmium	2.0	~~U~~	UL MBL	P	
7440-70-2	Calcium	2870			P	
7440-47-3	Chromium	55.1		~~N~~ L	P	MSL
7440-48-4	Cobalt	10.0			P	
7440-50-8	Copper	29.7			P	
7439-89-6	Iron	40900			P	
7439-92-1	Lead	35.5		~~E~~ J	P	SD
7439-95-4	Magnesium	8680			P	
7439-96-5	Manganese	308		~~N~~ L	P	MSL
7439-97-6	Mercury	0.067	~~B~~	J	CV	
7440-02-0	Nickel	26.6			P	
7440-09-7	Potassium	5420			P	
7782-49-2	Selenium	3.1		~~N~~ B FBL	P	
7440-22-4	Silver	2.0	~~U~~	UL MBL	P	
7440-23-5	Sodium	15000			P	
7440-28-0	Thallium	3.9	U		P	
7440-62-2	Vanadium	73.8		~~N~~ L	P	MSL
7440-66-6	Zinc	114		~~N~~ L	P	MSL

JC 10/6/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SD09-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-07

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 28.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	24400			P	
7440-36-0	Antimony	3.2	~~U~~	~~N~~ NL	P	MSL
7440-38-2	Arsenic	10.6		N L	P	MSL
7440-39-3	Barium	45.0	~~B~~	J	P	
7440-41-7	Beryllium	1.4	~~B~~	B MBL	P	
7440-43-9	Cadmium	1.6	~~U~~	UL MBL	P	
7440-70-2	Calcium	2620			P	
7440-47-3	Chromium	50.9		~~N~~ L	P	MSL
7440-48-4	Cobalt	8.3			P	
7440-50-8	Copper	27.4			P	
7439-89-6	Iron	42300			P	
7439-92-1	Lead	28.7		~~E~~ J	P	SD
7439-95-4	Magnesium	7980			P	
7439-96-5	Manganese	349		~~N~~ L	P	MSL
7439-97-6	Mercury	0.080	~~B~~	J	CV	
7440-02-0	Nickel	24.0			P	
7440-09-7	Potassium	5010			P	
7782-49-2	Selenium	2.8		~~N~~ B FBL	P	
7440-22-4	Silver	1.6	~~U~~	UL MBL	P	
7440-23-5	Sodium	14400			P	
7440-28-0	Thallium	3.2	U		P	
7440-62-2	Vanadium	61.6		~~N~~ L	P	MSL
7440-66-6	Zinc	113		~~N~~ L	P	MSL

JCC 10/6/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS03-SD10-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-05

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 40.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	20600			P	
7440-36-0	Antimony	2.5	~~U~~	~~J~~ UL	P	MSL
7440-38-2	Arsenic	8.9		~~J~~ L	P	MSL
7440-39-3	Barium	38.1	~~B~~	J	P	
7440-41-7	Beryllium	1.2	~~B~~	J	P	
7440-43-9	Cadmium	1.2	~~U~~	UL MBL	P	
7440-70-2	Calcium	2200			P	
7440-47-3	Chromium	41.6		~~J~~ L	P	MSL
7440-48-4	Cobalt	7.4			P	
7440-50-8	Copper	22.9			P	
7439-89-6	Iron	35400			P	
7439-92-1	Lead	23.3		~~B~~ J	P	SD
7439-95-4	Magnesium	6410			P	
7439-96-5	Manganese	254		~~J~~ L	P	MSL
7439-97-6	Mercury	0.083	U		CV	
7440-02-0	Nickel	21.5			P	
7440-09-7	Potassium	4160			P	
7782-49-2	Selenium	2.7		~~J~~ B FBL	P	
7440-22-4	Silver	1.2	~~U~~	UL MBL	P	
7440-23-5	Sodium	7970			P	
7440-28-0	Thallium	2.5	U		P	
7440-62-2	Vanadium	50.6		~~J~~ L	P	MSL
7440-66-6	Zinc	98.8		~~J~~ L	P	MSL

JC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SD11-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-02

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 37.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	20800			P	
7440-36-0	Antimony	2.7	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	10.3		~~N~~ L	P	MSL
7440-39-3	Barium	40.3	~~B~~	J	P	
7440-41-7	Beryllium	1.3	~~B~~	J	P	
7440-43-9	Cadmium	1.3	~~U~~	UL MBL	P	
7440-70-2	Calcium	2410			P	
7440-47-3	Chromium	42.8		~~N~~ L	P	MSL
7440-48-4	Cobalt	7.6			P	
7440-50-8	Copper	25.5			P	
7439-89-6	Iron	38400			P	
7439-92-1	Lead	26.1		~~E~~ J	P	SD
7439-95-4	Magnesium	7270			P	
7439-96-5	Manganese	238		~~N~~ L	P	MSL
7439-97-6	Mercury	0.081			CV	
7440-02-0	Nickel	19.4			P	
7440-09-7	Potassium	4370			P	
7782-49-2	Selenium	2.4		~~N~~ MBFBL	P	
7440-22-4	Silver	1.3	~~U~~	UL MBL	P	
7440-23-5	Sodium	10300			P	
7440-28-0	Thallium	2.7	U		P	
7440-62-2	Vanadium	54.4		~~N~~ L	P	MSL
7440-66-6	Zinc	108		~~N~~ L	P	MSL

JLC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SD12-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Lab Sample ID: 0907174-01

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 35.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	18800			P	
7440-36-0	Antimony	2.8	~~U~~	~~N~~ UL	P	MSL
7440-38-2	Arsenic	7.4		~~N~~ L	P	MSL
7440-39-3	Barium	37.0	~~B~~	~~J~~	P	
7440-41-7	Beryllium	1.2	~~B~~	J	P	
7440-43-9	Cadmium	1.4	~~U~~	UL MBL	P	
7440-70-2	Calcium	2450			P	
7440-47-3	Chromium	38.9		~~N~~ L	P	MSL
7440-48-4	Cobalt	6.9			P	
7440-50-8	Copper	20.9			P	
7439-89-6	Iron	31900			P	
7439-92-1	Lead	23.1		~~E~~ J	P	SD
7439-95-4	Magnesium	6530			P	
7439-96-5	Manganese	201		~~N~~ L	P	MSL
7439-97-6	Mercury	0.062	~~B~~	~~J~~	CV	
7440-02-0	Nickel	17.4			P	
7440-09-7	Potassium	3920			P	
7782-49-2	Selenium	1.7		~~N~~ B FBL	P	
7440-22-4	Silver	1.4	~~U~~	UL MBL	P	
7440-23-5	Sodium	9490			P	
7440-28-0	Thallium	2.8	U		P	
7440-62-2	Vanadium	48.6		~~N~~ L	P	MSL
7440-66-6	Zinc	103		~~N~~ L	P	MSL

JC 10609

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD12-0709

0907174-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	35.2	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:42	EPA 310.2 U
pH	7.5		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	20110	284.1	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 15:30	LLOYD KAHN

TOC acc JLC 10809

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD11-0709
0907174-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	37.3	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:42	EPA 310.2 U
pH	7.6		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	22430	268.1	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 15:38	LLOYD KAHN

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COMPUCHEM

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joe Mohn For Cathy Dover, Project Manager

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS01-SD33-0709
0907174-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
***** DEFAULT GENERAL METHOD *****								
% Solids	38.6	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:43	EPA 310.2 U
pH	6.8		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	19210	259.1	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 15:49	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS01-SD32-0709
0907174-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			COMPUCHEM					
*** DEFAULT GENERAL METHOD ***								
% Solids	30.7	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	173	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:44	EPA 310.2 J
pH	7.3		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	22910	325.7	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 15:59	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD10-0709

0907174-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	40.1	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:45	EPA 310.2 U
pH	6.8		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	21030	249.4	mg/kg dry	1	9072926	08/04/2009 15:04	08/12/2009 11:41	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD08-0709

0907174-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	23.5	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:50	EPA 310.2 U
pH	6.8		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	59350	425.5	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 16:36	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD09-0709

0907174-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	28.9	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	286	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:51	EPA 310.2
pH	7.2		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	27340	346.0	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 17:09	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD07-0709
0907174-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	35.6	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:52	EPA 310.2 U
pH	7.4		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	71570	280.9	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 17:23	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD06-0709

0907174-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	34.4	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	187	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:53	EPA 310.2 J
pH	7.5		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	36820	290.7	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 17:39	LLOYD KAHN

TOC only
JLC 10809

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS03-SD05-0709
0907174-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	53.6	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:54	EPA 310.2 U
pH	6.3		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	22560	186.6	mg/kg dry	1	9072926	08/04/2009 15:04	08/11/2009 17:47	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS01-SD31-0709
0907174-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	75.9	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:55	EPA 310.2 U
pH	7.4		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	8950	131.8	mg/kg dry	1	9072926	07/29/2009 15:04	08/11/2009 18:01	LLOYD KAHN

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joe Mohn For Cathy Dover, Project Manager

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS01-SD30-0709

0907174-14 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	80.8	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:57	EPA 310.2 U
pH	6.3		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	3556	123.8	mg/kg dry	1	9072926	07/29/2009 15:04	08/12/2009 08:50	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS07-SD03-0709 (3)
0907174-15 (Soil)

X1 corr
JAC 10/09

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
*** DEFAULT GENERAL METHOD ***								
% Solids	24.1	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 15:58	EPA 310.2 U
pH	6.6		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	159100	414.9	mg/kg dry	1	9072926	07/29/2009 15:04	08/12/2009 09:00	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/19/2009 14:25

YS07-SD04-0709
0907174-16 (Soil)

Xlcorr
JAC 101009

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			COMPUCHEM					
*** DEFAULT GENERAL METHOD ***								
% Solids	**68.0**	0.0	% by Weight	1	9081132	08/11/2009 15:52	08/12/2009 11:27	% Calculation
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9072924	08/04/2009 12:06	08/12/2009 16:02	EPA 310.2 U
pH	4.9		pH Units	1	9072925	07/29/2009 15:03	08/11/2009 14:38	EPA 9045C/9045D
Total Organic Carbon	**21400**	147.1	mg/kg dry	1	9072926	07/29/2009 15:04	08/12/2009 09:09	LLOYD KAHN

TOC only
JAC
10809

CTO-166

CompuChem
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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

№ 03868

Page 1 of 2

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Sites 1/3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Relatchy Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem Sample ID	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs 0LM04.3 40mL	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	TDS 160.1 500mL	AVS/SEM - 2 metals 4oz	Grain Size D422 8oz	Metals, Alkalinity, TOC, pH 8oz	AVS/SEM S16	pH - Sample Info (Lab Use Only): Metals	F Metals
0907175-01 (0907180-05)	YS03-SW10-0709	7/20/09	1030	SW	16	9		6				9	3	3	1					<2	<2
0907174-05 (0907181-06)	YS03-SD10-0709		1045	SO	21							9				3	6	3	0907182-05		
0907175-08 (0907180-06)	YS03-SW08-0709		1130	SW	6	3		2				3	1	1	1					<2	<2
0907174-06 (0907181-06)	YS03-SD08-0709		1145	SO	7							3				1	2	1	0907182-06		
0907175-09 (0907180-07)	YS03-SW09-0709		1200	SW	6	3		2				3	1	1	1					<2	<2
0907174-07 (0907181-07)	YS03-SD09-0709		1210	SO	7							3				1	2	1	0907182-07		
0907175-10 (0907180-08)	YS03-SW07-0709		1230	SW	6	3		2				3	1	1	1					<2	<2
0907174-08 (0907181-08)	YS03-SD07-0709		1240	SO	7							3				1	2	1	0907182-08		
0907175-11 (0907181-09)	YS03-SW06-0709		1255	SW	6	3		2				3	1	1	1					<2	<2
0907174-09 (0907181-09)	YS03-SD06-0709		1310	SO	7							3				1	2	1	0907182-09		

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments: YS03-SW/SD10 Run MS/MSD

Sample Custody

Relinquished by:	Date/Time: 7/22/09 1800	Received by:	Date/Time: 7/23/09 1045
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? AVS/SEM to CAS Grain size to CTLABS
Cust Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 5.1, 1.4, .8 °C

Samples st days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

13 076

CTO-166

CHAIN OF CUSTODY

№ 03871

Page 2 of 2

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Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: (757) 671-6245
Sampler's Name: P. Murphy

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Sites 7/3
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

VOCs OLM04.3 40ml
Metals ILM05.3 100ml
F Metals ILM05.3 100ml
TDS 160.1 500ml

Matrices

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3 40ml	Metals ILM05.3 100ml	F Metals ILM05.3 100ml	TDS 160.1 500ml	pH / Sample Info (Lab Use)
0907175-14	YS03-TB01-072209	7/22/09	155	TB	3	3						3				
0907175-13	YS03-EB01-072209	↓	1500	AQ	4	3		1				3	1			22
0907175-17 0907180-01	YS03-EB02-072209	↓	1640	AQ	6	3		2				3	1	1	1	22 22

Lab Use Only

Sample Unpacked By: R. Gurley
Sample Order Entry By: [illegible]
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

EB01 is EB for SO
EB02 is EB for SW

Sample Custody

Relinquished by:	Date/Time: 7/22/09 1800	Received by: R. Gurley	Date/Time: 7/23/09 1015
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? ~~ANALYSIS TO CTS~~ ~~GROUND TO CTS~~
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 6.1, 1.4 °C

Samples s[illegible] days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

-9°C

14 077

CTO-166

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CHAIN OF CUSTODY

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Cary, NC 27513
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№ 03873

Page 1 of 2

15 078

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Stroud
Phone #: (757) 671-8311
Sampler's Name: P. Murphy

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Sites 1/3
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices
GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs 40mL 4	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	TDS 1 @ 1 500mL	AVS/SEM 7 metals 40mL	Grain Size D422 8oz	Metals, Alkalinity, pH, TOC 8oz	AVS/SEM 50z	pH / Sample Info Use
0907175-13 0907180-11	YS03-SW05-0709	7/23/09	1030	SW	6	3		2				3	1	1	1					<2 <2
0907175-16 0907180-12	YS03-SW05F-0709		1035	SW	5	3		2				3	1	1						<2 <2
0907174-10 0907181-10	YS03-SD05-0709		1045	SO	7							3				1	2	1	0907182-10	
0907174-11 0907181-11	YS03-SD05F-0709		1050	SO	5							3				1		1	0907182-11	
0907175-11 0907180-13	YS01-SW31-0709		1140	SW	6	3		2				3	1	1	1					<2 <2
0907175-14 0907180-14	YS01-SW31F-0709		1145	SW	5	3		2				3	1	1						<2 <2
0907174-12 0907181-12	YS01-SD31-0709		1200	SO	7							3				1	2	1	0907182-12	
0907174-13	YS01-SD31F-0709		1205	SO	5							3				1		1	13	
0907174-14 0907181-13	YS01-SD30-0709		1220	SO	7							3				1	2	1	14	
0907175-23	YS01-TB01-072309	↓	1300	TB	3	3						3								

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 7/23/09 1700	Received by:	Date/Time: 7/24/09 1025
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where? AVS/SEM TO CAS GRAIN SIZE TO CTLABS
Custody Seal(s) intact? Y or N
On Ice Y or N
Cooler Temp: 3.2, 2.1, 3 C

Samples stored [illegible] days after date report mailed at no extra charge

White & Yellow copy to lab • Pink copy for customer

16
079

CTO-166

Nº 03874

Page 2 of 2

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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebecca Shaw
Phone #: (757) 671-8311
Sampler's Name: P. Murphy

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Sites 1/3
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? (Y) or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type): VOCs OLM04.3 40mL; Metals ILM05.3 1000mL; F Metals ILM05.3 1000mL; TDS 160.1 500mL; AVS/SEM 7 metals 4oz; Grain Size D422 8oz; Metals, Alkalinity, pH, TOC 8oz

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Date	Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3 40mL	Metals ILM05.3 1000mL	F Metals ILM05.3 1000mL	TDS 160.1 500mL	AVS/SEM 7 metals 4oz	Grain Size D422 8oz	Metals, Alkalinity, pH, TOC 8oz				pH/Sample Info (Lab Use) Metals	Filtered Metals
0907175-19	YS01-EB01-072309 *	7/23/09	1315	AQ	5	3		1				3	1	(*)	1	0907180-15						<2	<2
-20	YS01-EB02-072309	↓	1330	↓	4	3		1				3	1									<2	–
-21	YS01-FB01-072309		1500		5	3		1				3	1		1							<2	–
↓ -22	YS01-FB02-072309	↓	1515	↓	4	3		1				3	1									<2	–

*

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

EB01 = SW
EB02 = SD
FB01 = SW
FB02 = SD

* YS01-EB01-072309 - 1 extra 1000 mL plastic was received in cooler for Filtered metals but was not listed on COC. 7/24/09

Sample Custody

Relinquished by: [signature]	Date/Time: 7/23/09 1700	Received by: [signature]	Date/Time: 7/24/09 1025
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or (N) If yes, where? Custody Seal(s) intact? (Y) or N On Ice? (Y) or N Cooler Temp: 3.2, 2.1 °C

Samples stored … days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

№ 03876

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
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501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 1
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)-671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: C. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis (include method and bottle type): VOCs 624 40mL	Metals ILMO5.3 1000mL	F Metals ILM05.3 1000mL	TDS 160.1 500mL	AVS/SEM 7 metals 4oz	Grain Size D422 8oz	Metals, Alkalinity, pH, TOC 8oz	AVS/SEM #16	Matrices: pH / Sample Info Used: Metals / Nutrients
0907201-01 (0907203-01)	YS01-SW03-0709	7/24/09	1400	SW	6	3		2				3	1	1	1					K2K2
0907174-15 (0907181-13)	YS01-SD03-0709		1410	SD	7							3				1	2	1	0907182-15	
0907201-02 (0907203-02)	YS01-SW04-0709		1450	SW	6	3		2				3	1	1	1					K2K2
0907174-16 (0907181-14)	YS01-SD04-0709		1445	SD	7							3				1	2	1	0907182-16	
0907201-05	YS01-TB01-072109		1500	TB	3	3						3								
0907201-03	YS01-EB01-072409		1510	AQ	4	3		1				3	1							K2
0907201-04 (0907203-03)	YS01-EB02-072409	↓	1515	AQ	6	3		2				3	1	1	1					K2K2

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

EB01 = SO
EB02 = SW

Sample Custody

Relinquished by:	Date/Time: 7/24/09 1700	Received by: K. Manning	Date/Time: 7-25-09 1130
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? N If yes, where? AVS/SEM to CAS; Grain Size to CTLABS
Cu
Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 1.5 °C

Samples stored 30 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

17 080

CompuChem
a division of Liberty Analytical Corporation

QUALITY ASSURANCE NOTICE

Client CH2M Hill
Case #
Type of Analysis ~~Diss. ME~~ Diss Metals
Receipt Date 7/22/09

For some organic and/or inorganic determinations temperature preservation at 4 degrees Celsius is required for environmental samples during shipment to the laboratory and prior to analysis. A temperature tolerance range is generally allowed. Temperature of a representative sample from the shipping container is taken and recorded by the receiving clerk at the time of sample receipt. This temperature is representative of all samples contained in the cooler.

The EPA CLP program requires the laboratory make notification when the temperature exceeds 10° C.

The State of North Carolina requires that samples must be iced to above freezing but ≤ 6° C during shipment.

Notification to other clients is either client or project dependent.

Samples that are hand delivered to the laboratory immediately after collection may not meet this criteria. In these cases, the samples shall be considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

The temperature of this sample at the time of receipt was determined to be 9.1 °C filtered diss. metals were the only samples in this cooler per 6010B method, these would be stored @ ambient temperature after arrival anyway

A CompuChem customer service representative contacted the client. The client instructed the Receiving department to:

~~Hand Delivery~~/Received on ice ✓ 1 bag melted

Analyze - qualify with notice ✓

Dispose - client will resample

Supervisor Signature/ID [signature] Date 7/22/09

7/22/09

10609

QAN-R-3
060308

qanr3 – 3:8:06:jad

Metals Filtration Preparation Log

Metals Method : Filtration

CompuChem a Division of Liberty Analytical Corp.

Case/SDG: 0907180 Prepared by: C. Dover Date: 7/22/09

#	CCN (Lab ID)	Client ID	Date Rec'd	FILTRATION PERFORMED (CHECK)	pH
1	0907180-01	YS03-SW12-0709	7.22.09	✓	<2
2	-02	YS03-SW11-0709	7.22.09	✓	<2
3	-03	YS01-SW33-0709	7.22.09	✓	<2
4	-04	YS01-SW32-0709	7.22.09	✓	<2
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

C. Dover 7/22/09

Reagent Manufacturer & Lot #'s:

50% HNO_3 7661-17-3

Sample ID	Sample Alias	Sample Date	Field Blank	Equipment Blank	Trip Blank	Duplicate	SDG 1	SDG 2	SDG 3	SDG4
YS01-SW31-0709		7/23/2009	YS01-FB01-072309	YS01-EB01-072309	YS01-TB01-072309	YS01-SW31P-0709	0907175	0907180		
YS01-SW32-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS01-SW33-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS01-SD30-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309		0907174	0907181	0907182	
YS01-SD31-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309	YS01-SD31P-0709	0907174	0907181	0907182	
YS01-SD32-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS01-SD33-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS03-SW03-0709	YS01-SW03-0709	7/24/2009	YS01-FB01-072309	YS03-EB02-072409	YS03-TB01-072409		0907201	0907203		
YS03-SW04-0709	YS01-SW04-0709	7/24/2009	YS01-FB01-072309	YS03-EB02-072409	YS03-TB01-072409		0907201	0907203		
YS03-SW05-0709		7/23/2009	YS01-FB01-072309	YS01-EB01-072309	YS01-TB01-072309	YS03-SW05P-0709	0907175	0907180		
YS03-SW06-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW07-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW08-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW09-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW10-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW11-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS03-SW12-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS03-SD03-0709	YS01-SD03-0709	7/24/2009	YS01-FB02-072309	YS03-EB01-072409	YS03-TB01-072409		0907174	0907181	0907182	
YS03-SD04-0709	YS01-SD04-0709	7/24/2009	YS01-FB02-072309	YS03-EB01-072409	YS03-TB01-072409		0907174	0907181	0907182	
YS03-SD05-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309	YS03-SD05P-0709	0907174	0907181	0907182	
YS03-SD06-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD07-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD08-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD09-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD10-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD11-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS03-SD12-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS06-SW68-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409	YS06-SW68P-0809	0908016	0908017	0908036	
YS06-SW69-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW70-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW71-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW72-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW73-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509		0908016	0908017	0908036	
YS06-SW74-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509	YS06-SW74P-0809	0908016	0908017	0908036	
YS06-SW75-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509		0908016	0908017	0908036	
YS06-SW76-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SW77-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SW78-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SD68-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409	YS06-SD68P-0809	0908015	0908034	0908033	0908035
YS06-SD69-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD70-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD71-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD72-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD73-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509		0908015	0908034	0908033	0908035
YS06-SD74-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509	YS06-SD74P-0809	0908015	0908034	0908033	0908035
YS06-SD75-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509		0908015	0908034	0908033	0908035
YS06-SD76-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035
YS06-SD77-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035
YS06-SD78-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035

Equipment Blanks										
YS01-EB01-072309		7/23/2009					907175	907180		
YS01-EB02-072309		7/23/2009					907175			
YS03-EB01-072109		7/21/2009					907175			
YS03-EB01-072209		7/22/2009					907175			
YS03-EB02-072209		7/22/2009					907175	907180		
YS03-EB01-072409	YS01-EB01-072409	7/24/2009					907201			
YS03-EB02-072409	YS01-EB02-072409	7/24/2009					907201	907203		
YS06-EB02-080409		8/4/2009					908016	908017	908036	
YS06-EB01-080409		8/4/2009					908016	908036		
YS06-EB01-080509		8/5/2009					908016	908017	908036	
YS06-EB02-080509		8/5/2009					908016	908036		
YS06-EB01-080609		8/6/2009					908016	908017	908036	
YS06-EB02-080609		8/6/2009					908039	908036		
Field Blanks										
YS01-FB01-072309		7/23/2009					907175			
YS01-FB02-072309		7/23/2009					907175			
YS06-FB01-080409		8/4/2009					908016	908036		
YS06-FB02-080409		8/4/2009					908016	908036		
Trip Blanks										
YS01-TB01-072309		7/23/2009					907175			
YS03-TB01-072109		7/21/2009					907175			
YS03-TB01-072209		7/22/2009					907175			
YS03-TB01-072409	YS01-TB01-072409	7/24/2009					907201			
YS06-TB01-080409		8/4/2009					908016			
YS06-TB01-080509		8/5/2009					908016			
YS06-TB01-080609		8/6/2009					908016			

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 7/20-24/09
Received Date: 7/22-25/09
Analysis Dates: 7/31/09

Cooler Temps: 1.1-9.1°C

All holding time requirements were met. According to Region III guidelines aqueous samples received above 4°C+/-2°C are to be analyzed within 7 days from sample collection (since holding time criteria have not been established for non-aqueous samples, the same criteria has been applied); therefore samples YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709 and YS01-SD32-0709 were qualified as biased low L/UL.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial and continuing calibrations.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blank- qualifications were required. The associated QC blanks for these samples were: YS01-TB01072309, YS03-TB01-072109 (no positive results), YS03-TB01-072409 and YS03-TB01-072209 (no positive results)- trip blanks; YS01-FB01-072309 - field blank; YS01-EB01-072309, YS03-EB01-072109, YS03-EB01-072409, YS01-EB02-072309 and YS03-EB02-072209- equipment blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKLR	2-butanone	3.6J ug/Kg	2.5 ug/Kg	36 ug/Kg
	1,2,4-trichlorobenzene	2.2J	2.5	11
YS01-TB01-072309	acetone	1.9J ug/L	2.5 ug/L	19 ug/L
YS03-TB01-072409	acetone	1.6J	2.5	16
YS01-FB01-072309	acetone	4.5	2.5	45
YS01-EB01-072309	acetone	4.1	2.5	41
YS03-EB01-072109	acetone	4.7	2.5	47
YS03-EB01-072409	acetone	5.2	2.5	52
YS01-EB02-072309	acetone	4.8	2.5	48
YS03-EB02-072209	acetone	4.7	2.5	47

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all samples	acetone	B	BL
YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709, YS03-SD09-0709, YS03-SD07-0709, YS03-SD05-0709, YS01-SD31-0709, YS01-SD31P-0709, YS01-SD03-0709, YS01-SD04-0709	2-butanone	B	BL
YS03-SD12-0709	1,2,4-trichlorobenzene	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS03-SD10-0709—few compounds exhibited slightly low recoveries, no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for samples YS01-SD31-0709 and YS03-SD05-0709—comparable results exhibited, no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Ilyena Mascelloff **Date:** 10,8,09

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKLR

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Lab File ID: 9073110-BLK159 Lab Sample ID: 9073110-BLK1

Date Analyzed: 07/31/09 Time Analyzed: 1158

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972HP59

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

1,2,4 B 2-butanone

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VLRLCS	9073110-BS1	9073110-BS15	1241
02	VLRLCSD	9073110-BSD1	9073110-BSD1	1309
B-03	YS03-SD12-0709	0907174-01	0907174-0159	1345
B-04	YS03-SD11-0709	0907174-02	0907174-0259	1413
B-05	YS01-SD33-0709	0907174-03	0907174-0359	1441
06	YS01-SD32-0709	0907174-04	0907174-0459	1509
07	YS03-SD10-0709	0907174-05	0907174-0559	1537
08	YS03-SD08-0709	0907174-06	0907174-0659	1605
B-09	YS03-SD09-0709	0907174-07	0907174-0759	1633
B-10	YS03-SD07-0709	0907174-08	0907174-0859	1701
11	YS03-SD06-0709	0907174-09	0907174-0959	1729
B-12	YS03-SD05-0709	0907174-10	0907174-1059	1757
13	YS03-SD05P-0709	0907174-11	0907174-1159	1825
B-14	YS01-SD31-0709	0907174-12	0907174-1259	1853
B-15	YS01-SD31P-0709	0907174-13	0907174-1359	1921
16	YS01-SD30-0709	0907174-14	0907174-1459	1949
B-17	YS01-SD03-0709	0907174-15	0907174-1559	2017
B-18	YS01-SD04-0709	0907174-16	0907174-1659	2045
19	YS03-SD10-0709MS	9073110-MS1	9073110-MS15	2141
20	YS03-SD10-0709MSD	9073110-MSD1	9073110-MSD1	2209
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

COMMENTS: Methylene Cld 1.2J ug/Kg
2-butanone 3.6J
1,2,4-trichlorobenzene 2.2J

FORM IV VOA

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0907174
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-SD12-0709, YS03-SD11-0709, YS01-SD33-0709, YS01-SD32-0709, YS03-SD10-0709, YS03-SD08-0709, YS03-SD09-0709, YS03-SD07-0709, YS03-SD06-0709, YS03-SD05-0709, YS03-SD05P-0709, YS01-SD31-0709, YS01-SD31P-0709, YS01-SD30-0709, YS01-SD03-0709, and YS01-SD04-0709

The 16 soil sample listed above were received intact, refrigerated between 1.1°C and 9.1°C, with proper documentation, in sealed shipping containers, on July 22, 23, 24, and 25, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0907174 are included in the sample data sections.

Analysis holding time requirements were met for the samples. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in all of the samples. All of the system monitoring compounds met recovery criteria in the analysis of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration files 9G29004-CAL159 and 9G29004-CAL259. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blank met all quality control criteria. The associated Laboratory Control Samples (VLRLCS/VLRLCSD) met overall accuracy criteria. Sample YS03-SD10-0709 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
August 13, 2009

This SDG contains metals, mercury & TOC using SW-846 methods.

HOLDING TIMES

Sampling Date: 7/21-7/24
Received Date: 7/23-7/25
Prep. Dates: 7/30 ICP, 7/30 CVAA, 7/29 & 8/4 TOC
Analysis Dates: 8/5 ICP, 7/31 CVAA, 8/11 & 8/12 TOC

All holding time requirements were met. One cooler exhibited a high temp (<10) – no qualifications were required for the sediment samples.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria with the exception of 2 analytes. The recovery for lead was low but all results were >2XRL. The recovery for Se was high and positive results up to 2X the RL required qualification as biased high K. However, all Se results were flagged due to blank contamination or spike recovery issues. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBS	copper	-0.174B mg/Kg	≤ 10X MDL (0.9 mg/Kg)	L/UL	MBL
	cadmium	-0.070B mg/Kg	≤ 10X MDL (0.3 mg/Kg)	L/UL	MBL
	silver	-0.040B mg/Kg	≤ 10X MDL (0.3 mg/Kg)	L/UL	MBL
CCB	beryllium	1.0 ug/L	0.50 mg/Kg	B	MBL
YS01-FB02-072309	sodium	860BE ug/L	430 mg/kg	B	FBL
	selenium	3.6B ug/L	1.80 mg/Kg	B	FBL

Metals

Sample ID	analyte	Q Flag	Q Code
YS01-SD30-0809, YS01-SD31P-0809	copper	L	MBL
all samples	cadmium	L/UL	MBL
all samples	silver	L/UL	MBL
YS01-SD04-0809, YS01-SD30-0809, YS01-SD31-0809, YS01-SD31P-0809, YS01-SD03-0809, YS03-SD05-0809, YS03-SD05P-0809, YS03-SD09-0809, YS03-SD08-0809	beryllium	B	MBL
YS01-SD30-0809, YS01-SD31P-0809	sodium	B	FBL
YS01-SD04-0809, YS01-SD33-0809, YS01-SD32-0809, YS01-SD03-0809, YS03-SD05-0809, YS03-SD05P-0809, YS03-SD09-0809, YS03-SD11-0809, YS03-SD06-0809, YS03-SD08-0809, YS03-SD10-0809, YS03-SD12-0809, YS03-SD07-0809	selenium	B	FBL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MSD/MD for this SDG exhibited acceptable recoveries and RPDs for all analytes except antimony, arsenic, selenium, chromium, manganese, vanadium and zinc which were recovered below the SAP QC limit of 80-120. These analytes were qualified as biased low L/UL in all samples. The recoveries for Se & Mn were <30% which requires the rejection of non-detect results. However, there were no non-detect results reported for the analytes. Se was flagged as B, FBL in most of the samples due to field blank contamination. It should be noted that there is potential significant matrix interference with the detection of selenium and manganese in these sediment samples. PDS recoveries were reasonable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses exhibited acceptable %Ds for all analytes with the exception of lead at 11.7%. Pb was qualified as estimated in all samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Sample ID: YS01-SD31-0809 Duplicate Sample ID: YS01-SD31P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	716	478	40%
iron	1760	1300	30%
lead	2.1	1.9	10%
manganese	15.5	13.1	17%
zinc	5.1	3.6	34%

Comments: Flag Al & Zn as estimated J, >30% RPD.

Sample ID: YS03-SD05-0809 Duplicate Sample ID: YS03-SD05P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	5480	4860	12%
arsenic	2.4	2	18%
calcium	1480	1190	22%
chromium	11.4	10.5	8%
cobalt	2.2	2	10%
copper	6.4	5.4	17%
iron	9900	8460	16%
lead	8.8	7.3	19%
magnesium	1840	1600	14%
manganese	61.8	53.2	15%
selenium	1.2	0.97	21%
potassium	976	867	12%
sodium	3040	2440	22%
vanadium	16.6	14.1	16%
zinc	27	23.3	15%

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YS03-SD04-0809
ANALYTE: aluminum
CONCENTRATION: 2350 mg/Kg
%Solids – 68.0

Raw Data result: 17110.54 ug/L

17110.54 ug/L * 0.1L/1.07g * 1000g/1Kg *1mg/1000ug * 1/0.680 = 2351.64 mg/Kg

EPA SAMPLE ID: YS03-SD12-0809
PARAMETER: TOC
CONCENTRATION: 20110 mg/Kg dry
%Solids – 35.2

Raw Data result: 7079 mg/L

7079 mg/L * 0.000012L/12.0mg * 1000000mg/1Kg * 1/0.352 = 20111 mg/Kg

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer Cleveland **Date:** 10 / 10 / 09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907174

The indicated Sample Delivery Group (SDG) consisting of sixteen (16) solid samples was received into the laboratory information management system (LIMS) on July 22, 23, 24, and 25, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 1.1 to 9.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBS & LCSS) was found to be within acceptable ranges and field samples were prepared and analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0907174-05 ID YS03-SD10-0709S and YS03-SD10-0709SD were inside control limits for the requested analytes except antimony, arsenic, chromium, manganese, selenium, vanadium, and zinc.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0907174-05 ID YS03-SD10-0709D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0907174-05 ID YS03-SD10-0709L was performed in accordance with requirements for ICP analysis.

The adjusted sample concentration was outside control limits for the requested analytes except lead.

Control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution adjusted concentrations from the original values for all analyte concentrations greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forester for Susan Bass

Susan W. Bass
Senior Chemist
August 14, 2009

CompuChem
A Division Of
Liberty Analytical Corp.

SDG NARRATIVE
SDG # 0907174

The 16 soil samples were received intact, refrigerated with proper documentation, in sealed shipping containers, on July 22nd, 23rd, and 24th, 2009. The samples were scheduled for the requested analysis of the Wet Chemistry fraction. The samples were analyzed, in accordance with current EPA methods, for the analytes requested as per the COC, with the exceptions and/or additions requested by the client.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS & Blank) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
YS03-SD10-0709 (0907174-05) was used as the original to prepare the matrix spike and matrix spike duplicate. The associated spikes were found to be inside control limits.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Joseph Mohn
Wet Chemistry Supervisor
August 20th, 2009

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	215.50	107.8		
Antimony				60.0	60.24	100.4		
Arsenic				10.0	9.93	99.3		
Barium				200.0	197.72	98.9		
Beryllium				5.0	5.10	102.0		
Cadmium				5.0	4.99	99.8		
Calcium				2000.0	2096.38	104.8		
Chromium				10.0	9.15	91.5		
Cobalt				50.0	50.13	100.3		
Copper				25.0	24.45	97.8		
Iron				100.0	96.96	97.0		
Lead				3.0	1.59	0.0		
Magnesium				2000.0	2016.10	100.8		
Manganese				15.0	14.52	96.8		
Mercury	0.2	0.16	80.0					
Nickel				40.0	38.98	97.4		
Potassium				2000.0	1565.97	78.3		
Selenium				5.0	6.86	137.2		
Silver				10.0	9.73	97.3		
Sodium				2000.0	1957.90	97.9		
Thallium				10.0	12.92	129.2		
Vanadium				50.0	50.36	100.7		
Zinc				20.0	17.50	87.5		

53% L/UL (6) 0.6 mg/L US

K+ (10) N all fl due to spk

Control Limits: no limits have been established by EPA at this time

Flag results up to 2X RL

all samples associated

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907174

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				200.0	196.79	98.4		
Antimony				60.0	47.19	78.6		
Arsenic				10.0	7.28	72.8		
Barium				200.0	147.55	73.8		
Beryllium				5.0	3.89	77.8		
Cadmium				5.0	3.58	71.6		
Calcium				2000.0	1629.50	81.5		
Chromium				10.0	7.26	72.6		
Cobalt				50.0	38.35	76.7		
Copper				25.0	19.04	76.2		
Iron				100.0	87.50	87.5		
Lead				3.0	2.09	69.7		
Magnesium				2000.0	1592.90	79.6		
Manganese				15.0	11.02	73.5		
Nickel				40.0	30.75	76.9		
Potassium				2000.0	1269.16	63.5		
Selenium				5.0	5.11	102.2		
Silver				10.0	7.83	78.3		
Sodium				2000.0	1565.92	78.3		
Thallium				10.0	6.48	64.8		
Vanadium				50.0	38.44	76.9		
Zinc				20.0	14.30	71.5		

L/UL

L/UL

Control Limits: no limits have been established by EPA at this time

Flag results up to 2X RL

No samples associated - no analysis JAC 10/6/09

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	45.6	B	51.4	B			P
Antimony	10.0	U	-2.1	B	-1.8	B	10.0	U			P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U			P
Barium	-0.4	B	-0.4	B	-0.4	B	200.0	U			P
Beryllium	5.0	U	5.0	U	0.4	B	0.5	B			P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U			P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Chromium	1.1	B	7.0	B	10.0	U	10.0	U			P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U			P
Copper	5.0	U	5.0	U	-1.3	B	-0.9	B			P
Iron	100.0	U	100.0	U	100.0	U	100.0	U			P
Lead	-1.8	B	3.0	U	3.0	U	3.0	U			P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Manganese	10.0	U	0.8	B	10.0	U	10.0	U			P
Mercury	0.200	U	-0.110	B	0.200	U	0.200	U	0.033	U	CV
Nickel	1.3	B	4.7	B	40.0	U	40.0	U			P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Selenium	5.0	U	4.0	B	5.0	U	5.0	U			P
Silver	-0.3	B	-0.4	B	-0.8	B	-0.4	B			P
Sodium	5000.0	U	5000.0	U	248.1	B	225.9	B			P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U			P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U			P
Zinc	20.0	U	20.0	U	6.5	B	6.5	B			P

none associated

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 4	C	5	C	6	C	Preparation Blank	C	M
Aluminum			60.5	B	73.7	B	81.8	B			P
Antimony			10.0	U	10.0	U	10.0	U			P
Arsenic			10.0	U	10.0	U	10.0	U			P
Barium			200.0	U	200.0	U	-0.5	B			P
Beryllium			0.6	B	0.8	B	0.7	B			P
Cadmium			0.3	B	0.4	B	5.0	U			P
Calcium			5000.0	U	5000.0	U	5000.0	U			P
Chromium			0.9	B	0.8	B	10.0	U			P
Cobalt			5.0	U	5.0	U	5.0	U			P
Copper			-1.0	B	-1.1	B	-2.1	B			P
Iron			100.0	U	100.0	U	100.0	U			P
Lead			3.0	U	3.0	U	3.0	U			P
Magnesium			5000.0	U	5000.0	U	5000.0	U			P
Manganese			10.0	U	10.0	U	10.0	U			P
Mercury			0.200	U							CV
Nickel			40.0	U	40.0	U	40.0	U			P
Potassium			19.6	B	5000.0	U	5000.0	U			P
Selenium			5.0	U	5.0	U	5.0	U			P
Silver			-0.3	B	-0.5	B	-1.0	B			P
Sodium			274.0	B	153.0	B	5000.0	U			P
Thallium			10.0	U	10.0	U	10.0	U			P
Vanadium			0.5	B	0.6	B	20.0	U			P
Zinc			6.7	B	6.4	B	20.0	U			P

YS03SD10

YS03-SD12
↓ SD11
YS01-SD33
SD32
SD08
SD09
SD07
SD06

YS03 - SD05
↓ SD05P
YS01-SD31
SD31P
SD30
SD03
SD04

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			109.1	B							P
Antimony			10.0	U							P
Arsenic			10.0	U							P
Barium			-0.4	B							P
Beryllium			1.0	B							P
Cadmium			5.0	U							P
Calcium			5000.0	U							P
Chromium			10.0	U							P
Cobalt			5.0	U							P
Copper			-2.1	B							P
Iron			100.0	U							P
Lead			3.0	U							P
Magnesium			5000.0	U							P
Manganese			10.0	U							P
Nickel			40.0	U							P
Potassium			5000.0	U							P
Selenium			5.0	U							P
Silver			-1.0	B							P
Sodium			5000.0	U							P
Thallium			10.0	U							P
Vanadium			20.0	U							P
Zinc			20.0	U							P

YS03-SD05
SD05P
YS01-SD31
SD31P
SD30
SD03
SD04

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M	
Aluminum	200.0	U	200.0	U	200.0	U			20.000	U	P	
Antimony	10.0	U	10.0	U	10.0	U			1.000	U	P	
Arsenic	10.0	U	10.0	U	10.0	U			1.000	U	P	
Barium	200.0	U	-0.5	B	200.0	U			20.000	U	P	
Beryllium	5.0	U	5.0	U	5.0	U			0.500	U	P	
Cadmium	-0.3	B	-0.4	B	-0.3	B			-0.070	B	P	L/UL
Calcium	5000.0	U	5000.0	U	5000.0	U			500.000	U	P	
Chromium	-0.7	B	-0.9	B	-0.8	B			1.000	U	P	
Cobalt	5.0	U	5.0	U	5.0	U			0.500	U	P	
Copper	-0.9	B	5.0	U	-1.8	B			-0.174	B	P	L/UL
Iron	100.0	U	100.0	U	100.0	U			10.000	U	P	
Lead	3.0	U	3.0	U	3.0	U			0.300	U	P	
Magnesium	5000.0	U	5000.0	U	30.8	B			500.000	U	P	
Manganese	10.0	U	-0.4	B	10.0	U			1.000	U	P	
Nickel	40.0	U	40.0	U	40.0	U			4.000	U	P	
Potassium	5000.0	U	5000.0	U	5000.0	U			500.000	U	P	
Selenium	5.0	U	5.0	U	5.0	U			0.500	U	P	
Silver	5.0	U	5.0	U	5.0	U			-0.040	B	P	L/UL
Sodium	5000.0	U	5000.0	U	5000.0	U			500.000	U	P	
Thallium	10.0	U	10.0	U	10.0	U			1.000	U	P	
Vanadium	20.0	U	20.0	U	20.0	U			2.000	U	P	
Zinc	20.0	U	20.0	U	20.0	U			2.000	U	P	

no field samples associated

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-SD10-0709S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 68.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Antimony	75 - 125	31.7204		1.4706	U	73.53	43.1	N	P	L/UL
Arsenic	75 - 125	12.5467		8.9197		5.88	61.7	N	P	↓
Barium	75 - 125	318.8766		38.0977	B	294.12	95.5		P	
Beryllium	75 - 125	7.5827		1.1877	B	7.35	87.0		P	
Cadmium	75 - 125	6.4118		0.7353	U	7.35	87.2		P	
Chromium	75 - 125	54.3773		41.6189		29.41	43.4	N	P	L/UL
Cobalt	75 - 125	73.7296		7.3694		73.53	90.2		P	
Copper	75 - 125	56.5921		22.9393		36.76	91.5		P	
Lead		16.2795		23.3465		2.94	-240.4		P	
Manganese	75 - 125	217.2916		254.4267		73.53	-50.5	N	P	L/R
Mercury	75 - 125	0.1733		0.0333	U	0.17	101.9		CV	
Nickel	75 - 125	82.7983		21.4799		73.53	83.4		P	
Selenium	75 - 125	3.0478		2.7381		1.47	21.1	N	P	L/R
Silver	75 - 125	6.4983		0.7353	U	7.35	88.4		P	
Thallium	75 - 125	5.8687		1.4706	U	7.35	79.8		P	OK
Vanadium	75 - 125	105.9315		50.6098		73.53	75.2		P	L/UL
Zinc	75 - 125	126.7838		98.7559		73.53	38.1	N	P	L/UL

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-SD10-0709SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 68.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Antimony	75 - 125	29.8804		1.4706	U	73.53	40.6	N	P	L/UL
Arsenic	75 - 125	10.5109		8.9197		5.88	27.1	N	P	
Barium	75 - 125	313.8663		38.0977	B	294.12	93.8		P	
Beryllium	75 - 125	7.4946		1.1877	B	7.35	85.8		P	
Cadmium	75 - 125	6.3494		0.7353	U	7.35	86.4		P	
Chromium	75 - 125	54.8196		41.6189		29.41	44.9	N	P	L/UL
Cobalt	75 - 125	72.8305		7.3694		73.53	89.0		P	
Copper	75 - 125	52.3863		22.9393		36.76	80.1		P	
Lead		16.6988		23.3465		2.94	-226.1		P	
Manganese	75 - 125	217.9309		254.4267		73.53	-49.6	N	P	L/R
Mercury	75 - 125	0.1850		0.0333	U	0.17	108.8		CV	
Nickel	75 - 125	81.7039		21.4799		73.53	81.9		P	
Selenium	75 - 125	2.2545		2.7381		1.47	-32.9	N	P	L/R
Silver	75 - 125	6.4911		0.7353	U	7.35	88.3		P	
Thallium	75 - 125	6.1213		1.4706	U	7.35	83.3		P	
Vanadium	75 - 125	104.4978		50.6098		73.53	73.3	N	P	L/UL
Zinc	75 - 125	126.6928		98.7559		73.53	38.0	N	P	L/UL

Comments:

SW846 - METALS

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-SD10-0709A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony		99.72		10.00	U	120.0	83.1		P
Arsenic		52.50		35.77		20.0	83.6		P
Chromium		182.38		166.89		20.0	77.4		P
Manganese		1033.78		1020.25		30.0	45.1		P
Selenium		18.88		10.98		10.0	79.0		P
Vanadium		287.20		202.95		100.0	84.2		P
Zinc		423.77		396.01		40.0	69.4		P

see MS/MSD

Comments:

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-SD10-0709L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907174

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	82439.47		88389.05		7.2		P
Antimony	10.00	U	50.00	U			P
Arsenic	35.77		37.00	B	3.4		P
Barium	152.77	B	157.45	B	3.1		P
Beryllium	4.76	B	7.61	B	59.9		P
Cadmium	5.00	U	25.00	U			P
Calcium	8811.76		9596.64	B	8.9		P
Chromium	166.89		174.16		4.4		P
Cobalt	29.55		32.36		9.5		P
Copper	91.99		86.48		6.0		P
Iron	141877.70		151345.20		6.7		P
Lead	93.62		104.58		11.7	E	P
Magnesium	25686.55		27806.87		8.3		P
Manganese	1020.25		1071.72		5.0		P
Mercury	0.20	U	1.00	U			CV
Nickel	86.13		89.36	B	3.8		P
Potassium	16676.56		15018.90	B	9.9		P
Selenium	10.98		25.00	U	100.0		P
Silver	5.00	U	25.00	U			P
Sodium	31965.17		33409.18		4.5		P
Thallium	10.00	U	50.00	U			P
Vanadium	202.95		211.24		4.1		P
Zinc	396.01		409.25		3.3		P

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 19, 2009
SDG # 0907175 and 0907180, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # 0907175 and 0907180. The data validation was performed in accordance with the SW-846 8260B for volatiles, SW-846 Methods 6010B and 7470A for total and dissolved metals. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals
YS01-EB01-072309	0907175-19	water	X	X	X
YS01-EB02-072309	0907175-20	water	X	X	X
YS01-FB01-072309	0907175-21	water	X	X	
YS01-FB02-072309	0907175-22	water	X	X	
YS01-SW31-0709	0907175-17	water	X	X	X
YS01-SW31P-0709	0907175-18	water	X	X	X
YS01-SW32-0709	0907175-04	water	X	X	X
YS01-SW33-0709	0907175-03	water	X	X	X
YS01-TB01-072309	0907175-23	water	X		
YS03-EB01-072109	0907175-05	water	X	X	
YS03-EB01-072209	0907175-13	water	X	X	
YS03-EB02-072209	0907175-12	water	X	X	
YS03-SW05-0709	0907175-15	water	X	X	X
YS03-SW05P-0709	0907175-16	water	X	X	X
YS03-SW06-0709	0907175-11	water	X	X	X
YS03-SW07-0709	0907175-10	water	X	X	X
YS03-SW08-0709	0907175-08	water	X	X	X
YS03-SW09-0709	0907175-09	water	X	X	X
YS03-SW10-0709	0907175-07	water	X	X	X
YS03-SW11-0709	0907175-02	water	X	X	X
YS03-SW12-0709	0907175-01	water	X	X	X
YS03-TB01-072109	0907175-06	water	X		
YS03-TB01-072209	0907175-14	water	X		
YS03-SW10-0709 MS	0907175-07MS	water	X	X	X
YS03-SW10-0709 MSD	0907175-07MSD	water	X	X	X

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The following quality control samples were provided with this SDG: sample YS01-TB01-072309, YS03-TB01-072109 and YS03-TB01-072209-trip blanks; samples YS01-EB01-072309, YS01-EB02-072309, YS03-EB01-072109, YS03-EB01-072209 and YS03-EB02-072209-equipment blanks; samples YS01-FB01-072309 and YS01-FB02-072309-field blanks; sample YS01-SW31P-0709-field duplicate of sample YS01-SW31-0709; and sample YS03-SW05P-0709-field duplicate of sample YS03-SW05-0709.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition
- Technical Holding Times *
- GC/MS Tuning *
- GC Performance *
- Initial/Continuing Calibrations
- RL Standards
- Interference Check Sample *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs
- Post Digestion Spike Recoveries *
- Serial Dilutions
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

Several samples were qualified as biased low due to a high sample receipt temperature.

The initial calibrations exhibited low RRF values that required positive values to be estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Total & Dissolved Metals

The RL standards associated exhibited recoveries that required qualification in the associated samples.

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The matrix duplicate analysis associated with total metals analysis exhibited a non-compliant RPD for one analyte. Qualification was required in the associated field samples.

The associated serial dilution sample exhibited a %D greater than 10% for one total metals analyte and two dissolved metals analytes that required qualification as estimated J/UJ in the field samples.

One of the field duplicate pairs analyzed for the total metals exhibited non-compliant RPDs for two analytes that required qualifications as estimated J.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required. Please note that forms in the data package contained the incorrect ID for two samples. YS01-SW32-0709 & YS01-SW33-0709 were referred to as YS03-SW32-0709 and YS03-SW33-0709 throughout the total and dissolved metals data packages. The validator has corrected the Form 1s contained in this validation report but did not request corrections from the laboratory for this error.

Sample Condition

VOA

According to Region III guidelines aqueous samples received above 4°C+/-2°C are to be analyzed within 7 days from sample collection; therefore samples YS03-SW12-0709, YS03-SW11-0709, YS01-SW33-0709, YS01-SW32-0709, YS03-EB01-072109 and YS03-TB01-072109 were qualified as biased low L/UL, qualifier code: OT.

Technical Holding Times

According to chain of custody records, sampling was performed on 7/20-23/09 and samples were received at the laboratory 7/22-24/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 7/29/09	acetone 2-butanone	0.0297 0.0484	all samples	L/R	ICL

RL Standards

Total & Dissolved Metals

The RL standards associated with samples in this SDG exhibited non-compliant recoveries for three analytes. A summary of these non-compliances and affected samples are noted in the following table.

Standard ID	Analyte(s)	%R	Samples	Q Flag	Q Code
RL Standard	lead*	53%	all total & dissolved metals samples	L/UL	OT
	selenium	137.2%	YS01-FB02-072309 T, YS03-SW06-0709 D	K	OT

*Please note that in total and dissolved metals field samples lead was flagged due to negative blank contamination with a MBL qualifier code.

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS01-TB01072309	acetone	1.9J ug/L	2.5 ug/L	19 ug/L
YS01-FB01-072309	acetone	4.5	2.5	45
YS01-EB01-072309	acetone	4.1	2.5	41
YS03-EB02-072209	acetone	4.7	2.5	47

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-SW31-0709, YS01-SW31P-0709, YS01-SW32-0709, YS01-SW33-0709. YS03-SW05-0709, YS03-SW05P-0709, YS03-SW06-0709, YS03-SW07-0709, YS03-SW08-0709, YS03-SW09-0709, YS03-SW10-0709, YS03-SW11-0709, YS03-SW12-0709	acetone	B	BL

Total and Dissolved Metals

Blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	2.303B ug/L	11.515 ug/L	B	MBL
	arsenic	-4.370B ug/L	≤ 10X MDL (24 ug/L)	L/UL	MBL
	cadmium	-0.539B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	cobalt	-0.688B ug/L	≤ 10X MDL (6 ug/L)	L/UL	MBL
	copper	-0.932B ug/L	≤ 10X MDL (9 ug/L)	L/UL	MBL
	nickel	-1.926B ug/L	≤ 10X MDL (11 ug/L)	L/UL	MBL
	silver	-1.183B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	thallium	-4.940B ug/L	≤ 10X MDL (37 ug/L)	L/UL	MBL
ICB/CCB – total metals	chromium	1.1B ug/L	5.5 ug/L	B	MBL
	beryllium	0.6B ug/L	3.0 ug/L	B	MBL
	zinc	6.7B ug/L	32.5 ug/L	B	MBL
	nickel	1.3B ug/L	6.5 ug/L	B	MBL
YS01-EB01-072309	mercury	0.17B ug/L	0.85 ug/L	B	EBL

Associated samples and required qualifications are noted in the following table.

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS01-SW31-0709, YS01-SW31P-0709	lead	B	MBL
all field samples	arsenic	L/UL	MBL
all field samples	cadmium	L/UL	MBL
all field samples	cobalt	L/UL	MBL
all field samples	copper	L/UL	MBL
all field samples	nickel	L/UL	MBL
all field samples	silver	L/UL	MBL
all field samples	thallium	L/UL	MBL
all field samples	chromium	B	MBL
YS01-SW31P-0709	nickel	B	MBL
all field samples except YS03-SW08-0709	zinc	B	MBL
all field samples	beryllium	B	MBL
YS01-SW31-0709, YS03-SW05P-0709	mercury	B	EBL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	aluminum	82.114B ug/L	410.57 ug/L	B	MBL
	beryllium	0.732B ug/L	3.66 ug/L	B	MBL
	copper	-2.838B ug/L	≤ 10X MDL (9 ug/L)	L/UL	MBL
	silver	-1.118 ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
ICB/CCB – dissolved metals	vanadium	0.5B ug/L	2.5 ug/L	B	MBL
	thallium	4.7B ug/L	23.5 ug/L	B	MBL
YS01-EB01-072309	thallium	4.3B ug/L	21.5 ug/L	B	EBL
YS03-EB02-072209	thallium	6.9B ug/L	34.5 ug/L	B	EBL

Associated samples and required qualifications are noted in the following table.

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all field samples	aluminum	B	MBL
all field samples	beryllium	B	MBL
all field samples	copper	L/UL	MBL
all field samples	silver	L/UL	MBL
YS03-SW11-0709, YS03-SW10-0709, YS03-SW09-0709, YS01-SW31P-0709	vanadium	B	MBL
YS01-SW31-0709, YS01-SW31P-0709	thallium	B	MBL
YS03-SW05-0709, YS01-SW33-0709, YS01-SW32-0709, YS03-SW12-0709, YS03-SW06-0709, YS03-SW08-0709, YS03-SW11-0709	thallium	B	EBL

Matrix Duplicate RPDs

Total & Dissolved Metals

The matrix duplicate analysis of sample YS03-SW10-0709 exhibited a non-compliant RPD (>20%) for one analyte. Specific action is noted in the following table.

MD	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS03-SW10-0709	aluminum	all total metals field samples	60.1	J/UJ	MDP

Serial Dilutions

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS03-SW10-0709	sodium	all total metals field samples	38.7%	J/UJ	SD
YS03-SW10-0709	barium	all dissolved metals field samples	10.1%	J/UJ	SD
	potassium		18.0%		

Field Duplicate

Total and Dissolved Metals

One of the field duplicate pairs submitted in this SDG exhibited non-compliant RPDs for two analytes. Specific action is noted in the following table.

FD Pair	Analytes	RPD	Q Flag	Q Code
YS01-SW31-0709 T, YS01-SW31P-0709 T	aluminum	70%	J	FD
	iron	76%		

*Al was flagged J/UJ due to high matrix dup RPD with the MDP qualifier code.

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
YS03-SW12-0709, YS03-SW11-0709, YS01-SW33-0709, YS01-SW32-0709, YS03-EB01-072109, YS03-TB01-072109	all results	+/-	L/UL	OT
all samples	acetone 2-butanone	+/-	L/R	ICL
YS01-SW31-0709, YS01-SW31P-0709, YS01-SW32-0709, YS01-SW33-0709, YS03-SW05-0709, YS03-SW05P-0709, YS03-SW06-0709, YS03-SW07-0709, YS03-SW08-0709, YS03-SW09-0709, YS03-SW10-0709, YS03-SW11-0709, YS03-SW12-0709	acetone	+	B	BL

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
all samples	lead*	+/-	L/UL	OT
YS01-FB02-072309	selenium	+	K	OT
YS01-SW31-0709, YS01-SW31P-0709	lead	+ up to action limit	B	MBL
all field samples	arsenic	+/- up to 10X MDL	L/UL	MBL
all field samples	cadmium	+/- up to 10X MDL	L/UL	MBL
all field samples	cobalt	+/- up to 10X MDL	L/UL	MBL
all field samples	copper	+/- up to 10X MDL	L/UL	MBL
all field samples	nickel*	+/- up to 10X MDL	L/UL	MBL
all field samples	silver	+/- up to 10X MDL	L/UL	MBL
all field samples	thallium	+/- up to 10X MDL	L/UL	MBL
all field samples	chromium	+ up to action limit	B	MBL
YS01-SW31P-0709	nickel	+ up to action limit	B	MBL
all field samples except YS03-SW08-0709	zinc	+ up to action limit	B	MBL
all field samples	beryllium	+ up to action limit	B	MBL
YS01-SW31-0709, YS03-SW05P-0709	mercury	+ up to action limit	B	EBL
all field samples	aluminum	+/-	J/UJ	MDP
all field samples	sodium	+/-	J/UJ	SD
YS01-SW31-0709, YS01-SW31P-0709	aluminum* iron	+	J	FD
all samples	all analytes	+B	J	

*Please note that lead was flagged B in two samples and nickel was flagged B in one sample due to positive blank contamination with a MBL qualifier code. Please note that aluminum was flagged J/UJ due to matrix duplicate issues with an MDP qualifier code.

Summary of Data Qualifications

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
all samples	lead	+/-	L/UL	OT
YS03-SW06-0709	selenium	+	K	OT
all field samples	aluminum	+ up to action limit	B	MBL
all field samples	beryllium	+ up to action limit	B	MBL
all field samples	copper	+/- up to 10X MDL	L/UL	MBL
all field samples	silver	+/- up to 10X MDL	L/UL	MBL
YS03-SW11-0709, YS03-SW10-0709, YS03-SW09-0709, YS01-SW31P-0709	vanadium	+ up to action limit	B	MBL
YS01-SW31-0709, YS01-SW31P-0709	thallium	+ up to action limit	B	MBL
YS03-SW05-0709, YS01-SW33-0709, YS01-SW32-0709, YS03-SW12-0709, YS03-SW06-0709, YS03-SW08-0709, YS03-SW11-0709	thallium	+ up to action limit	B	EBL
all field samples	barium potassium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
1-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1971

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.1	L, ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 100509

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-EB0
1-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1971

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-EB0
2-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2071

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.8	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

10/6/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-EB0
2-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2071

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-FB0
1-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2171

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.3	LICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100501

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-FB0
1-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2171

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-FB0
2-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2271

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.5	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

10/08/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-FB0
2-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2271

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW31-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1771

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.12	J
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.11	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	7.3	B,BR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 100509

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW31-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1771

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW31P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1871

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.10	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.3	B, PBL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100504

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW31P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1871

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW32-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0471

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
75-71-8	Dichlorodifluoromethane	0.50	U	UL, OT
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.12	J	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	UL
67-64-1	Acetone	6.8		B, BL
79-20-9	Methyl acetate	0.50	U	UL OT
75-09-2	Methylene Chloride	0.50	U	
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	2.5	U	RICL
67-66-3	Chloroform	0.50	U	UL OT
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.50	U	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

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LM100504

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW32-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0471

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U UL,OT
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW33-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0371

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U UL,0T
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.5	B
79-20-9	Methyl acetate	0.50	U UL,0T
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U UL,0T
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SW33-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0371

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	0.50	U	UL,OT
108-90-7	Chlorobenzene	0.50	U	
100-41-4	Ethylbenzene	0.50	U	
108-38-3	m,p-Xylene	1.0	U	
95-47-6	o-Xylene	0.50	U	
100-42-5	Styrene	0.50	U	
75-25-2	Bromoform	0.50	U	
98-82-8	Isopropyl Benzene	0.50	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	
541-73-1	1,3-Dichlorobenzene	0.50	U	
106-46-7	1,4-Dichlorobenzene	0.50	U	
95-50-1	1,2-Dichlorobenzene	0.50	U	
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U	
120-82-1	1,2,4-Trichlorobenzene	0.50	U	
540-59-0	1,2-Dichloroethene (total)	0.50	U	
1330-20-7	Xylene (total)	0.50	U	
110-82-7	Cyclohexane	0.50	U	
108-87-2	Methylcyclohexane	0.50	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2371

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.9	~~J~~ L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-072309

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-2371

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-EB0
1-072109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0571

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U VL,OT
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.7	L ICL
79-20-9	Methyl acetate	0.50	U VL,OT
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U R ICL
67-66-3	Chloroform	0.50	U VL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-EB0
1-072109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0571

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	0.50	U	UL,OT
108-90-7	Chlorobenzene	0.50	U	
100-41-4	Ethylbenzene	0.50	U	
108-38-3	m,p-Xylene	1.0	U	
95-47-6	o-Xylene	0.50	U	
100-42-5	Styrene	0.50	U	
75-25-2	Bromoform	0.50	U	
98-82-8	Isopropyl Benzene	0.50	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	
541-73-1	1,3-Dichlorobenzene	0.50	U	
106-46-7	1,4-Dichlorobenzene	0.50	U	
95-50-1	1,2-Dichlorobenzene	0.50	U	
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U	
120-82-1	1,2,4-Trichlorobenzene	0.50	U	
540-59-0	1,2-Dichloroethene (total)	0.50	U	
1330-20-7	Xylene (total)	0.50	U	
110-82-7	Cyclohexane	0.50	U	
108-87-2	Methylcyclohexane	0.50	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-EB0
1-072209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1371

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.8	LJCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RJCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-EB0
1-072209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1371

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-EB0
2-072209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1271

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.7	LICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100%

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-EB0
2-072209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1271

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1571

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.14	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.0	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100 DM

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW05-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1571

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1671

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.13	J
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.11	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	7.1	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW05P-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1671

Level: (low/med) LOW Date Received: 07/24/09

% Moisture: not dec. _____ Date Analyzed: 08/01/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW06-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1171

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.14	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.1	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100504

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW06-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1171

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW07-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1071

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.13	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.8	b,BR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100509

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW07-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1071

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW08-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0871

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.8	B,PBL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

10/30/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW08-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0871

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW09-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0971

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.11	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.7	B,RR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100501

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW09-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0971

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW10-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0771

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.3	BR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.12	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW10-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0771

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW11-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0271

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
75-71-8	Dichlorodifluoromethane	0.50	U	UL,OT
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	4.9		B,BR
79-20-9	Methyl acetate	0.50	U	UL,OT
75-09-2	Methylene Chloride	0.50	U	
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	2.5	U	RIC
67-66-3	Chloroform	0.50	U	UL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.50	U	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW11-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0271

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U VL,01
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

10/05/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW12-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0171

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
75-71-8	Dichlorodifluoromethane	0.50	U	UL,OT
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	5.9		B,BR
79-20-9	Methyl acetate	0.50	U	UL,OT
75-09-2	Methylene Chloride	0.50	U	
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	2.5	U	RICL
67-66-3	Chloroform	0.50	U	UL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.10	J	L,OT
10061-02-6	trans-1,3-Dichloropropene	0.50	U	UL,OT
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW12-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0171

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	0.50	U	UL,DT
108-90-7	Chlorobenzene	0.50	U	
100-41-4	Ethylbenzene	0.50	U	
108-38-3	m,p-Xylene	1.0	U	
95-47-6	o-Xylene	0.50	U	
100-42-5	Styrene	0.50	U	
75-25-2	Bromoform	0.50	U	
98-82-8	Isopropyl Benzene	0.50	U	
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U	
541-73-1	1,3-Dichlorobenzene	0.50	U	
106-46-7	1,4-Dichlorobenzene	0.50	U	
95-50-1	1,2-Dichlorobenzene	0.50	U	
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U	
120-82-1	1,2,4-Trichlorobenzene	0.50	U	
540-59-0	1,2-Dichloroethene (total)	0.50	U	
1330-20-7	Xylene (total)	0.50	U	
110-82-7	Cyclohexane	0.50	U	
108-87-2	Methylcyclohexane	0.50	U	

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-TB0
1-072109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0671

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
75-71-8	Dichlorodifluoromethane	0.50	U	UL,OT
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	2.5	U	RICL
79-20-9	Methyl acetate	0.50	U	UL,OT
75-09-2	Methylene Chloride	0.50	U	
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	2.5	U	RICL
67-66-3	Chloroform	0.50	U	UL,OT
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.50	U	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

WR 100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-TB0
1-072109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-0671

Level: (low/med) LOW Date Received: 07/22/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

VL,DT

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-TB0
1-072209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1471

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ RICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

LMS 100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-TB0
1-072209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 0907175-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907175-1471

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 07/31/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW1
0-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 9080511-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9080511-MS171

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	4.4	
74-87-3	Chloromethane	6.3	
75-01-4	Vinyl Chloride	6.3	
74-83-9	Bromomethane	7.2	
75-00-3	Chloroethane	6.6	
75-69-4	Trichlorofluoromethane	7.4	
75-35-4	1,1-Dichloroethene	4.4	
75-15-0	Carbon disulfide	4.5	
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.4	
67-64-1	Acetone	25	
79-20-9	Methyl acetate	5.5	
75-09-2	Methylene Chloride	4.4	
156-60-5	trans-1,2-Dichloroethene	4.6	
1634-04-4	Methyl-tert-butyl ether	4.5	
75-34-3	1,1-Dichloroethane	4.8	
156-59-2	cis-1,2-Dichloroethene	4.8	
78-93-3	2-butanone	23	
67-66-3	Chloroform	4.9	
71-55-6	1,1,1-Trichloroethane	4.4	
56-23-5	Carbon Tetrachloride	4.3	
71-43-2	Benzene	4.4	
107-06-2	1,2-Dichloroethane	4.7	
79-01-6	Trichloroethene	4.2	
78-87-5	1,2-Dichloropropane	4.6	
75-27-4	Bromodichloromethane	4.6	
10061-01-5	cis-1,3-Dichloropropene	4.2	
108-10-1	4-Methyl-2-pentanone	22	
108-88-3	Toluene	4.2	
10061-02-6	trans-1,3-Dichloropropene	4.5	
79-00-5	1,1,2-Trichloroethane	4.8	
127-18-4	Tetrachloroethene	4.2	
591-78-6	2-hexanone	22	
124-48-1	Dibromochloromethane	4.6	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SW1
0-0709MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 9080511-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9080511-MS171

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	4.7	
108-90-7	Chlorobenzene	4.3	
100-41-4	Ethylbenzene	4.0	
108-38-3	m,p-Xylene	7.9	
95-47-6	o-Xylene	4.1	
100-42-5	Styrene	3.8	
75-25-2	Bromoform	4.6	
98-82-8	Isopropyl Benzene	4.2	
79-34-5	1,1,2,2-Tetrachloroethane	4.2	
541-73-1	1,3-Dichlorobenzene	4.1	
106-46-7	1,4-Dichlorobenzene	4.1	
95-50-1	1,2-Dichlorobenzene	4.3	
96-12-8	1,2-Dibromo-3-Chloropropane	3.7	
120-82-1	1,2,4-Trichlorobenzene	4.1	
540-59-0	1,2-Dichloroethene (total)	9.3	
1330-20-7	Xylene (total)	13	
110-82-7	Cyclohexane	3.8	
108-87-2	Methylcyclohexane	3.9	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-SW1
0-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 9080511-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9080511-MSD171

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.0	
74-87-3	Chloromethane	6.4	
75-01-4	Vinyl Chloride	6.5	
74-83-9	Bromomethane	7.0	
75-00-3	Chloroethane	6.8	
75-69-4	Trichlorofluoromethane	7.1	
75-35-4	1,1-Dichloroethene	4.9	
75-15-0	Carbon disulfide	4.8	
76-13-1	1,1,2-trichloro-1,2,2-triflu	4.8	
67-64-1	Acetone	27	
79-20-9	Methyl acetate	5.5	
75-09-2	Methylene Chloride	4.7	
156-60-5	trans-1,2-Dichloroethene	5.0	
1634-04-4	Methyl-tert-butyl ether	5.1	
75-34-3	1,1-Dichloroethane	5.2	
156-59-2	cis-1,2-Dichloroethene	5.1	
78-93-3	2-butanone	25	
67-66-3	Chloroform	5.4	
71-55-6	1,1,1-Trichloroethane	4.7	
56-23-5	Carbon Tetrachloride	4.5	
71-43-2	Benzene	4.7	
107-06-2	1,2-Dichloroethane	5.1	
79-01-6	Trichloroethene	4.6	
78-87-5	1,2-Dichloropropane	5.1	
75-27-4	Bromodichloromethane	4.9	
10061-01-5	cis-1,3-Dichloropropene	4.5	
108-10-1	4-Methyl-2-pentanone	25	
108-88-3	Toluene	4.6	
10061-02-6	trans-1,3-Dichloropropene	5.1	
79-00-5	1,1,2-Trichloroethane	5.2	
127-18-4	Tetrachloroethene	4.4	
591-78-6	2-hexanone	25	
124-48-1	Dibromochloromethane	5.0	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-SW1
0-0709MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix: (soil/water) WATER Lab Sample ID: 9080511-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9080511-MSD171

Level: (low/med) LOW Date Received: 07/23/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.0	
108-90-7	Chlorobenzene	4.6	
100-41-4	Ethylbenzene	4.3	
108-38-3	m,p-Xylene	8.4	
95-47-6	o-Xylene	4.4	
100-42-5	Styrene	4.1	
75-25-2	Bromoform	5.2	
98-82-8	Isopropyl Benzene	4.3	
79-34-5	1,1,2,2-Tetrachloroethane	4.7	
541-73-1	1,3-Dichlorobenzene	4.3	
106-46-7	1,4-Dichlorobenzene	4.3	
95-50-1	1,2-Dichlorobenzene	4.7	
96-12-8	1,2-Dibromo-3-Chloropropane	4.1	
120-82-1	1,2,4-Trichlorobenzene	4.7	
540-59-0	1,2-Dichloroethene (total)	10	
1330-20-7	Xylene (total)	14	
110-82-7	Cyclohexane	3.8	
108-87-2	Methylcyclohexane	4.0	

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-SW31-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-17

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1440		~~J~~	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UL	P	MDL
7440-39-3	Barium	36.8	~~B~~	J	P	
7440-41-7	Beryllium	0.47	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	216000			P	
7440-47-3	Chromium	2.1	~~B~~	B	P	MBL
7440-48-4	Cobalt	0.86	~~B~~	L	P	MBL
7440-50-8	Copper	9.6			P	
7439-89-6	Iron	2240			P	
7439-92-1	Lead	2.5	~~B~~	B	P	MBL
7439-95-4	Magnesium	624000			P	
7439-96-5	Manganese	213			P	
7439-97-6	Mercury	0.12	~~B~~	B	CV	EBL
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	291000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4850000		~~BD~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	5.9	~~B~~	J	P	
7440-66-6	Zinc	23.2		B	P	MBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SW31P-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-18

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2980		~~J~~	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UL	P	MBL
7440-39-3	Barium	41.1	~~B~~	J	P	
7440-41-7	Beryllium	0.75	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	4.9	~~B~~	B	P	MBL
7440-48-4	Cobalt	1.9	~~B~~	L	P	MBL
7440-50-8	Copper	2.3	~~B~~	L	P	MBL
7439-89-6	Iron	4990			P	
7439-92-1	Lead	5.2		B	P	MBL
7439-95-4	Magnesium	641000			P	
7439-96-5	Manganese	235			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	2.0	~~B~~	B	P	MBL
7440-09-7	Potassium	312000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4970000		~~BD~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	9.4	~~B~~	J	P	
7440-66-6	Zinc	20.1		B	P	MBL

JLC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SW32-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-04

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	761		~~J~~	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UL	P	MBL
7440-39-3	Barium	28.8	~~B~~	J	P	
7440-41-7	Beryllium	0.40	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	229000			P	
7440-47-3	Chromium	1.3	~~B~~	B	P	MBL
7440-48-4	Cobalt	0.91	~~B~~	L	P	MBL
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	903			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	726000		~~B~~	P	
7439-96-5	Manganese	86.5			P	
7439-97-6	Mercury	0.10	~~B~~	J	CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	332000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5280000		~~B~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	4.4	~~B~~	J	P	
7440-66-6	Zinc	6.1	~~B~~	B	P	MBL

JVC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SW33-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-03

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	680		~~J~~ J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UJ	P	MBL
7440-39-3	Barium	27.1	~~B~~	J	P	
7440-41-7	Beryllium	0.38	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	229000			P	
7440-47-3	Chromium	0.67	~~B~~	B	P	MBL
7440-48-4	Cobalt	5.0	~~U~~	UL	P	MBL
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	814			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	729000		~~B~~	P	
7439-96-5	Manganese	70.1			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	340000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5050000		~~B~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	3.6	~~B~~	J	P	
7440-66-6	Zinc	6.0	~~B~~	B	P	MBL

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS
-I-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW05-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-15

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1130		~~J~~ J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UL	P	MBL
7440-39-3	Barium	29.6	~~B~~	J	P	
7440-41-7	Beryllium	0.48	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	226000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	~~U~~	UL	P	MBL
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	1270			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	698000			P	
7439-96-5	Manganese	139			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	339000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5110000		~~J~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	4.4	~~B~~	J	P	
7440-66-6	Zinc	7.2	~~B~~	B	P	MBL

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW05P-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-16

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1050		J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U	UL	P	MBL
7440-39-3	Barium	28.8	B	J	P	
7440-41-7	Beryllium	0.44	B	B	P	MBL
7440-43-9	Cadmium	5.0	U	UL	P	MBL
7440-70-2	Calcium	223000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U	UL	P	MBL
7440-50-8	Copper	5.0	U	UL	P	MBL
7439-89-6	Iron	1210			P	
7439-92-1	Lead	3.0	U	UL	P	OT
7439-95-4	Magnesium	688000			P	
7439-96-5	Manganese	136			P	
7439-97-6	Mercury	0.14	B	B	CV	EBL
7440-02-0	Nickel	40.0	U	UL	P	MBL
7440-09-7	Potassium	330000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U	UL	P	MBL
7440-23-5	Sodium	5470000		J	P	SD
7440-28-0	Thallium	10.0	U	UL	P	MBL
7440-62-2	Vanadium	4.6	B	J	P	
7440-66-6	Zinc	6.1	B	B	P	MBL

JMC 10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW06-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-11

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	889		J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U	UL	P	MBL
7440-39-3	Barium	30.1	B	J	P	
7440-41-7	Beryllium	0.42	B	B	P	MBL
7440-43-9	Cadmium	5.0	U	UL	P	MBL
7440-70-2	Calcium	233000			P	
7440-47-3	Chromium	0.71	B	B	P	MBL
7440-48-4	Cobalt	5.0	U	UL	P	MBL
7440-50-8	Copper	5.0	U	UL	P	MBL
7439-89-6	Iron	971			P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	722000		U	P	
7439-96-5	Manganese	108			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U	UL	P	MBL
7440-09-7	Potassium	341000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U	UL	P	MBL
7440-23-5	Sodium	5050000		EB J	P	SD
7440-28-0	Thallium	10.0	U	UL	P	MBL
7440-62-2	Vanadium	3.7	B	J	P	
7440-66-6	Zinc	6.5	B	B	P	MBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW07-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-10

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	754		~~*~~ J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UL	P	MBL
7440-39-3	Barium	28.4	~~B~~	J	P	
7440-41-7	Beryllium	0.37	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	225000			P	
7440-47-3	Chromium	10.0	~~U~~	U	P	XICORR JAL 10/20/09
7440-48-4	Cobalt	5.0	~~U~~	UL	P	MBL
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	838			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	695000			P	
7439-96-5	Manganese	93.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	332000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5250000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	3.6	~~B~~	J	P	
7440-66-6	Zinc	7.1	~~B~~	B	P	MBL

JAC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW08-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-08

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	564		~~J~~	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	~~U~~	UL	P	MBL
7440-39-3	Barium	28.5	~~B~~	J	P	
7440-41-7	Beryllium	0.38	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	233000			P	
7440-47-3	Chromium	0.72	~~B~~	B	P	MBL
7440-48-4	Cobalt	5.0	~~U~~	UL	P	MBL
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	715			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	747000		~~J~~	P	
7439-96-5	Manganese	81.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	345000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5370000		~~J~~ J	P	SD
7440-28-0	Thallium	10.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	4.0	~~B~~	J	P	
7440-66-6	Zinc	33.5			P	

JRC 10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW09-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-09

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	684		J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U	UL	P	MBL
7440-39-3	Barium	28.3	B	J	P	
7440-41-7	Beryllium	0.42	B	B	P	MBL
7440-43-9	Cadmium	5.0	U	UL	P	MBL
7440-70-2	Calcium	225000			P	
7440-47-3	Chromium	1.3	B	B	P	MBL
7440-48-4	Cobalt	5.0	U	UL	P	MBL
7440-50-8	Copper	5.0	U	UL	P	MBL
7439-89-6	Iron	816			P	
7439-92-1	Lead	3.0	U	UL	P	OT
7439-95-4	Magnesium	720000		J	P	
7439-96-5	Manganese	66.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U	UL	P	MBL
7440-09-7	Potassium	339000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U	UL	P	MBL
7440-23-5	Sodium	5260000		EP J	P	SD
7440-28-0	Thallium	10.0	U	UL	P	MBL
7440-62-2	Vanadium	4.0	B	J	P	
7440-66-6	Zinc	7.5	B	B	P	MBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW10-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-07

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1190		J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U	UL	P	MBL
7440-39-3	Barium	28.0	B	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U	UL	P	MBL
7440-70-2	Calcium	225000			P	
7440-47-3	Chromium	0.66	B	B	P	MBL
7440-48-4	Cobalt	5.0	U	UL	P	MBL
7440-50-8	Copper	5.0	U	UL	P	MBL
7439-89-6	Iron	844			P	
7439-92-1	Lead	3.0	U	UL	P	OT
7439-95-4	Magnesium	679000			P	
7439-96-5	Manganese	55.8			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U	UL	P	MBL
7440-09-7	Potassium	317000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U	UL	P	MBL
7440-23-5	Sodium	5070000		J	P	SD
7440-28-0	Thallium	10.0	U	UL	P	MBL
7440-62-2	Vanadium	4.3	B	J	P	
7440-66-6	Zinc	6.8	B	B	P	MBL

JHC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW11-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-02

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	604		J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U	UL	P	MBL
7440-39-3	Barium	26.9	B	J	P	
7440-41-7	Beryllium	0.39	B	B	P	MBL
7440-43-9	Cadmium	5.0	U	UL	P	MBL
7440-70-2	Calcium	233000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U	UL	P	MBL
7440-50-8	Copper	5.0	U	UL	P	↓
7439-89-6	Iron	776			P	
7439-92-1	Lead	4.2		L	P	OT
7439-95-4	Magnesium	738000			P	
7439-96-5	Manganese	50.8			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U	UL	P	MBL
7440-09-7	Potassium	340000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U	UL	P	MBL
7440-23-5	Sodium	5300000			P	
7440-28-0	Thallium	10.0	U	UL	P	MBL
7440-62-2	Vanadium	3.5	B	J	P	
7440-66-6	Zinc	6.3	B	B	P	MBL

JMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW12-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-01

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	597		J	P	MDP
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U	UL	P	MBL
7440-39-3	Barium	26.5	B	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U	UL	P	MBL
7440-70-2	Calcium	232000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U	UL	P	MBL
7440-50-8	Copper	5.0	U	UL	P	↓
7439-89-6	Iron	755			P	
7439-92-1	Lead	3.0	U	UL	P	OT
7439-95-4	Magnesium	714000		J	P	
7439-96-5	Manganese	47.7			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U	UL	P	MBL
7440-09-7	Potassium	338000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U	UL	P	MBL
7440-23-5	Sodium	5210000		J	P	SD
7440-28-0	Thallium	10.0	U	UL	P	MBL
7440-62-2	Vanadium	3.2	B	J	P	
7440-66-6	Zinc	6.7	B	B	P	MBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB01-072309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-19

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.1	~~B~~	~~J~~ J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.45	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	108			P
7439-92-1	Lead	2.0	~~B~~	~~J~~ L	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	0.40	~~B~~	J	P
7439-97-6	Mercury	0.17	~~B~~	J	CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1090	~~B~~	~~B~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	2.8	~~B~~	J	P

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JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB02-072309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-20

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	53.4	B	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.44	B	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	2.9	B	J L	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	986	B	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	20.0	U		P

OT xlcom JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-FB01-072309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-21

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	52.0	B	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.43	B	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	2.7	B	J L	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	870	B	BJ	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	1.3	B	J	P

OT x1 com JAC 10/20/09

JAC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-FB02-072309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-22

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	52.2	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	200	U		P	
7440-41-7	Beryllium	0.45	~~B~~	J	P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	5000	U		P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	100	U		P	
7439-92-1	Lead	2.8	~~B~~	J L	P	OT
7439-95-4	Magnesium	5000	U		P	
7439-96-5	Manganese	10.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	5000	U		P	
7782-49-2	Selenium	3.6	~~B~~	K	P	OT
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	860	~~B~~	E J	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	0.51	~~B~~	J	P	
7440-66-6	Zinc	1.7	~~B~~	J	P	

Xicorr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB01-072109

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-05

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	41.5	~~B~~	~~J~~ J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.36	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1200	~~B~~	~~J~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	1.9	~~B~~	J	P

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-072209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-13

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	92.0	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	200	U		P	
7440-41-7	Beryllium	0.52	~~B~~	J	P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	46.3	~~B~~	J	P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	46.2	~~B~~	J	P	
7439-92-1	Lead	2.3	~~B~~	L	P	OT
7439-95-4	Magnesium	5000	U		P	
7439-96-5	Manganese	1.1	~~B~~	J	P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	5000	U		P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	977	~~B~~	J	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	20.0	U		P	
7440-66-6	Zinc	6.9	~~B~~	J	P	

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS
-I-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-EB02-072209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Lab Sample ID: 0907175-12

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	65.8	B	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.50	B	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	2.3	B	L	P OT
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1050	B	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	1.1	B	J	P

JMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS01-SW31-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-13

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	92.0	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.4	~~B~~	J	P	
7440-39-3	Barium	29.7	~~B~~	~~B~~ J	P	SD
7440-41-7	Beryllium	0.92	~~B~~	B	P	MBL
7440-43-9	Cadmium	0.35	~~B~~	J	P	
7440-70-2	Calcium	199000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	0.98	~~B~~	J	P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	64.8	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	610000			P	
7439-96-5	Manganese	160			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	296000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4930000		~~B~~	P	
7440-28-0	Thallium	5.7	~~B~~	B	P	MBL
7440-62-2	Vanadium	2.6	~~B~~	J	P	
7440-66-6	Zinc	12.0	~~B~~	J	P	

10/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SW31P-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-14

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	103	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	40.3	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	0.96	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	208000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	60.7	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	626000			P	
7439-96-5	Manganese	202			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	304000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4870000		~~B~~	P	
7440-28-0	Thallium	5.3	~~B~~	B	P	MBL
7440-62-2	Vanadium	2.0	~~B~~	B	P	MBL
7440-66-6	Zinc	15.1	~~B~~	J	P	

10/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS07-SW32-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

xl COM JAC 10/09

Matrix (soil/water): WATER Lab Sample ID: 0907180-04

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	163	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	26.5	~~B~~	~~B~~ J	P	SD
7440-41-7	Beryllium	0.91	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	228000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	0.60	~~B~~	J	P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	167			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	725000		~~J~~	P	
7439-96-5	Manganese	43.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	345000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5530000		~~J~~	P	
7440-28-0	Thallium	4.3	~~B~~	B	P	EBL
7440-62-2	Vanadium	2.8	~~B~~	J	P	
7440-66-6	Zinc	22.4			P	

JAC 10/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS07-SW33-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

XICOM GIC 10/09

Matrix (soil/water): WATER Lab Sample ID: 0907180-03

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	227		B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.8	~~B~~	J	P	
7440-39-3	Barium	26.1	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	1.0	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	236000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	1.1	~~B~~	J	P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	270			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	DT
7439-95-4	Magnesium	726000		~~D~~	P	
7439-96-5	Manganese	39.2			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	357000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5570000		~~D~~	P	
7440-28-0	Thallium	5.0	~~B~~	B	P	EBL
7440-62-2	Vanadium	3.2	~~B~~	J	P	
7440-66-6	Zinc	28.0			P	

JGC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-I-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW05-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-11

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	105	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.7	~~B~~	J	P	
7440-39-3	Barium	25.6	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	1.0	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	216000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	69.7	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	694000			P	
7439-96-5	Manganese	91.1			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	336000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5350000		~~D~~	P	
7440-28-0	Thallium	7.1	~~B~~	B	P	EBL
7440-62-2	Vanadium	2.9	~~B~~	J	P	
7440-66-6	Zinc	4.8	~~B~~	J	P	

JC 10/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW05P-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-12

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	108	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.4	~~B~~	J	P	
7440-39-3	Barium	27.7	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	1.1	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	231000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	61.1	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	692000		~~B~~	P	
7439-96-5	Manganese	95.4			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	358000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5540000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.6	~~B~~	J	P	
7440-66-6	Zinc	3.4	~~B~~	J	P	

JMC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-SW06-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-09

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	88.5	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	27.9	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	0.95	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	227000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBC
7439-89-6	Iron	66.6	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	713000		~~B~~	P	
7439-96-5	Manganese	89.1			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	353000		~~E~~ J	P	SD
7782-49-2	Selenium	3.1	~~B~~	K	P	OT
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5540000		~~B~~	P	
7440-28-0	Thallium	4.0	~~B~~	B	P	EBL
7440-62-2	Vanadium	2.7	~~B~~	J	P	
7440-66-6	Zinc	11.9	~~B~~	J	P	

JMC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW07-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-08

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	99.6	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.2	~~B~~	J	P	
7440-39-3	Barium	27.1	~~B~~	~~B~~ J	P	SD
7440-41-7	Beryllium	0.95	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	226000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	0.96	~~B~~	J	P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	72.7	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	704000		~~J~~	P	
7439-96-5	Manganese	71.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	351000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5510000		~~J~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.7	~~B~~	J	P	
7440-66-6	Zinc	27.6			P	

JMC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW08-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-06

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	97.6	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.7	~~B~~	J	P	
7440-39-3	Barium	26.7	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	0.91	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	236000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	0.67	~~B~~	J	P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	94.7	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	720000		D	P	
7439-96-5	Manganese	62.4			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	357000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5610000		D	P	
7440-28-0	Thallium	7.0	~~B~~	B	P	EBL
7440-62-2	Vanadium	3.1	~~B~~	J	P	
7440-66-6	Zinc	25.0			P	

JVC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-1-
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW09-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-07

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	103	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.8	~~B~~	J	P	
7440-39-3	Barium	26.5	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	0.92	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	235000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	73.1	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	723000		~~B~~	P	
7439-96-5	Manganese	38.9			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	360000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5690000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.2	~~B~~	B	P	MBL
7440-66-6	Zinc	25.3			P	

JLC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW10-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-05

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	101	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	25.1	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	0.94	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	238000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	47.3	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	715000		~~B~~	P	
7439-96-5	Manganese	15.3			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	351000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5590000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.4	~~B~~	B	P	MBL
7440-66-6	Zinc	9.1	~~B~~	J	P	

DC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW11-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-02

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	216		B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.6	~~B~~	J	P	
7440-39-3	Barium	25.5	~~B~~	~~B~~ J	P	SD
7440-41-7	Beryllium	1.0	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	235000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	240			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	722000		~~J~~	P	
7439-96-5	Manganese	22.1			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	360000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5560000		~~J~~	P	
7440-28-0	Thallium	5.6	~~B~~	B	P	EBL
7440-62-2	Vanadium	2.4	~~B~~	B	P	MBL
7440-66-6	Zinc	24.9			P	

JLC 10/9/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS03-SW12-0709

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-01

Level (low/med): LOW Date Received: 7/22/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	186	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	24.9	~~B~~	~~E~~ J	P	SD
7440-41-7	Beryllium	0.91	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	234000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	0.64	~~B~~	J	P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	215			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	723000		~~J~~	P	
7439-96-5	Manganese	9.5	~~B~~	J	P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	350000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5560000		~~J~~	P	
7440-28-0	Thallium	5.5	~~B~~	B	P	EBL
7440-62-2	Vanadium	2.7	~~B~~	J	P	
7440-66-6	Zinc	14.4	~~B~~	J	P	

JLC 10/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB01-072309

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-15

Level (low/med): LOW Date Received: 7/24/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	93.3	~~B~~	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U	~~J~~	P
7440-41-7	Beryllium	0.96	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	95.2	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	~~B~~	UL	P OT
7439-95-4	Magnesium	83.9	~~B~~	J	P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	51.0	~~B~~	~~J~~ J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1070	~~B~~	J	P
7440-28-0	Thallium	4.3	~~B~~	↓	P
7440-62-2	Vanadium	0.51	~~B~~	↓	P
7440-66-6	Zinc	20.0	U		P

JMC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB02-072209

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Lab Sample ID: 0907180-10

Level (low/med): LOW Date Received: 7/23/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	94.9	~~B~~	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U	Z	P
7440-41-7	Beryllium	0.95	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	49.2	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	~~U~~	UL	P
7439-95-4	Magnesium	101	~~B~~	J	P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	64.5	~~B~~	Z J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1190	~~B~~	J	P
7440-28-0	Thallium	6.9	~~B~~	J	P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	1.6	~~B~~	J	P

or

JVC 10/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments: DISSOLVED

AMENDED DATA

CTO-166

Cell → Pat Murphy (757) 567-1553

CHAIN OF CUSTODY

№ 03866

Page 1 of 1

226 098

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Sites 1/3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or (N)
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOC OLMO4.3 40mL	Metals ILM05.3 100mL	* F Metals ILM05.3 100mL	TDS 160.1 500mL	AVS/SEM 7 metals 4oz	Grain Size D422 8oz	Total Metals, pH, Alkalinity, TOC 8oz	AVS/SEMS/L	pH / Sample Info (Lab Use)
0907175-01	YS03-SW12-0709	7/21/09	0950	SW	6	3		1				3	1	1	1					<2
0907174-01	YS03-SD12-0709	7/21/09	1000	SO	7							3				1	2	1	0907182-01	
0907175-02	YS03-SW11-0709	7/21/09	1020	SW	6	3		1				3	1	1	1					<2
0907174-02	YS03-SD11-0709	7/21/09	1030	SO	7							3				1	2	1	0907182-02	
0907175-03	YS01-SW33-0709	7/21/09	1050	SW	6	3		1				3	1	1	1					<2
0907174-03	YS01-SD33-0709	7/21/09	1100	SO	7							3				1	2	1	0907182-03	
0907175-04	YS01-SW32-0709	7/21/09	1150	SW	6	3		1				3	1	1	1					<2
0907174-04	YS01-SD32-0709	7/21/09	1200	SO	7							3				1	2	1	0907182-04	
0907175-05	YS03-EB01-072109	7/21/09	1415	AQ	4	3		1				3	1							<2
0907175-06	YS03-TB01-072109	7/21/09	1420	TB	3	3						3								

Lab Use Only

Sample Unpacked By: R. Burns
Sample Order Entry By: [illegible] 07/22/09
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

* Metals ARE NOT field filtered. Samples are in glass 1L Ambers w/ NO PRESERVATIVES
EB01 is EB for Sediment Samples. Encore Samples Recd for "SD" Samples

Sample Custody

Relinquished by: [signature]	Date/Time: 7/21/09 1700	Received by: R. Burns	Date/Time: 7/22/09 1020
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? (Y) or N If yes, where? AVS/SEM to CTS Grain Size to CT LABS
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 0.1, 1.6, 2.3 °C

Samples * 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CompuChem
a division of Liberty Analytical Corporation

QUALITY ASSURANCE NOTICE

Client CH2M Hill
Case #
Type of Analysis ~~Diss. Pb~~ Diss Metals
Receipt Date 7/22/09

For some organic and/or inorganic determinations temperature preservation at 4 degrees Celsius is required for environmental samples during shipment to the laboratory and prior to analysis. A temperature tolerance range is generally allowed. Temperature of a representative sample from the shipping container is taken and recorded by the receiving clerk at the time of sample receipt. This temperature is representative of all samples contained in the cooler.

The EPA CLP program requires the laboratory make notification when the temperature exceeds 10° C.

The State of North Carolina requires that samples must be iced to above freezing but ≤ 6° C during shipment.

Notification to other clients is either client or project dependent.

Samples that are hand delivered to the laboratory immediately after collection may not meet this criteria. In these cases, the samples shall be considered acceptable if there is evidence that the chilling process has begun, such as arrival on ice.

The temperature of this sample at the time of receipt was determined to be 9.1 °C filtered diss. metals were the only samples in this cooler per 6010B method, these would be stored @ ambient temperature after arrival anyway.

A CompuChem customer service representative contacted the client. The client instructed the Receiving department to:

~~Hand Delivery~~/Received on ice ✓ 1 Bag melted

Analyze - qualify with notice ✓

Dispose - client will resample

7/22/09

Supervisor Signature/ID [signature] Date 7/22/09

QAN-R-3
060308

qanr3 - 3.8.06.jad

Metals Filtration Preparation Log

Metals Method : Filtration

CompuChem a Division of Liberty Analytical Corp.

Case/SDG: 0907180 Prepared by: C. Dover Date: 7/22/09

#	CCN (Lab ID)	Client ID	Date Rec'd	FILTRATION PERFORMED (CHECK)	pH
1	0907180-01	YS03-SW12-0709	7.22.09	✓	<2
2	-02	YS03-SW11-0709	7.22.09	✓	<2
3	-03	YS01-SW33-0709	7.22.09	✓	<2
4	-04	YS01-SW32-0709	7.22.09	✓	<2
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

Reagent Manufacturer & Lot #'s:

50% HNO_3 7661-17-3

CTO-166

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CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

№ 03868

Page 1 of 2

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Sites 1/3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Relethia Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No. (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles (16)	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3 40mL	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	TDS 160.1 500mL	AVS/SEM - 2 metals 4oz	Grain Size D422 8oz	Metals, Alkalinity, TOC, pH 8oz	AVS/SEM s/b	pH-V Sample Info (Lab Use): Metals	Metals
0907175-01 (0907180-05)	YS03-SW10-0709	7/20/09	1030	SW	16	9		6				9	3	3	1					<2	<2
0907174-05 (0907181-05)	YS03-SD10-0709		1045	SO	21							9				3	6	3	0907182-05		
0907175-08 (0907180-06)	YS03-SW08-0709		1130	SW	6	3		2				3	1	1	1					<2	<2
0907174-06 (0907181-06)	YS03-SD08-0709		1145	SO	7							3				1	2	1	0907182-06		
0907175-07 (0907180-07)	YS03-SW09-0709		1200	SW	6	3		2				3	1	1	1					<2	<2
0907174-07 (0907181-07)	YS03-SD09-0709		1210	SO	7							3				1	2	1	0907182-07		
0907175-10 (0907180-08)	YS03-SW07-0709		1230	SW	6	3		2				3	1	1	1					<2	<2
0907174-08 (0907181-08)	YS03-SD07-0709		1240	SO	7							3				1	2	1	0907182-08		
0907175-11 (0907180-09)	YS03-SW06-0709		1255	SW	6	3		2				3	1	1	1					<2	<2
0907174-09 (0907181-09)	YS03-SD06-0709	↓	1310	SO	7							3				1	2	1	0907182-09		

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.07 Y or NA

Comments

YS03-SW/SD10 Run MS/MSD

Sample Custody

Relinquished by: [signature]	Date/Time: 7/22/09 1800	Received by: [signature]	Date/Time: 7/23/09 1045
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? AVS/SEM to CAS Grain Size to CTLABS
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 5.1, 1.4, 1.6 °C

Samples ... 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

1.8°C

CTO-166

№ 03871

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Sites 2/3
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6245	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type): VOCs OLMO4.3 40mL; Metals ILMO5.3 100mL; F Metals ILMO5.3 100mL; TDS 1L, 1 500mL

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	pH / Sample Info (Lab Use): Matrix	pH
0907175-14	YS03-TB01-072209	7/22/09	1515	TB	3	3							
0907175-13	YS03-EB01-072209		1520	AQ	4	3		1					22
0907175-12 0907180-10	YS03-EB02-072209	↓	1610	AQ	6	3		2					22 22

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

EB01 is EB for SO
EB02 is EB for SW

Sample Custody

Relinquished by:	Date/Time: 7/22/09 1800	Received by:	Date/Time: 7/23/09 1015
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? ~~Accutest to CTS~~ Gamma to CTS

Custody Seal(s) intact? Y or N | On Ice? Y or N | Cooler Temp: 6.1, 1.4, 1.1, °C

Samples st[illegible] 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

8°C

CTO-166

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. St. 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebecca Shaw
Phone #: (757) 671-8311
Sampler's Name: P. Murphy

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Sites 1/3
Turnaround time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Compuchem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3 40mL	Metals ILM05.3 100mL	F Metals ILM05.3 100mL	TDS 160.1 500mL	AVS/SEM 7 metals 40mL	Grain Size D422 8oz	Metals, Alkalinity, pH, TOC 8oz	AVS/SEM sub	pH / Sample Info (Lab Use)	Matrix
0907175-15 0907180-11	YS03-SW05-0709	7/23/09	1030	SW	6	3		2				3	1	1	1					<2	<2
0907175-16 0907180-12	YS03-SW05F-0709		1035	SW	5	3		2				3	1	1						<2	<2
0907174-10 0907181-7	YS03-SD05-0709		1045	SO	7							3				1	2	1	0907182-10		
0907174-11 0907181-11	YS03-SD05F-0709		1050	SO	5							3				1		1	0907182-11		
0907175-14 0907180-13	YS01-SW31-0709		1140	SW	6	3		2				3	1	1	1					<2	<2
0907175-18 0907180-14	YS01-SW31F-0709		1145	SW	5	3		2				3	1	1						<2	<2
0907174-17 0907181-14	YS01-SD31-0709		1200	SO	7							3				1	2	1	0907182-13		
0907174-13	YS01-SD31F-0709		1205	SO	5							3				1		1	13		
0907174-14 0907181-12	YS01-SD31-0709		1220	SO	7							3				1	2	1	14		
0907175-23	YS01-TB31-072309	↓	1200	TB	3	3						3									

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 7/23/09 1700	Received by:	Date/Time: 7/24/09 1025
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? AVS/SEM TO CAS GRAIN SIZE TO CT LABS
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 3.2, 2.1, ? °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

№ 03874

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CHAIN OF CUSTODY

Page 2 of 2

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166		GW - Ground water WW - Waste water SW - Surface water SO - Soil/Sediment TB - Trip Blank RI - Rinsate WP - Wipe O - Other
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Sites 1/3		
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		
Project Contact: Roberta Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? (Y) or N		
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?		

CompuChem No. (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs 01/03 40mL	Metals ILM05.3 100mL	* F Metals ILM05.3 100mL	TDS 160.1 50mL	AVS/SEM 7 metals 40z	Gram Size D422 8oz	Metals, Alkalinity, pH, TOC 8oz	pH / Sample Info (Lab Use): Metals F Metals
0907175-19	YS01-EB01-072309 *	7/23/09	1315	AQ	5	3		1				3	1	(*)	1		0907180-15		<2 <2
-20	YS01-EB02-072309		1330		4	3		1				3	1						<2 -
-21	YS01-FB01-072309		1500		5	3		1				3	1		1				<2 -
-22	YS01-FB02-072309		1515		4	3		1				3	1						<2 -
													*						

Lab Use Only

Sample Unpacked By: R. Shuler
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

EB01 = SW
EB02 = SD
FB01 = SW
FB02 = SD

* YS01-EB01-072309 - 1 extra 1000 mL plastic was received in cooler for Filtered metals but was not listed on COC

Sample Custody

Relinquished by:	Date/Time: 7/23/09 1700	Received by: R. Shuler	Date/Time: 7/24/09 1025
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or (N) If yes, where?
Custody Seal(s) intact? (Y) or N
On Ice (Y) or N
Cooler Temp: 3.2, 2.1, 2.3 C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 7/20-23/09
Received Date: 7/22-24/09
Analysis Dates: 7/31-8/5/09

Cooler Temps: 1.1-9.1°C

All holding time requirements were met. According to Region III guidelines aqueous samples received above 4°C+/-2°C are to be analyzed within 7 days from sample collection; therefore samples YS03-SW12-0709, YS03-SW11-0709, YS01-SW33-0709, YS01-SW32-0709, YS03-EB01-072109 and YS03-TB01-072109 were qualified as biased low L/UL.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

No contamination was exhibited in the method blanks-no qualifications were required. The associated QC blanks for these samples were: YS01-TB01072309, YS03-TB01-072109 (no positive results) and YS03-TB01-072209 (no positive results)- trip blanks; YS01-FB01-072309 - field blank; YS01-EB01-072309 and YS03-EB02-072209-equipment blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS01-TB01072309	acetone	1.9J ug/L	2.5 ug/L	19 ug/L
YS01-FB01-072309	acetone	4.5	2.5	45
YS01-EB01-072309	acetone	4.1	2.5	41
YS03-EB02-072209	acetone	4.7	2.5	47

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-SW31-0709, YS01-SW31P-0709, YS01-SW32-0709, YS01-SW33-0709, YS03-SW05-0709, YS03-SW05P-0709, YS03-SW06-0709, YS03-SW07-0709, YS03-SW08-0709, YS03-SW09-0709, YS03-SW10-0709, YS03-SW11-0709, YS03-SW12-0709	acetone	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS03-SW10-0709—two compounds exhibited high results, no positive results were exhibited for these compounds, no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for samples YS01-SW31-0709 and YS03-SW05-0709—no positive results above the CRQL, no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Tajma Mashkhoff **Date:** 10,5,09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Lab File ID: 9G31005-TUN171 BFB Injection Date: 07/31/09

Instrument ID: 5972HP71 BFB Injection Time: 1247

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	31.0
75	30.0 - 60.0% of mass 95	56.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	5.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	85.5
175	5.0 - 9.0% of mass 174	7.0 (8.1)1
176	95.0 - 101.0% of mass 174	85.3 (99.8)1
177	5.0 - 9.0% of mass 176	5.3 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9G31005-CCV	9G31005-CCV171	07/31/09	1313
02	VBLKLS	9073112-BLK	9073112-BLK1R7	07/31/09	1436
03	VLSLCS	9073112-BS1	9073112-BS171	07/31/09	1504
04	VLSLCSD	9073112-BSD	9073112-BSD171	07/31/09	1532
05	YS03-SW12-0709	0907175-01	0907175-0171	07/31/09	1629
06	YS03-SW11-0709	0907175-02	0907175-0271	07/31/09	1657
07	YS01-SW33-0709	0907175-03	0907175-0371	07/31/09	1725
08	YS01-SW32-0709	0907175-04	0907175-0471	07/31/09	1753
09	YS03-EB01-072109	0907175-05	0907175-0571	07/31/09	1822
10	YS03-TB01-072109	0907175-06	0907175-0671	07/31/09	1850
11	YS03-SW10-0709	0907175-07	0907175-0771	07/31/09	1946
12	YS03-SW08-0709	0907175-08	0907175-0871	07/31/09	2014
13	YS03-SW09-0709	0907175-09	0907175-0971	07/31/09	2042
14	YS03-SW07-0709	0907175-10	0907175-1071	07/31/09	2111
15	YS03-SW06-0709	0907175-11	0907175-1171	07/31/09	2139
16	YS03-EB02-072209	0907175-12	0907175-1271	07/31/09	2207
17	YS03-EB01-072209	0907175-13	0907175-1371	07/31/09	2235
18	YS03-TB01-072209	0907175-14	0907175-1471	07/31/09	2303
19	YS03-SW05-0709	0907175-15	0907175-1571	07/31/09	2331
20	YS03-SW05P-0709	0907175-16	0907175-1671	08/01/09	0000
21	YS01-SW31-0709	0907175-17	0907175-1771	08/01/09	0028
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

ab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Instrument ID: 5972HP71 Calibration Date: 07/31/09 Time: 1313

Lab File ID: 9G31005-CCV171 Init. Calib. Date(s): 07/29/09 07/29/09

Init. Calib. Times: 1212 1433

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.5804400	0.4921986	0.4921986	0.001	-15.20	90.00	AVRG
Chloromethane	0.5434700	0.5136861	0.5136861	0.1	-5.48	90.00	AVRG
Vinyl Chloride	0.4242400	0.4439495	0.4439495	0.001	4.64	20.00	AVRG
Bromomethane	124.41145	125.00000	0.1820412	0.001	-0.47	90.00	LINR
Chloroethane	0.1704500	0.1856737	0.1856737	0.001	8.93	90.00	AVRG
Trichlorofluoromethane	0.3792200	0.4061608	0.4061608	0.001	7.10	90.00	AVRG
1,1-Dichloroethene	0.2880300	0.2795404	0.2795404	0.001	-2.95	20.00	AVRG
Carbon disulfide	1.1333500	1.0854604	1.0854604	0.001	-4.22	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	123.30906	125.00000	0.1795635	0.001	-1.35	90.00	LINR
Acetone	0.0297300	0.0253587	0.0253587	0.001	-14.70	90.00	AVRG
Methyl acetate	0.1166100	0.1180573	0.1180573	0.001	1.24	90.00	AVRG
Methylene Chloride	104.86084	125.00000	0.2641577	0.001	-16.11	90.00	LINR
ns-1,2-Dichloroethene	0.3305400	0.3219241	0.3219241	0.001	-2.61	90.00	AVRG
ethyl-tert-butyl ether	0.4526400	0.3963740	0.3963740	0.001	-12.43	90.00	AVRG
1,1-Dichloroethane	0.6018700	0.5928217	0.5928217	0.1	-1.50	90.00	AVRG
cis-1,2-Dichloroethene	0.3518300	0.3430404	0.3430404	0.001	-2.50	90.00	AVRG
2-butanone	0.0484100	0.0407493	0.0407492	0.001	-15.82	90.00	AVRG
Chloroform	0.5835500	0.5754838	0.5754838	0.001	-1.38	20.00	AVRG
1,1,1-Trichloroethane	0.5109900	0.5240861	0.5240861	0.001	2.56	90.00	AVRG
Carbon Tetrachloride	0.4602300	0.4605889	0.4605889	0.001	0.08	90.00	AVRG
Benzene	1.1319900	1.0489256	1.0489256	0.001	-7.34	90.00	AVRG
1,2-Dichloroethane	0.3388200	0.3177471	0.3177471	0.001	-6.22	90.00	AVRG
Trichloroethene	0.3301000	0.3104737	0.3104737	0.001	-5.94	90.00	AVRG
1,2-Dichloropropane	0.2885200	0.2697592	0.2697592	0.001	-6.50	20.00	AVRG
Bromodichloromethane	0.3830700	0.3598695	0.3598695	0.001	-6.06	90.00	AVRG
cis-1,3-Dichloropropene	0.3945400	0.3524752	0.3524752	0.001	-10.66	90.00	AVRG
4-Methyl-2-pentanone	0.1754600	0.1503253	0.1503253	0.001	-14.32	90.00	AVRG
Toluene	1.0378400	0.9469513	0.9469513	0.001	-8.76	20.00	AVRG
trans-1,3-Dichloropropene	0.4972400	0.4663393	0.4663393	0.001	-6.21	90.00	AVRG
1,1,2-Trichloroethane	0.2166300	0.2092343	0.2092343	0.001	-3.41	90.00	AVRG
Tetrachloroethene	116.52129	125.00000	0.3499194	0.001	-6.78	90.00	LINR
2-hexanone	0.1191200	0.1006205	0.1006205	0.001	-15.53	90.00	AVRG
Dibromochloromethane	0.3157600	0.3065751	0.3065751	0.001	-2.91	90.00	AVRG
1,2-Dibromoethane	0.2365300	0.2277871	0.2277871	0.001	-3.70	90.00	AVRG
Chlorobenzene	1.0757400	0.9711205	0.9711205	0.3	-9.72	90.00	AVRG
Ethylbenzene	0.5913400	0.5266204	0.5266204	0.001	-10.94	20.00	AVRG
m,p-Xylene	0.7623100	0.6564089	0.6564089	0.001	-13.89	90.00	AVRG
o-Xylene	0.6822100	0.5927392	0.5927392	0.001	-13.11	90.00	AVRG
Styrene	1.0907800	0.9361236	0.9361236	0.001	-14.18	90.00	AVRG
Bromoform	0.1582200	0.1458756	0.1458756	0.1	-7.80	90.00	AVRG
Isopropyl Benzene	1.7388000	1.5605317	1.5605317	0.001	-10.25	90.00	AVRG
,2,2-Tetrachloroethane	0.5214400	0.4778986	0.4778986	0.3	-8.35	90.00	AVRG

4R

4R

FORM VII VOA

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Lab File ID: 9H05005-TUN171 BFB Injection Date: 08/05/09

Instrument ID: 5972HP71 BFB Injection Time: 1317

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.5
75	30.0 - 60.0% of mass 95	54.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.3 (0.3)1
174	Greater than 50.0% of mass 95	85.4
175	5.0 - 9.0% of mass 174	7.4 (8.6)1
176	95.0 - 101.0% of mass 174	85.2 (99.7)1
177	5.0 - 9.0% of mass 176	5.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9H05005-CCV	9H05005-CCV171	08/05/09	1341
02	VBLKGC	9080511-BLK	9080511-BLK1R7	08/05/09	1452
03	VGCLCS	9080511-BS1	9080511-BS171	08/05/09	1530
04	VGCLCSD	9080511-BSD	9080511-BSD171	08/05/09	1558
05	YS01-SW31P-0709	0907175-18	0907175-1871	08/05/09	1812
06	YS01-EB01-072309	0907175-19	0907175-1971	08/05/09	1840
07	YS01-EB02-072309	0907175-20	0907175-2071	08/05/09	1908
08	YS01-FB01-072309	0907175-21	0907175-2171	08/05/09	1937
09	YS01-FB02-072309	0907175-22	0907175-2271	08/05/09	2005
10	YS01-TB01-072309	0907175-23	0907175-2371	08/05/09	2033
11	YS03-SW10-0709MS	9080511-MS1	9080511-MS171	08/05/09	2101
12	YS03-SW10-0709MSD	9080511-MSD	9080511-MSD171	08/05/09	2129
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Instrument ID: 5972HP71 Calibration Date: 08/05/09 Time: 1341

Lab File ID: 9H05005-CCV171 Init. Calib. Date(s): 07/29/09 07/29/09

Init. Calib. Times: 1212 1433

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.5804400	0.4404318	0.4404318	0.001	-24.12	90.00	AVRG	
Chloromethane	0.5434700	0.4132861	0.4132861	0.1	-23.95	90.00	AVRG	
Vinyl Chloride	0.4242400	0.3478779	0.3478779	0.001	-18.00	20.00	AVRG	
Bromomethane	119.63498	125.00000	0.1749633	0.001	-4.29	90.00	LINR	
Chloroethane	0.1704500	0.1515125	0.1515125	0.001	-11.11	90.00	AVRG	
Trichlorofluoromethane	0.3792200	0.3699947	0.3699947	0.001	-2.43	90.00	AVRG	
1,1-Dichloroethene	0.2880300	0.2542563	0.2542563	0.001	-11.72	20.00	AVRG	
Carbon disulfide	1.1333500	0.9210883	0.9210883	0.001	-18.73	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	107.18946	125.00000	0.1584169	0.001	-14.25	90.00	LINR	
Acetone	0.0297300	0.0225703	0.0225703	0.001	-24.08	90.00	AVRG	LIR
Methyl acetate	0.1166100	0.1096591	0.1096591	0.001	-5.96	90.00	AVRG	
Methylene Chloride	97.869172	125.00000	0.2493400	0.001	-21.70	90.00	LINR	
ns-1,2-Dichloroethene	0.3305400	0.3003177	0.3003177	0.001	-9.14	90.00	AVRG	
chyl-tert-butyl ether	0.4526400	0.3851247	0.3851247	0.001	-14.92	90.00	AVRG	
1,1-Dichloroethane	0.6018700	0.5237552	0.5237552	0.1	-12.98	90.00	AVRG	
cis-1,2-Dichloroethene	0.3518300	0.3225038	0.3225038	0.001	-8.34	90.00	AVRG	LIR
2-butanone	0.0484100	0.0369007	0.0369007	0.001	-23.77	90.00	AVRG	
Chloroform	0.5835500	0.5392447	0.5392447	0.001	-7.59	20.00	AVRG	
1,1,1-Trichloroethane	0.5109900	0.4710535	0.4710535	0.001	-7.82	90.00	AVRG	
Carbon Tetrachloride	0.4602300	0.4195083	0.4195083	0.001	-8.85	90.00	AVRG	
Benzene	1.1319900	0.9555975	0.9555975	0.001	-15.58	90.00	AVRG	
1,2-Dichloroethane	0.3388200	0.2995402	0.2995402	0.001	-11.59	90.00	AVRG	
Trichloroethene	0.3301000	0.2813760	0.2813760	0.001	-14.76	90.00	AVRG	
1,2-Dichloropropane	0.2885200	0.2491667	0.2491667	0.001	-13.64	20.00	AVRG	
Bromodichloromethane	0.3830700	0.3387838	0.3387838	0.001	-11.56	90.00	AVRG	
cis-1,3-Dichloropropene	0.3945400	0.3241173	0.3241173	0.001	-17.85	90.00	AVRG	
4-Methyl-2-pentanone	0.1754600	0.1420431	0.1420431	0.001	-19.04	90.00	AVRG	
Toluene	1.0378400	0.8800753	0.8800753	0.001	-15.20	20.00	AVRG	
trans-1,3-Dichloropropene	0.4972400	0.4557902	0.4557902	0.001	-8.34	90.00	AVRG	
1,1,2-Trichloroethane	0.2166300	0.2067056	0.2067056	0.001	-4.58	90.00	AVRG	
Tetrachloroethene	112.68868	125.00000	0.3383875	0.001	-9.85	90.00	LINR	
2-hexanone	0.1191200	0.0956282	0.0956282	0.001	-19.72	90.00	AVRG	
Dibromochloromethane	0.3157600	0.3044311	0.3044311	0.001	-3.59	90.00	AVRG	
1,2-Dibromoethane	0.2365300	0.2164263	0.2164263	0.001	-8.50	90.00	AVRG	
Chlorobenzene	1.0757400	0.9385338	0.9385338	0.3	-12.75	90.00	AVRG	
Ethylbenzene	0.5913400	0.4877573	0.4877573	0.001	-17.52	20.00	AVRG	
m,p-Xylene	0.7623100	0.6078018	0.6078018	0.001	-20.27	90.00	AVRG	
o-Xylene	0.6822100	0.5600332	0.5600332	0.001	-17.91	90.00	AVRG	
Styrene	1.0907800	0.8630010	0.8630010	0.001	-20.88	90.00	AVRG	
Bromoform	0.1582200	0.1541779	0.1541779	0.1	-2.55	90.00	AVRG	
Isopropyl Benzene	1.7388000	1.4574053	1.4574053	0.001	-16.18	90.00	AVRG	
,2,2-Tetrachloroethane	0.5214400	0.4877022	0.4877022	0.3	-6.47	90.00	AVRG	

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

ab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Instrument ID: 5972HP71 Calibration Date: 08/05/09 Time: 1341

Lab File ID: 9H05005-CCV171 Init. Calib. Date(s): 07/29/09 07/29/09

Init. Calib. Times: 1212 1433

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.6624300	1.4129709	1.4129709	0.001	-15.00	90.00	AVRG
1,4-Dichlorobenzene	1.6703600	1.4152200	1.4152200	0.001	-15.27	90.00	AVRG
1,2-Dichlorobenzene	1.3035800	1.1380732	1.1380732	0.001	-12.70	90.00	AVRG
1,2-Dibromo-3-Chloropropane	0.0833900	0.0713617	0.0713617	0.001	-14.42	90.00	AVRG
1,2,4-Trichlorobenzene	0.9292800	0.8413331	0.8413331	0.001	-9.46	90.00	AVRG
1,2-Dichloroethene (total)	0.3411800	0.3114108	0.3114108	0.001	-8.72	90.00	AVRG
Xylene (total)	0.6822100	0.5600332	0.5600332	0.001	-17.91	90.00	AVRG
Cyclohexane	100.86313	125.00000	0.3278987	0.001	-19.31	90.00	LINR
Methylcyclohexane	0.4705800	0.3757621	0.3757621	0.001	-20.15	90.00	AVRG
Dibromofluoromethane	118.56149	125.00000	0.2887612	0.001	-5.15	90.00	LINR
2-Dichloroethane-d4	106.91015	125.00000	0.1978121	0.001	-14.47	90.00	LINR
uene-d8	112.08361	125.00000	1.2270336	0.001	-10.33	90.00	LINR
Bromofluorobenzene	103.75596	125.00000	0.8628953	0.001	-17.00	90.00	LINR

Initial Calibration Date: 7/29/2009
RRF and %RSD Calculations:

Compound Name: chloromethane
Lab Value: 0.573

Area of Compound	2298724
Area of Internal STD	501590
Conc. of Internal STD	125
Conc. of Compound	1000
Calculated RRF	0.573

Compound Name: 4-methyl-2-pentanone
Lab Value: 11.35

RRF of STD 1	0.1837
RRF of STD 2	0.1352
RRF of STD 3	0.1827
RRF of STD 4	0.1882
RRF of STD 5	0.1806
RRF of STD 6	0.1824
Calculated % RSD	11.34

Continuing Calibration File ID: 8/5/2009
RRF and %D Calculations:

Compound Name: carbon disulfide
Lab Value: 0.921

Area of Compound	425295
Area of Internal STD	461731
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	0.921

Compound Name: benzene
Lab Value: 15.6

Average RRF	1.132
Calibration Check RRF	0.956
Calculated % D	15.6

SAMPLE CALCULATION

Sample ID: YS01-SW33-0709
Standard ID: 7/31/2009
Compound: acetone
Concnetration: 5.5 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	10249		
Area of Internal STD	314442		
Conc. of Internal (ng)	125		
RRF of Compound	0.0297		
Dilution Factor	1		
Weight of Sample	NA	25	
Volume of Sample	25	NA	
% Moisture	NA	0.79	
Aliquot of sample	NA	NA	
Concentration	5.5	#DIV/0!	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	9.876	6.635	0.672
Standard	9.878	6.627	0.671

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0907175
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: YS03-SW12-0709, YS03-SW11-0709, YS01-SW33-0709, SW01-SW32-0709, YS03-EB01-072109, YS03-TB01-072109, YS03-SW10-0709, YS03-SW08-0709, YS03-SW09-0709, YS03-SW07-0709, YS03-SW06-0709, YS03-EB02-072209, YS03-EB01-072209, YS03-TB01-072209, YS03-SW05-0709, YS03-SW05P-0709, YS01-SW31-0709, YS01-SW31P-0709, YS01-EB01-072309, YS01-EB02-072309, YS01-FB01-072309, YS01-FB02-072309, and YS01-TB01-072309

The 23 aqueous samples listed above were received intact, refrigerated between 1.1C and 9.1C, with proper documentation, in sealed shipping containers, on July 22, 23, and 24, 2009. The samples were scheduled for the requested analysis of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0907175 are included in the sample data sections.

Analysis holding time requirements were met for the samples. The pH values of the samples were equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) identified in three/23 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on one or more of the process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (VGCLCSD) failed Percent Recoveries for Ethylene Benzene and Isopropyl Benzene; (VGCLCS) met overall accuracy criteria. There were no detects for the two compounds in the associated samples. The associated Laboratory Control Samples (VLSLCS/VLSLCSD) met overall accuracy criteria. Sample YS03-SW10-0709 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
August 10, 2009

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 7/21, 7/22, 7/23
Received Date: 7/22, 7/23, 7/24
Prep. Dates: no prep – dissolved; 7/28 ICP total; 7/28 dissolved, 7/28 total Hg
Analysis Dates: 85, 8/6 dissolved, 8/5-8/6 total ICP; 7/29 dissolved, 7/29 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria with the exception of lead and selenium associated with both the total and dissolved metals run. All Pb results required qualification as L/UL up to 2X RL due to low recoveries. Two samples were qualified for Se due to high CRI recoveries. Please note that two positive results for lead in the total metals analysis were flagged B due to lab blank contamination. ICSA/ICSAB results were acceptable. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	2.303B ug/L	11.515 ug/L	B	MBL
	arsenic	-4.370B ug/L	≤ 10X MDL (24 ug/L)	L/UL	MBL
	cadmium	-0.539B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	cobalt	-0.688B ug/L	≤ 10X MDL (6 ug/L)	L/UL	MBL
	copper	-0.932B ug/L	≤ 10X MDL (9 ug/L)	L/UL	MBL
	nickel	-1.926B ug/L	≤ 10X MDL (11 ug/L)	L/UL	MBL
	silver	-1.183B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	thallium	-4.940B ug/L	≤ 10X MDL (37 ug/L)	L/UL	MBL
ICB/CCB – total metals	chromium	1.1B ug/L	5.5 ug/L	B	MBL
	beryllium	0.6B ug/L	3.0 ug/L	B	MBL
	zinc	6.7B ug/L	32.5 ug/L	B	MBL
	nickel	1.3B ug/L	6.5 ug/L	B	MBL
YS01-EB01-072309	mercury	0.17B ug/L	0.85 ug/L	B	EBL

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS01-SW31-0709, YS01-SW31P-0709	lead	B	MBL
all field samples	arsenic	L/UL	MBL
all field samples	cadmium	L/UL	MBL
all field samples	cobalt	L/UL	MBL
all field samples	copper	L/UL	MBL
all field samples	nickel	L/UL	MBL
all field samples	silver	L/UL	MBL
all field samples	thallium	L/UL	MBL
all field samples	chromium	B	MBL
YS01-SW31P-0709	nickel	B	MBL
all field samples except YS03-SW08-0709	zinc	B	MBL
all field samples	beryllium	B	MBL
YS01-SW31-0709, YS03-SW05P-0709	mercury	B	EBL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	aluminum	82.114B ug/L	410.57 ug/L	B	MBL
	beryllium	0.732B ug/L	3.66 ug/L	B	MBL
	copper	-2.838B ug/L	≤ 10X MDL (9 ug/L)	L/UL	MBL
	silver	-1.118 ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
ICB/CCB – dissolved metals	vanadium	0.5B ug/L	2.5 ug/L	B	MBL
	thallium	4.7B ug/L	23.5 ug/L	B	MBL
YS01-EB01-072309	thallium	4.3B ug/L	21.5 ug/L	B	EBL
YS03-EB02-072209	thallium	6.9B ug/L	34.5 ug/L	B	EBL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all field samples	aluminum	B	MBL
all field samples	beryllium	B	MBL
all field samples	copper	L/UL	MBL
all field samples	silver	L/UL	MBL
YS03-SW11-0709, YS03-SW10-0709, YS03-SW09-0709, YS01-SW31P-0709	vanadium	B	MBL
YS01-SW31-0709, YS01-SW31P-0709	thallium	B	MBL
YS03-SW05-0709, YS01-SW33-0709, YS01-SW32-0709, YS03-SW12-0709, YS03-SW06-0709, YS03-SW08-0709, YS03-SW11-0709	thallium	B	EBL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MSD pairs analyzed for this SDG exhibited acceptable recoveries. The matrix duplicate analyzed for the total metals fraction exhibited a non-compliant RPD for one analyte, aluminum (60.1%). Therefore, aluminum was qualified as estimated J/UJ in the total metals field samples. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses for both the total and dissolved fractions exhibited acceptable %Ds for all analytes except potassium and barium in the dissolved metals analysis and sodium in the total metals analysis. Therefore, potassium & barium were flagged as estimated J/UJ in dissolved metals field samples and sodium was flagged as estimated J/UJ in all total metals field samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Total Metals

Sample ID: YS01-SW31-0709 Duplicate Sample ID: YS01-SW31P-0709

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1440	2980	70%
calcium	216000	215000	0%
iron	2240	4990	76%
magnesium	624000	641000	3%
manganese	213	235	10%
potassium	291000	312000	7%
sodium	4850000	4970000	2%
zinc	23.2	20.1	14%

Comments: flag aluminum & iron as estimated J

Dissolved Metals

Sample ID: YS01-SW31-0709 Duplicate Sample ID: YS01-SW31P-0709

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	199000	208000	4%
magnesium	610000	626000	3%
manganese	160	202	23%
selenium	296000	304000	3%
sodium	4930000	4870000	1%

Comments: no qualifications

Total Metals

Sample ID: YS03-SW05-0709 Duplicate Sample ID: YS03-SW05P-0709

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1130	1050	7%
calcium	226000	223000	1%
iron	1270	1210	5%
magnesium	698000	688000	1%
manganese	139	136	2%
potassium	339000	330000	3%
sodium	5110000	5470000	7%

Comments: no qualifications

Dissolved Metals

Sample ID: YS03-SW05-0709 Duplicate Sample ID: YS03-SW05P-0709

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	216000	231000	7%
magnesium	694000	692000	0%
manganese	91.1	95.4	5%
selenium	336000	358000	6%
sodium	5350000	5540000	3%

Comments: no qualifications

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS03-SW11-0709
COMPOUND: lead
CONCENTRATION: 4.2 ug/L
%Solids – na
50 ml

Raw Data result: 4.205922 ug/L

4.205922 ug/L * 0.05L/0.05L * 1 = 4.206 ug/L

Total Metals

EPA SAMPLE ID: YS01-SW31-0709
COMPOUND: aluminum
CONCENTRATION: 92.0 ug/L
%Solids – na
50 ml

Raw Data result: 91.96461ug/L

91.96461 ug/L * 0.05L/0.05L = 91.965 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer JCleveland **Date:** 10/13/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907175

The indicated Sample Delivery Group (SDG) consisting of twenty (20) water samples was received into the laboratory information management system (LIMS) on July 22, 23, and 24, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 1.1 to 9.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0907175-07 ID YS03-SW10-0709S and YS03-SW10-0709SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0907175-07 ID YS03-SW10-0709D was inside control limits for the requested analytes except aluminum.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0907175-07 ID YS03-SW10-0709L was performed in accordance with requirements for ICP analysis.

The adjusted sample concentration was inside control limits for the requested analytes except sodium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Fowler for Susan Bass

Susan W. Bass
Senior Chemist
August 12, 2009

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907175

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	215.50	107.8		
Antimony				60.0	60.24	100.4		
Arsenic				10.0	9.93	99.3		
Barium				200.0	197.72	98.9		
Beryllium				5.0	5.10	102.0		
Cadmium				5.0	4.99	99.8		
Calcium				2000.0	2096.38	104.8		
Chromium				10.0	9.15	91.5		
Cobalt				50.0	50.13	100.3		
Copper				25.0	24.45	97.8		
Iron				100.0	96.96	97.0		
Lead				3.0	1.59	0.0		
Magnesium				2000.0	2016.10	100.8		
Manganese				15.0	14.52	96.8		
Mercury	0.2	0.23	115.0					
Nickel				40.0	38.98	97.4		
Potassium				2000.0	1565.97	78.3		
Selenium				5.0	6.86	137.2		
Silver				10.0	9.73	97.3		
Sodium				2000.0	1957.90	97.9		
Thallium				10.0	12.92	129.2		
Vanadium				50.0	50.36	100.7		
Zinc				20.0	17.50	87.5		

53% L/ML up to 2X RL (6)

K+ up to 2X RL (10)

Control Limits: no limits have been established by EPA at this time

Se - only + in YS01-FB02-072306

Pb - flag all

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	45.6	B	51.4	B	200.000	U	P
Antimony	10.0	U	-2.1	B	-1.8	B	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	-4.370	B	P
Barium	-0.4	B	-0.4	B	-0.4	B	200.0	U	-0.472	B	P
Beryllium	5.0	U	5.0	U	0.4	B	0.5	B	5.000	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	-0.539	B	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Chromium	1.1	B	7.0	B	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	-0.688	B	P
Copper	5.0	U	5.0	U	-1.3	B	-0.9	B	-0.932	B	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	1.8	B	3.0	U	3.0	U	3.0	U	2.303	B	P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Manganese	10.0	U	0.8	B	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV
Nickel	1.3	B	4.7	B	40.0	U	40.0	U	-1.926	B	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	4.0	B	5.0	U	5.0	U	5.000	U	P
Silver	-0.3	B	-0.4	B	-0.8	B	-0.4	B	-1.183	B	P
Sodium	5000.0	U	5000.0	U	248.1	B	225.9	B	663.141	B	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	-4.940	B	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	6.5	B	6.5	B	20.000	U	P

YS03-SW10 ↓ SW12

YS03-SW11 SW08 SW09 SW07 YS01-SW33 ↓ SW32

YS03-SW06 SW05 SW05P YS01-SW31 SW31P

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			60.5	B	73.7	B					P
Antimony			10.0	U	10.0	U					P
Arsenic			10.0	U	10.0	U					P
Barium			200.0	U	200.0	U					P
Beryllium			0.6	B	0.8	B					P
Cadmium			0.3	B	0.4	B					P
Calcium			5000.0	U	5000.0	U					P
Chromium			0.9	B	0.8	B					P
Cobalt			5.0	U	5.0	U					P
Copper			-1.0	B	-1.1	B					P
Iron			100.0	U	100.0	U					P
Lead			3.0	U	3.0	U					P
Magnesium			5000.0	U	5000.0	U					P
Manganese			10.0	U	10.0	U					P
Mercury			0.200	U	0.200	U					CV
Nickel			40.0	U	40.0	U					P
Potassium			19.6	B	5000.0	U					P
Selenium			5.0	U	5.0	U					P
Silver			-0.3	B	-0.5	B					P
Sodium			274.0	B	153.0	B					P
Thallium			10.0	U	10.0	U					P
Vanadium			0.5	B	0.6	B					P
Zinc			6.7	B	6.4	B					P

ND

ND

See ICB

See PBW

See PBW

ND

YS03-SW06
SW05
SW05P
YS01-SW31
SW31P

More assoc

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	-38.9	B			P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U			P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U			P
Barium	-0.4	B	-0.4	B	-0.5	B	200.0	U			P
Beryllium	5.0	U	5.0	U	5.0	U	5.0	U			P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U			P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U			P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U			P
Copper	5.0	U	5.0	U	5.0	U	5.0	U			P
Iron	100.0	U	100.0	U	100.0	U	100.0	U			P
Lead	3.0	U	3.0	U	3.0	U	3.0	U			P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U			P
Nickel	40.0	U	40.0	U	40.0	U	40.0	U			P
Potassium	5000.0	U	-19.7	B	-22.9	B	-21.4	B			P
Selenium	5.0	U	5.0	U	3.2	B	5.0	U			P
Silver	5.0	U	5.0	U	5.0	U	5.0	U			P
Sodium	5000.0	U	-146.2	B	-124.0	B	5000.0	U			P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U			P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U			P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U			P

Sodium & Magnesium only No Quals

AMENDED DATA

SW846 - METALS

6

DUPLICATES

SAMPLE NO.

YS03-SW10-0709D

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	200.0	1189.7680		639.6888		60.1	*	P
Antimony		10.0000	U	10.0000	U			P
Arsenic		10.0000	U	10.0000	U			P
Barium		28.0169	B	26.9381	B	3.9		P
Beryllium		5.0000	U	5.0000	U			P
Cadmium		5.0000	U	5.0000	U			P
Calcium		225170.1000		234930.3000		4.2		P
Chromium		0.6572	B	0.9860	B	40.0		P
Cobalt		5.0000	U	5.0000	U			P
Copper		5.0000	U	5.0000	U			P
Iron		844.2266		794.4458		6.1		P
Lead		3.0000	U	3.0000	U			P
Magnesium		679239.8400		727212.0000		6.8		P
Manganese		55.8045		57.7843		3.5		P
Mercury		0.2000	U	0.1490	B	200.0		CV
Nickel		40.0000	U	40.0000	U			P
Potassium		317313.1800		335191.9000		5.5		P
Selenium		5.0000	U	5.0000	U			P
Silver		5.0000	U	5.0000	U			P
Sodium		5067550.0800		5189132.1600		2.4		P
Thallium		10.0000	U	10.0000	U			P
Vanadium		4.3073	B	3.7715	B	13.3		P
Zinc		6.8057	B	7.7399	B	12.8		P

STUJ

AMENDED DATA

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-SW10-0709L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907175

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	1189.77		1009.66		15.1		P
Antimony	10.00	U	50.00	U			P
Arsenic	10.00	U	50.00	U			P
Barium	28.02	B	25.54	B	8.9		P
Beryllium	5.00	U	25.00	U			P
Cadmium	5.00	U	25.00	U			P
Calcium	225170.10		236344.50		5.0		P
Chromium	0.66	B	50.00	U	100.0		P
Cobalt	5.00	U	25.00	U			P
Copper	5.00	U	25.00	U			P
Iron	844.23		422.16	B	50.0		P
Lead	3.00	U	15.00	U			P
Magnesium	679239.84		731268.50		7.7		P
Manganese	55.80		54.01		3.2		P
Mercury	0.10	B	1.00	U	100.0		CV
Nickel	40.00	U	200.00	U			P
Potassium	317313.18		285818.70		9.9		P
Selenium	5.00	U	25.00	U			P
Silver	5.00	U	25.00	U			P
Sodium	5067550.08		3107974.00		38.7	E	P
Thallium	10.00	U	50.00	U			P
Vanadium	4.31	B	3.57	B	17.2		P
Zinc	6.81	B	8.65	B	27.0		P

JMJ

AMENDED DATA

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907180

The indicated Sample Delivery Group (SDG) consisting of fifteen (15) dissolved water samples was received into the laboratory information management system (LIMS) on July 22, 23, and 24, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 1.1 to 9.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0907180-05 ID YS03-SW10-0709S and YS03-SW10-0709SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0907180-05 ID YS03-SW10-0709D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0907180-05 ID YS03-SW10-0709L was performed in accordance with requirements for ICP analysis.

The adjusted sample concentration was inside control limits for the requested analytes except barium and potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
August 13, 2009

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907180

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	215.50	107.8		
Antimony				60.0	60.24	100.4		
Arsenic				10.0	9.93	99.3		
Barium				200.0	197.72	98.9		
Beryllium				5.0	5.10	102.0		
Cadmium				5.0	4.99	99.8		
Calcium				2000.0	2096.38	104.8		
Chromium				10.0	9.15	91.5		
Cobalt				50.0	50.13	100.3		
Copper				25.0	24.45	97.8		
Iron				100.0	96.96	97.0		
Lead				3.0	1.59	0.0		
Magnesium				2000.0	2016.10	100.8		
Manganese				15.0	14.52	96.8		
Mercury	0.2	0.23	115.0					
Nickel				40.0	38.98	97.4		
Potassium				2000.0	1565.97	78.3		
Selenium				5.0	6.86	137.2		
Silver				10.0	9.73	97.3		
Sodium				2000.0	1957.90	97.9		
Thallium				10.0	12.92	129.2		
Vanadium				50.0	50.36	100.7		
Zinc				20.0	17.50	87.5		

53% L/UL ✓

K+ ✓

Control Limits: no limits have been established by EPA at this time

Pb - UL in all

Se - K+ in YS03-SW06

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	45.6	B	51.4	B	82.114	B	P
Antimony	10.0	U	-2.1	B	-1.8	B	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Barium	-0.4	B	-0.4	B	-0.4	B	200.0	U	-0.498	B	P
Beryllium	5.0	U	5.0	U	0.4	B	0.5	B	0.732	B	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Chromium	1.1	B	7.0	B	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	-1.3	B	-0.9	B	-2.838	B	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	-1.8	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Manganese	10.0	U	0.8	B	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV
Nickel	1.3	B	4.7	B	40.0	U	40.0	U	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	4.0	B	5.0	U	5.0	U	5.000	U	P
Silver	-0.3	B	-0.4	B	-0.8	B	-0.4	B	-1.118	B	P
Sodium	5000.0	U	5000.0	U	248.1	B	225.9	B	184.636	B	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	6.5	B	6.5	B	20.000	U	P

NQ

NQ

NQ

Sol PREP

NQ

None assoc.

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			109.1	B	109.7	B	109.4	B	see PB		P
Antimony			10.0	U	10.0	U	10.0	U			P
Arsenic			10.0	U	10.0	U	10.0	U			P
Barium			-0.4	B	200.0	U	200.0	U			P
Beryllium			1.0	B	1.1	B	1.1	B	see PB		P
Cadmium			5.0	U	5.0	U	5.0	U			P
Calcium			5000.0	U	5000.0	U	5000.0	U			P
Chromium			10.0	U	10.0	U	10.0	U			P
Cobalt			5.0	U	5.0	U	5.0	U			P
Copper			-2.1	B	-2.6	B	-2.3	B	see PBLK		P
Iron			100.0	U	100.0	U	100.0	U			P
Lead			3.0	U	3.0	U	3.0	U			P
Magnesium			5000.0	U	5000.0	U	5000.0	U			P
Manganese			10.0	U	10.0	U	10.0	U			P
Mercury			0.200	U							CV
Nickel			40.0	U	40.0	U	40.0	U			P
Potassium			5000.0	U	5000.0	U	5000.0	U			P
Selenium			5.0	U	5.0	U	5.0	U			P
Silver			-1.0	B	-1.4	B	-1.3	B	see PBLK		P
Sodium			5000.0	U	5000.0	U	190.7	B	NQ		P
Thallium			10.0	U	4.3	B	10.0	U			P
Vanadium			20.0	U	20.0	U	0.5	B	✓		P
Zinc			20.0	U	20.0	U	20.0	U			P

YS03 - SW10
↓ SW12

YS03 - SW11
YS01 - 33
32
YS03 08
09
07
06
05 05P

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			81.4	B	96.0	B	see PBLK				P
Antimony			10.0	U	10.0	U					P
Arsenic			10.0	U	10.0	U					P
Barium			-0.5	B	-0.4	B	NQ				P
Beryllium			0.9	B	1.1	B	see PBLK				P
Cadmium			5.0	U	5.0	U					P
Calcium			5000.0	U	5000.0	U					P
Chromium			-0.8	B	10.0	U					P
Cobalt			5.0	U	5.0	U					P
Copper			-2.4	B	-2.7	B	see PBLK				P
Iron			100.0	U	100.0	U					P
Lead			3.0	U	3.0	U					P
Magnesium			5000.0	U	5000.0	U					P
Manganese			10.0	U	10.0	U					P
Nickel			40.0	U	40.0	U					P
Potassium			5000.0	U	5000.0	U					P
Selenium			5.0	U	5.0	U					P
Silver			-1.0	B	-1.4	B	see PBLK				P
Sodium			325.4	B	279.5	B	NQ				P
Thallium			10.0	U	4.7	B	✓				P
Vanadium			20.0	U	0.5	B	✓				P
Zinc			20.0	U	20.0	U					P

YS03-SW11
YS01 SW33
32
YS03 08
09
07
06
05
05P

YS01-SW31
SW31P

AMENDED DATA

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS03-SW10-0709L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907180

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	101.28	B	467.19	B	361.3		P
Antimony	10.00	U	50.00	U			P
Arsenic	10.00	U	50.00	U			P
Barium	25.12	B	22.58	B	10.1	E	P
Beryllium	0.94	B	4.21	B	347.9		P
Cadmium	5.00	U	25.00	U			P
Calcium	237862.80		235473.40		1.0		P
Chromium	10.00	U	50.00	U			P
Cobalt	5.00	U	25.00	U			P
Copper	5.00	U	25.00	U			P
Iron	47.32	B	500.00	U	100.0		P
Lead	3.00	U	15.00	U			P
Magnesium	708697.04		726095.70		2.5		P
Manganese	15.29		13.43	B	12.2		P
Mercury	0.20	U	1.00	U			CV
Nickel	40.00	U	200.00	U			P
Potassium	351462.68		288180.90		18.0	E	P
Selenium	5.00	U	25.00	U			P
Silver	5.00	U	25.00	U			P
Sodium	5585593.60		5898376.00		5.6		P
Thallium	10.00	U	23.64	B	100.0		P
Vanadium	2.38	B	6.18	B	159.7		P
Zinc	9.07	B	100.00	U	100.0		P

J/UJ

J/UJ

AMENDED DATA

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 13, 2009
SDG #s 0907201 and 0907203, CompuChem
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # 0907201 and 0907203. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles, SW-846 Method 6010B & 7470A for total and dissolved metals and standard methods SM2540C for total dissolved solids (TDS). Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Please note that samples YS03-SW03-0709, YS03-SW04-0709, YS03-EB01-072409 and YS03-EB02-072409 were incorrectly noted throughout the laboratory data package as YS01-SW03-0709, YS01-SW04-0709, YS01-EB01-072409 and YS01-EB02-072409, respectively. These IDs were corrected on the Form 1s in this validation report but corrections were not requested from the laboratory for the data package. The QC tracking memo is included in this validation report and contains a cross reference of the sample IDs and alias sample IDs. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	VOA	TMetals	DMetals	TDS
YS03-EB01-072409	0907201-03	water	X	X		
YS03-EB02-072409	0907201-04	water	X	X	X	X
YS03-SW03-0709	0907201-01	water	X	X	X	X
YS03-SW04-0709	0907201-02	water	X	X	X	X
YS03-TB01-072409	0907201-05	water	X			

The following quality control samples were provided with this SDG: samples YS03-EB03-072409 and YS03-EB02-072409-equipment blanks and sample YS03-TB01-072409-trip blank.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *

- Technical Holding Times *
- GC/MS Tuning *
- Initial/Continuing Calibrations
- RL Standards
- Interference Check Sample *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Post Digestion Spike Recoveries *
- Serial Dilutions
- Field Duplicates NA
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial calibration exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The initial calibration exhibited low RRF values that required positive values be estimated.

Blank contamination was noted in the QC blanks associated with samples in this batch. Qualifications were added to the data.

Total & Dissolved Metals

The RL standards exhibited low recoveries for two analytes that resulted in qualification of some results.

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The serial dilutions associated with the samples exhibited non-compliant %Ds for two analytes and qualifications were required.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Total Dissolved Solids (TDS)

No qualifications to the data were required.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 7/24/09 and samples were received at the laboratory 7/25/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 7/29/09	acetone 2-butanone	0.0297 0.0484	all samples	L/R	ICL

Total & Dissolved Metals

The RL standards associated with samples in this SDG exhibited non-compliant recoveries for two analytes. A summary of these non-compliances and affected samples are noted in the following table.

Standard ID	Analyte(s)	%R	Samples	Q Flag	Q Code
RL Standard	lead*	53%	all total metals samples	L/UL	OT
RL Standard	zinc*	64.2%	all dissolved metals samples	L/UL	OT

*Please note that in total metals field samples lead was flagged due to negative blank contamination with a MBL qualifier code and in dissolved metals field samples zinc was flagged due to negative blank contamination with a MBL qualifier code.

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS03-TB01-072409	acetone	1.6J ug/L	2.5 ug/L	16 ug/L
YS03-EB01-072409	acetone	5.2	2.5	52
YS03-EB02-072409	acetone	5.3	2.5	53
YS01-FB01-072309	acetone	3.3	2.5	33

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS03-SW03-0709, YS03-SW04-0709	acetone	B	BL

Total and Dissolved Metals

Blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	aluminum	100.289B ug/L	501.445 ug/L	B	MBL
	beryllium	0.890B ug/L	4.45 ug/L	B	MBL
	copper	-2.210B ug/L	≤ 10X MDL (9 ug/L)	L/UL	MBL
	silver	-1.051B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
ICB/CCB – total metals	lead	-1.8 B ug/L	≤ 10X MDL (18 ug/L)	L/UL	MBL
YS03-EB02-072409	zinc	10.1B ug/L	50.5 ug/L	B	EBL
YS01-FB01-072309	zinc	1.3B ug/L	6.5 ug/L	B	FBL

Associated samples and required qualifications are noted in the following table.

Sample ID	analyte	Q Flag	Q Code
all field samples	aluminum	B	MBL
all field samples	beryllium	B	MBL
all field samples	copper	L/UL	MBL
all field samples	silver	L/UL	MBL
all field samples	lead	L/UL	MBL
all field samples	zinc	B	EBL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	cadmium	-0.544B	≤ 10X MDL (3 ug/L)	L/UL	MBL
	zinc	-4.585B	≤ 10X MDL (11 ug/L)	L/UL	MBL
ICB/CCB – dissolved metals	mercury	-0.116 ug/L	≤ 10X MDL (1 ug/L)	L/UL	MBL
	aluminum	56.6B ug/L	283 ug/L	B	MBL

Associated samples and required qualifications are noted in the following table.

Sample ID	analyte	Q Flag	Q Code
all field samples	cadmium	UL	MBL
all field samples	zinc	UL	MBL
all field samples	mercury	UL	MBL
all field samples	aluminum	B	MBL

Serial Dilutions

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS03-SW03-0709	sodium	all total metals field samples	32.4%	J/UJ	SD
	potassium	all dissolved metals field samples	14.6%	J/UJ	SD

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Identification/Quantitation

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
3
YS01-EB0
1-072409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0371

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.2	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS02-EB0
1-072409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0371

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
~~YSQ1~~ 3
YSQ1-EB0
2-072409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0471

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.3	J ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R ICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS0X-EB0 3
2-072409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0471

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS02-SW03-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0171

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.2	B, BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS02-SW03-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0171

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-SW04-0709 (3)

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0271

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.4	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-SW04-0709

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0271

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-072409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0571

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.6	J LICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-TB0
1-072409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix: (soil/water) WATER Lab Sample ID: 0907201-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0907201-0571

Level: (low/med) LOW Date Received: 07/25/09

% Moisture: not dec. _____ Date Analyzed: 08/05/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YSQ1-SW04-0709
3

Lab Name: COMPUCHEM Contract: _____ x1corr JAC 10909

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907201

Matrix (soil/water): WATER Lab Sample ID: 0907201-02

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	437		B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	29.6	~~B~~	J	P	
7440-41-7	Beryllium	0.80	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	232000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	506			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	~~DT~~MBL
7439-95-4	Magnesium	684000		~~D~~	P	
7439-96-5	Manganese	52.4			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	338000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5190000		~~D~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.3	~~B~~	J	P	
7440-66-6	Zinc	5.0	~~B~~	B	P	EBL

x1corr JAC 10/10/09

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture: _____

Color After: COLORLESS Clarity After: CLEAR Artifacts: _____

Comments: AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YSOC-SW03-0709
3

Lab Name: COMPUCHEM Contract: X1 corr JAC 10909

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix (soil/water): WATER Lab Sample ID: 0907201-01

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	413		B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	29.2	~~B~~	J	P	
7440-41-7	Beryllium	0.80	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	230000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	~~U~~	UL	P	MBL
7439-89-6	Iron	526			P	
7439-92-1	Lead	3.0	~~U~~	UL	P	CFMBL X1 corr JAC 10/1/09
7439-95-4	Magnesium	708000		~~B~~	P	
7439-96-5	Manganese	62.3			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	336000			P	
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5310000		~~B~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.7	~~B~~	J	P	
7440-66-6	Zinc	3.5	~~B~~	B	P	EBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-EB02-072409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix (soil/water): WATER Lab Sample ID: 0907201-04

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	92.9	~~B~~	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.78	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	78.6	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	33.6	~~B~~	J	P
7439-92-1	Lead	2.0	~~B~~	J	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	924	~~B~~	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	0.49	~~B~~	J	P
7440-66-6	Zinc	10.1	~~B~~	J	P

OT

xlcom JAC 10909

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS03-EB01-072409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix (soil/water): WATER Lab Sample ID: 0907201-03

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	89.7	~~B~~	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.80	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	115	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	2.2	~~B~~	L	P OT
7439-95-4	Magnesium	24.2	~~B~~	J	P
7439-96-5	Manganese	0.86	~~B~~	J	P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	72.8	~~B~~	J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	1210	~~B~~	~~E~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	6.9	~~B~~	J	P

xl com JQC 10909

JQC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

AMENDED DATA

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SW04-0709
3

XICOM JAC 10909

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Matrix (soil/water): WATER Lab Sample ID: 0907203-02

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	34.5	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.4	~~B~~	J	P	
7440-39-3	Barium	26.2	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	228000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	61.4	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	727000		~~B~~	P	AA
7439-96-5	Manganese	30.3			P	
7439-97-6	Mercury	0.20	~~U~~	UL	CV	MBL
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	353000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	5680000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.0	~~B~~	J	P	
7440-66-6	Zinc	20.0	~~U~~	UL	P	DTMBL

JAC 10909

XICOM JAC 10/10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS01-SW03-0709 3

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Matrix (soil/water): WATER Lab Sample ID: 0907203-01

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	33.5	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.0	~~B~~	J	P	
7440-39-3	Barium	27.4	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	231000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	62.7	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	718000		~~U~~	P	
7439-96-5	Manganese	41.2			P	
7439-97-6	Mercury	0.20	~~U~~	UL	CV	MBL
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	352000		~~J~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	5590000		~~U~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.0	~~B~~	J	P	
7440-66-6	Zinc	20.0	~~U~~	UL	P	~~UT~~MBL

xl corr JAC 101109

JVC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

AMENDED DATA

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS07-EB02-072409
3

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Matrix (soil/water): WATER Lab Sample ID: 0907203-03

Level (low/med): LOW Date Received: 7/25/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	161	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	82.7	~~B~~	J	P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	26.2	~~B~~	J J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	227	~~B~~	J	P
7440-28-0	Thallium	4.4	~~B~~	J	P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	20.0	~~U~~	UJ	P

OT

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

AMENDED DATA

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/03/2009 14:05

YS03-SW03-0709 XICorr JAC 10/1/09
0907201-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	**25000**	10	mg/L	1	9072927	07/28/2009 08:13	07/28/2009 14:02	SM 2540C

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/03/2009 14:05

YS07-SW04-0709 (3) xlcorr JAC 10/09
0907201-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	25000	10	mg/L	1	9072927	07/28/2009 08:13	07/28/2009 14:02	SM 2540C

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/03/2009 14:05

YS03-EB02-072409 X1 corr JAC 10/09
0907201-04 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	ND	10	mg/L	1	9072927	07/28/2009 08:13	07/28/2009 14:02	SM 2540C U

JAC 10809

CTO-166

CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

№ 03876

Page 1 of 1

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Verizon NNS Site 2
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)-671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: C. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem Sample ID (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Preserved: HCl	Preserved: NaOH	Preserved: HNO3	Preserved: H2SO4	Preserved: MEOH	Preserved: Other	VOCs 8260 40mL	Metals ILMO5.3 1000mL	Filtered Metals ILM05.3 1000mL	TDS 160.1 500mL	AVS/SEM 7 metals 4oz	Grain Size D422 8oz	Metals, Alkalinity, pH, TCC 8oz	AVS/SEM 4oz	PH of Sample Info (Lab Use) Metals / Nutrients
0907201-01 (0907203-01)	YSO1-SW03-0709	7/24/09	1400	SW	6	3		2				3	1	1	1					<2 <2
0907117-15 (0907181-13)	YSO1-SD03-0709		1410	SO	7							3				1	2	1	0907182-15	
0907201-02 (0907203-02)	YSO1-SW04-0709		1430	SW	6	3		2				3	1	1	1					<2 <2
0907117-16 (0907181-14)	YSO1-SD04-0709		1445	SO	7							3				1	2	1	0907182-16	
0907201-05	YSO1-TB01-072409		1500	TB	3	3						3								
0907201-03	YSO1-EB01-072409		1510	AQ	4	3		1				3	1							<2
0907201-04 (0907208-03)	YSO1-EB02-072409	↓	1515	AQ	6	3		2				3	1	1	1					<2 <2

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

EB01 = SO
EB02 = SW

Sample Custody

Relinquished by:	Date/Time: 7/24/09 1700	Received by: K. Manning	Date/Time: 7-25-09 1130
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? AVS/SEM to CAS; Grain size to CTLABS
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 1.8 °C

Samples ... 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

030

Sample ID	Sample Alias	Sample Date	Field Blank	Equipment Blank	Trip Blank	Duplicate	SDG 1	SDG 2	SDG 3	SDG4
YS01-SW31-0709		7/23/2009	YS01-FB01-072309	YS01-EB01-072309	YS01-TB01-072309	YS01-SW31P-0709	0907175	0907180		
YS01-SW32-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS01-SW33-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS01-SD30-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309		0907174	0907181	0907182	
YS01-SD31-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309	YS01-SD31P-0709	0907174	0907181	0907182	
YS01-SD32-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS01-SD33-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS03-SW03-0709	YS01-SW03-0709	7/24/2009	YS01-FB01-072309	YS03-EB02-072409	YS03-TB01-072409		0907201	0907203		
YS03-SW04-0709	YS01-SW04-0709	7/24/2009	YS01-FB01-072309	YS03-EB02-072409	YS03-TB01-072409		0907201	0907203		
YS03-SW05-0709		7/23/2009	YS01-FB01-072309	YS01-EB01-072309	YS01-TB01-072309	YS03-SW05P-0709	0907175	0907180		
YS03-SW06-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW07-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW08-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW09-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW10-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW11-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS03-SW12-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS03-SD03-0709	YS01-SD03-0709	7/24/2009	YS01-FB02-072309	YS03-EB01-072409	YS03-TB01-072409		0907174	0907181	0907182	
YS03-SD04-0709	YS01-SD04-0709	7/24/2009	YS01-FB02-072309	YS03-EB01-072409	YS03-TB01-072409		0907174	0907181	0907182	
YS03-SD05-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309	YS03-SD05P-0709	0907174	0907181	0907182	
YS03-SD06-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD07-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD08-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD09-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD10-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD11-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS03-SD12-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS06-SW68-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409	YS06-SW68P-0809	0908016	0908017	0908036	
YS06-SW69-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW70-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW71-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW72-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW73-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509		0908016	0908017	0908036	
YS06-SW74-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509	YS06-SW74P-0809	0908016	0908017	0908036	
YS06-SW75-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509		0908016	0908017	0908036	
YS06-SW76-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SW77-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SW78-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SD68-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409	YS06-SD68P-0809	0908015	0908034	0908033	0908035
YS06-SD69-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD70-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD71-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD72-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD73-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509		0908015	0908034	0908033	0908035
YS06-SD74-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509	YS06-SD74P-0809	0908015	0908034	0908033	0908035
YS06-SD75-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509		0908015	0908034	0908033	0908035
YS06-SD76-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035
YS06-SD77-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035
YS06-SD78-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035

Equipment Blanks										
YS01-EB01-072309		7/23/2009					907175	907180		
YS01-EB02-072309		7/23/2009					907175			
YS03-EB01-072109		7/21/2009					907175			
YS03-EB01-072209		7/22/2009					907175			
YS03-EB02-072209		7/22/2009					907175	907180		
YS03-EB01-072409	YS01-EB01-072409	7/24/2009					907201			
YS03-EB02-072409	YS01-EB02-072409	7/24/2009					907201	907203		
YS06-EB02-080409		8/4/2009					908016	908017	908036	
YS06-EB01-080409		8/4/2009					908016	908036		
YS06-EB01-080509		8/5/2009					908016	908017	908036	
YS06-EB02-080509		8/5/2009					908016	908036		
YS06-EB01-080609		8/6/2009					908016	908017	908036	
YS06-EB02-080609		8/6/2009					908039	908036		
Field Blanks										
YS01-FB01-072309		7/23/2009					907175			
YS01-FB02-072309		7/23/2009					907175			
YS06-FB01-080409		8/4/2009					908016	908036		
YS06-FB02-080409		8/4/2009					908016	908036		
Trip Blanks										
YS01-TB01-072309		7/23/2009					907175			
YS03-TB01-072109		7/21/2009					907175			
YS03-TB01-072209		7/22/2009					907175			
YS03-TB01-072409	YS01-TB01-072409	7/24/2009					907201			
YS06-TB01-080409		8/4/2009					908016			
YS06-TB01-080509		8/5/2009					908016			
YS06-TB01-080609		8/6/2009					908016			

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 7/24/09
Received Date: 7/25/09
Analysis Dates: 8/5/09

Cooler Temps: 1.8°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

No contamination was exhibited in the method blanks-no qualifications were required. The associated QC blanks for these samples were: YS01-TB01-072409- trip blank; YS01-FB01-072309 - field blank; YS01-EB01-072409 and YS01-EB02-072409- equipment blank.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS01-TB01-072409	acetone	1.6J ug/L	2.5 ug/L	16 ug/L
YS01-EB01-072409	acetone	5.2	2.5	52
YS01-EB02-072409	acetone	5.3	2.5	53
YS01-FB01-072309	acetone	3.3	2.5	33

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-SW03-0709, YS01-SW04-0709	acetone	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascellaro **Date:** 10/8/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Lab File ID: 9G29003-TUN171 BFB Injection Date: 07/29/09

Instrument ID: 5972HP71 BFB Injection Time: 1119

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	30.2
75	30.0 - 60.0% of mass 95	54.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.5
175	5.0 - 9.0% of mass 174	5.6 (7.3)1
176	95.0 - 101.0% of mass 174	74.8 (97.9)1
177	5.0 - 9.0% of mass 176	5.0 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD001	9G29003-CAL	9G29003-CAL271	07/29/09	1212
02	VSTD0.5	9G29003-CAL	9G29003-CAL171	07/29/09	1240
03	VSTD040	9G29003-CAL	9G29003-CAL671	07/29/09	1308
04	VSTD020	9G29003-CAL	9G29003-CAL571	07/29/09	1337
05	VSTD010	9G29003-CAL	9G29003-CAL471	07/29/09	1405
06	VSTD005	9G29003-CAL	9G29003-CAL3R7	07/29/09	1433
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FORM V VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Instrument ID: 5972HP71 Calibration Date(s): 07/29/09 07/29/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1212 1433

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.58044422	8.442	15.000	
Chloromethane	AVRG		0.54347349	12.505	15.000	
Vinyl Chloride	AVRG		0.42424091	7.586	30.000	
Bromomethane	LINR	0.01248902	5.39879286	0.9987375	0.9900000	<-
Chloroethane	AVRG		0.17044969	12.278	15.000	
Trichlorofluoromethane	AVRG		0.37922391	9.671	15.000	
1,1-Dichloroethene	AVRG		0.28803152	4.484	30.000	
Carbon disulfide	AVRG		1.13334988	2.616	15.000	
1,1,2-trichloro-1,2,2-triflu	LINR	-0.1085456	6.09822063	0.9994570	0.9900000	LR
Acetone	AVRG		0.0297278	9.785	15.000	
Methyl acetate	AVRG		0.11661267	8.214	15.000	
Methylene Chloride	LINR	-0.1582469	3.77476672	0.9996028	0.9900000	
trans-1,2-Dichloroethene	AVRG		0.33053945	1.522	15.000	
Methyl-tert-butyl ether	AVRG		0.45263875	8.047	15.000	
1,1-Dichloroethane	AVRG		0.60186829	3.684	15.000	
s-1,2-Dichloroethene	AVRG		0.35182961	7.920	15.000	LR
utanone	AVRG		0.04840930	11.449	15.000	
Chloroform	AVRG		0.58355410	3.775	30.000	
1,1,1-Trichloroethane	AVRG		0.51098992	5.680	15.000	
Carbon Tetrachloride	AVRG		0.46022911	8.238	15.000	
Benzene	AVRG		1.13198758	6.197	15.000	
1,2-Dichloroethane	AVRG		0.33881795	6.496	15.000	
Trichloroethene	AVRG		0.33009940	6.437	15.000	
1,2-Dichloropropane	AVRG		0.28852169	5.642	30.000	
Bromodichloromethane	AVRG		0.38307137	5.421	15.000	
cis-1,3-Dichloropropene	AVRG		0.39453784	6.388	15.000	
4-Methyl-2-pentanone	AVRG		0.17546430	11.345	15.000	
Toluene	AVRG		1.03784187	7.460	30.000	
trans-1,3-Dichloropropene	AVRG		0.49724081	4.539	15.000	
1,1,2-Trichloroethane	AVRG		0.21662907	3.974	15.000	
Tetrachloroethene	LINR	0.00180823	2.65878971	0.9996016	0.9900000	
2-hexanone	AVRG		0.11911839	12.784	15.000	
Dibromochloromethane	AVRG		0.31575791	3.488	15.000	
1,2-Dibromoethane	AVRG		0.23652709	3.911	15.000	
Chlorobenzene	AVRG		1.07574461	8.756	15.000	
Ethylbenzene	AVRG		0.59133985	11.082	30.000	
m,p-Xylene	AVRG		0.76230840	10.018	15.000	
o-Xylene	AVRG		0.68220817	10.489	15.000	
Styrene	AVRG		1.09078202	13.777	15.000	
Bromoform	AVRG		0.15822018	6.573	15.000	
Isopropyl Benzene	AVRG		1.73880192	13.809	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.52144322	3.286	15.000	
1,3-Dichlorobenzene	AVRG		1.66243456	14.012	15.000	
1,4-Dichlorobenzene	AVRG		1.67035663	14.272	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Lab File ID: 9H05005-TUN171 BFB Injection Date: 08/05/09

Instrument ID: 5972HP71 BFB Injection Time: 1317

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	28.5
75	30.0 - 60.0% of mass 95	54.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.3
173	Less than 2.0% of mass 174	0.3 (0.3)1
174	Greater than 50.0% of mass 95	85.4
175	5.0 - 9.0% of mass 174	7.4 (8.6)1
176	95.0 - 101.0% of mass 174	85.2 (99.7)1
177	5.0 - 9.0% of mass 176	5.7 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9H05005-CCV	9H05005-CCV171	08/05/09	1341
02	VBLKGC	9080511-BLK	9080511-BLK1R7	08/05/09	1452
03	VGCLCS	9080511-BS1	9080511-BS171	08/05/09	1530
04	VGCLCSD	9080511-BSD	9080511-BSD171	08/05/09	1558
05	YS01-SW03-0709	0907201-01	0907201-0171	08/05/09	2157
06	YS01-SW04-0709	0907201-02	0907201-0271	08/05/09	2226
07	YS01-EB01-072409	0907201-03	0907201-0371	08/05/09	2254
08	YS01-EB02-072409	0907201-04	0907201-0471	08/05/09	2322
09	YS01-TB01-072409	0907201-05	0907201-0571	08/05/09	2350
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Instrument ID: 5972HP71 Calibration Date: 08/05/09 Time: 1341

Lab File ID: 9H05005-CCV171 Init. Calib. Date(s): 07/29/09 07/29/09

Init. Calib. Times: 1212 1433

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.5804400	0.4404318	0.4404318	0.001	-24.12	90.00	AVRG	
Chloromethane	0.5434700	0.4132861	0.4132861	0.1	-23.95	90.00	AVRG	
Vinyl Chloride	0.4242400	0.3478779	0.3478779	0.001	-18.00	20.00	AVRG	
Bromomethane	119.63498	125.00000	0.1749633	0.001	-4.29	90.00	LINR	
Chloroethane	0.1704500	0.1515125	0.1515125	0.001	-11.11	90.00	AVRG	
Trichlorofluoromethane	0.3792200	0.3699947	0.3699947	0.001	-2.43	90.00	AVRG	
1,1-Dichloroethene	0.2880300	0.2542563	0.2542563	0.001	-11.72	20.00	AVRG	
Carbon disulfide	1.1333500	0.9210883	0.9210883	0.001	-18.73	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	107.18946	125.00000	0.1584169	0.001	-14.25	90.00	LINR	
Acetone	0.0297300	0.0225703	0.0225703	0.001	-24.08	90.00	AVRG	L/R
Methyl acetate	0.1166100	0.1096591	0.1096591	0.001	-5.96	90.00	AVRG	
Methylene Chloride	97.869172	125.00000	0.2493400	0.001	-21.70	90.00	LINR	
ns-1,2-Dichloroethene	0.3305400	0.3003177	0.3003177	0.001	-9.14	90.00	AVRG	
hyl-tert-butyl ether	0.4526400	0.3851247	0.3851247	0.001	-14.92	90.00	AVRG	
1,1-Dichloroethane	0.6018700	0.5237552	0.5237552	0.1	-12.98	90.00	AVRG	
cis-1,2-Dichloroethene	0.3518300	0.3225038	0.3225038	0.001	-8.34	90.00	AVRG	L/R
2-butanone	0.0484100	0.0369007	0.0369007	0.001	-23.77	90.00	AVRG	
Chloroform	0.5835500	0.5392447	0.5392447	0.001	-7.59	20.00	AVRG	
1,1,1-Trichloroethane	0.5109900	0.4710535	0.4710535	0.001	-7.82	90.00	AVRG	
Carbon Tetrachloride	0.4602300	0.4195083	0.4195083	0.001	-8.85	90.00	AVRG	
Benzene	1.1319900	0.9555975	0.9555975	0.001	-15.58	90.00	AVRG	
1,2-Dichloroethane	0.3388200	0.2995402	0.2995402	0.001	-11.59	90.00	AVRG	
Trichloroethene	0.3301000	0.2813760	0.2813760	0.001	-14.76	90.00	AVRG	
1,2-Dichloropropane	0.2885200	0.2491667	0.2491667	0.001	-13.64	20.00	AVRG	
Bromodichloromethane	0.3830700	0.3387838	0.3387838	0.001	-11.56	90.00	AVRG	
cis-1,3-Dichloropropene	0.3945400	0.3241173	0.3241173	0.001	-17.85	90.00	AVRG	
4-Methyl-2-pentanone	0.1754600	0.1420431	0.1420431	0.001	-19.04	90.00	AVRG	
Toluene	1.0378400	0.8800753	0.8800753	0.001	-15.20	20.00	AVRG	
trans-1,3-Dichloropropene	0.4972400	0.4557902	0.4557902	0.001	-8.34	90.00	AVRG	
1,1,2-Trichloroethane	0.2166300	0.2067056	0.2067056	0.001	-4.58	90.00	AVRG	
Tetrachloroethene	112.68868	125.00000	0.3383875	0.001	-9.85	90.00	LINR	
2-hexanone	0.1191200	0.0956282	0.0956282	0.001	-19.72	90.00	AVRG	
Dibromochloromethane	0.3157600	0.3044311	0.3044311	0.001	-3.59	90.00	AVRG	
1,2-Dibromoethane	0.2365300	0.2164263	0.2164263	0.001	-8.50	90.00	AVRG	
Chlorobenzene	1.0757400	0.9385338	0.9385338	0.3	-12.75	90.00	AVRG	
Ethylbenzene	0.5913400	0.4877573	0.4877573	0.001	-17.52	20.00	AVRG	
m,p-Xylene	0.7623100	0.6078018	0.6078018	0.001	-20.27	90.00	AVRG	
o-Xylene	0.6822100	0.5600332	0.5600332	0.001	-17.91	90.00	AVRG	
Styrene	1.0907800	0.8630010	0.8630010	0.001	-20.88	90.00	AVRG	
Bromoform	0.1582200	0.1541779	0.1541779	0.1	-2.55	90.00	AVRG	
Isopropyl Benzene	1.7388000	1.4574053	1.4574053	0.001	-16.18	90.00	AVRG	
2,2-Tetrachloroethane	0.5214400	0.4877022	0.4877022	0.3	-6.47	90.00	AVRG	

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Instrument ID: 5972HP71 Calibration Date: 08/05/09 Time: 1341

Lab File ID: 9H05005-CCV171 Init. Calib. Date(s): 07/29/09 07/29/09

Init. Calib. Times: 1212 1433

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.6624300	1.4129709	1.4129709	0.001	-15.00	90.00	AVRG
1,4-Dichlorobenzene	1.6703600	1.4152200	1.4152200	0.001	-15.27	90.00	AVRG
1,2-Dichlorobenzene	1.3035800	1.1380732	1.1380732	0.001	-12.70	90.00	AVRG
1,2-Dibromo-3-Chloropropane	0.0833900	0.0713617	0.0713617	0.001	-14.42	90.00	AVRG
1,2,4-Trichlorobenzene	0.9292800	0.8413331	0.8413331	0.001	-9.46	90.00	AVRG
1,2-Dichloroethene (total)	0.3411800	0.3114108	0.3114108	0.001	-8.72	90.00	AVRG
Xylene (total)	0.6822100	0.5600332	0.5600332	0.001	-17.91	90.00	AVRG
Cyclohexane	100.86313	125.00000	0.3278987	0.001	-19.31	90.00	LINR
Methylcyclohexane	0.4705800	0.3757621	0.3757621	0.001	-20.15	90.00	AVRG
Dibromofluoromethane	118.56149	125.00000	0.2887612	0.001	-5.15	90.00	LINR
1,2-Dichloroethane-d4	106.91015	125.00000	0.1978121	0.001	-14.47	90.00	LINR
luene-d8	112.08361	125.00000	1.2270336	0.001	-10.33	90.00	LINR
omofluorobenzene	103.75596	125.00000	0.8628953	0.001	-17.00	90.00	LINR

Initial Calibration Date: 7/29/2009
RRF and %RSD Calculations:

Compound Name: chloromethane
Lab Value: 0.573

Area of Compound	2298724
Area of Internal STD	501590
Conc. of Internal STD	125
Conc. of Compound	1000
Calculated RRF	0.573

Compound Name: 4-methyl-2-pentanone
Lab Value: 11.35

RRF of STD 1	0.1837
RRF of STD 2	0.1352
RRF of STD 3	0.1827
RRF of STD 4	0.1882
RRF of STD 5	0.1806
RRF of STD 6	0.1824
Calculated % RSD	11.34

Continuing Calibration File ID: 8/5/2009
RRF and %D Calculations:

Compound Name: carbon disulfide
Lab Value: 0.921

Area of Compound	425295
Area of Internal STD	461731
Conc. of Internal STD	125
Conc. of Compound	125
Calculated RRF	0.921

Compound Name: benzene
Lab Value: 15.6

Average RRF	1.132
Calibration Check RRF	0.956
Calculated % D	15.6

CompuChem

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501 Madison Avenue
Cary, N.C. 27513
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SDG NARRATIVE

SDG # 0907201
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-SW03-0709, YS01-SW04-0709, YS01-EB01-072409, YS01-EB02-072409, and YS01-TB01-072409

The 5 aqueous samples listed above were received intact, refrigerated between 1.8°C, with proper documentation, in sealed shipping containers, on July 25, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0907201 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples were equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) in four/5 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration file 9G29003-CAL171. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blank met all quality control criteria. The associated Laboratory Control Samples (VGCLCSD) failed Percent Recoveries for Ethylene Benzene and Isopropyl Benzene; (VGCLCS) met overall accuracy criteria. There were no detects for the two compounds in the associated samples. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
August 10, 2009

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 7/24
Received Date: 7/25
Prep. Dates: no prep – dissolved; 7/30 ICP total; 8/5 dissolved, 7/30 total Hg
Analysis Dates: 8/7, 8/10 dissolved, 8/5-8/7 total ICP; 8/6 dissolved, 7/31 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria with the exception of zinc associated with the dissolved metals run and lead and selenium associated with the total metals run. All Pb results in total metals run and Zinc results in dissolved metals run required qualification as L/UL up to 2X RL due to low recoveries. There were no qualifications required for Se due to high CRI recoveries. Please note that zinc was flagged in the dissolved metals field samples due to negative blank contamination in the associated prep blank. ICSA/ICSAB results were acceptable. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

  L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	cadmium	-0.544B	≤ 10X MDL (3 ug/L)	L/UL	MBL
	zinc	-4.585B	≤ 10X MDL (11 ug/L)	L/UL	MBL
ICB/CCB – dissolved metals	mercury	-0.116 ug/L	≤ 10X MDL (1 ug/L)	L/UL	MBL
	aluminum	56.6B ug/L	283 ug/L	B	MBL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
all field samples	cadmium	UL	MBL
all field samples	zinc	UL	MBL
all field samples	mercury	UL	MBL
all field samples	aluminum	B	MBL

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	aluminum	100.289B ug/L	501.445 ug/L	B	MBL
	beryllium	0.890B ug/L	4.45 ug/L	B	MBL
	copper	-2.210B ug/L	≤ 10X MDL (9 ug/L)	L/UL	MBL
	silver	-1.051B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
ICB/CCB – total metals	lead	-1.8 B ug/L	≤ 10X MDL (18 ug/L)	L/UL	MBL
YS03-EB02-072409	zinc	10.1B ug/L	50.5 ug/L	B	EBL
YS01-FB01-072309	zinc	1.3B ug/L	6.5 ug/L	B	FBL

Total Metals

Sample ID	analyte	Q Flag	Q Code
all field samples	aluminum	B	MBL
all field samples	beryllium	B	MBL
all field samples	copper	L/UL	MBL
all field samples	silver	L/UL	MBL
all field samples	lead	L/UL	MBL
all field samples	zinc	B	EBL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

There were no MS/MSD pairs analyzed for this SDG. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses for both the total and dissolved fractions exhibited acceptable %Ds for all analytes except potassium in the dissolved metals analysis and sodium in the total metals analysis. Therefore, potassium was flagged as estimated J/UJ in dissolved metals field samples and sodium was flagged as estimated J/UJ in all total metals field samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Dissolved Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium			#DIV/0!
manganese			#DIV/0!
magnesium			#DIV/0!
selenium			#DIV/0!
zinc			#DIV/0!
sodium			#DIV/0!

Comments:

Total Metals

Sample ID: none Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium			#DIV/0!
manganese			#DIV/0!
magnesium			#DIV/0!
selenium			#DIV/0!
zinc			#DIV/0!
sodium			#DIV/0!

Comments:

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS03-SW04-0709
COMPOUND: sodium
CONCENTRATION: 5680000 ug/L
%Solids – na
50 ml

Raw Data result: 284040.5 ug/L

284040.5 ug/L * 0.05L/0.05L * 20 = 5680810 ug/L

Total Metals

EPA SAMPLE ID: YS03-SW03-0709
COMPOUND: manganese
CONCENTRATION: 62.3 ug/L
%Solids – na
50 ml

Raw Data result: 62.3077 ug/L

62.3077 ug/L * 0.05L/0.05L = 62.3077 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer JCleveland **Date:** 10/11/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907201

The indicated Sample Delivery Group (SDG) consisting of four (4) water samples was received into the laboratory information management system (LIMS) on July 25, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 1.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared and analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0907201-01 ID YS01-SW03-0709L was performed in accordance with requirements for ICP and CCN = 0907201-04 ID YS01-EB02-072409 for mercury analysis. The sample used for the mercury serial dilution is equipment blank. This was not discovered until after the analysis had been performed. Therefore it has been reported as is.

The adjusted sample concentration was inside control limits for the requested analytes except sodium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2. Bonesta for Susan Bass
Susan W. Bass
Senior Chemist
August 14, 2009

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907201

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	215.50	107.8		
Antimony				60.0	60.24	100.4		
Arsenic				10.0	9.93	99.3		
Barium				200.0	197.72	98.9		
Beryllium				5.0	5.10	102.0		
Cadmium				5.0	4.99	99.8		
Calcium				2000.0	2096.38	104.8		
Chromium				10.0	9.15	91.5		
Cobalt				50.0	50.13	100.3		
Copper				25.0	24.45	97.8		
Iron				100.0	96.96	97.0		
Lead				3.0	1.59	53.0		
Magnesium				2000.0	2016.10	100.8		
Manganese				15.0	14.52	96.8		
Mercury	0.2	0.16	80.0					
Nickel				40.0	38.98	97.4		
Potassium				2000.0	1565.97	78.3		
Selenium				5.0	6.86	137.2		
Silver				10.0	9.73	97.3		
Sodium				2000.0	1957.90	97.9		
Thallium				10.0	12.92	129.2		
Vanadium				50.0	50.36	100.7		
Zinc				20.0	17.50	87.5		

Pb UL up to 2X PQL (6)

K + up to 2X PQL (10)

Control Limits: no limits have been established by EPA at this time

all samples ASSX.

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	45.6	B	51.4	B	100.289	B	P
Antimony	10.0	U	-2.1	B	-1.8	B	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Barium	-0.4	B	-0.4	B	-0.4	B	200.0	U	-0.465	B	P
Beryllium	5.0	U	5.0	U	0.4	B	0.5	B	0.890	B	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Chromium	1.1	B	7.0	B	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	-1.3	B	-0.9	B	-2.210	B	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	-1.8	B	3.0	U	3.0	U	3.0	U	3.000	U	P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Manganese	10.0	U	0.8	B	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	-0.110	B	0.200	U	0.200	U	0.200	U	CV
Nickel	1.3	B	4.7	B	40.0	U	40.0	U	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	4.0	B	5.0	U	5.0	U	5.000	U	P
Silver	-0.3	B	-0.4	B	-0.8	B	-0.4	B	-1.051	B	P
Sodium	5000.0	U	5000.0	U	248.1	B	225.9	B	5000.000	U	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	6.5	B	6.5	B	20.000	U	P

all assoc

none associated

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			109.1	B	109.7	B	See PBLK				P
Antimony			10.0	U	10.0	U					P
Arsenic			10.0	U	10.0	U					P
Barium			-0.4	B NQ	200.0	U					P
Beryllium			1.0	B	1.1	B	See PBLK				P
Cadmium			5.0	U	5.0	U					P
Calcium			5000.0	U	5000.0	U					P
Chromium			10.0	U	10.0	U					P
Cobalt			5.0	U	5.0	U					P
Copper			-2.1	B	-2.6	B	See PBLK				P
Iron			100.0	U	100.0	U					P
Lead			3.0	U	3.0	U					P
Magnesium			5000.0	U	5000.0	U					P
Manganese			10.0	U	10.0	U					P
Nickel			40.0	U	40.0	U					P
Potassium			5000.0	U	5000.0	U					P
Selenium			5.0	U	5.0	U					P
Silver			-1.0	B	-1.4	B	See PBLK				P
Sodium			5000.0	U	5000.0	U					P
Thallium			10.0	U	4.3	B	NQ				P
Vanadium			20.0	U	20.0	U					P
Zinc			20.0	U	20.0	U					P

all samples assoc.

AMENDED DATA

SW846 - METALS

9
ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-SW03-0709L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907201

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	413.33		955.50	B	131.2		P
Antimony	10.00	U	50.00	U			P
Arsenic	10.00	U	50.00	U			P
Barium	29.20	B	29.77	B	2.0		P
Beryllium	0.80	B	4.09	B	411.2		P
Cadmium	5.00	U	25.00	U			P
Calcium	230405.30		241564.20		4.8		P
Chromium	10.00	U	50.00	U			P
Cobalt	5.00	U	4.54	B	100.0		P
Copper	5.00	U	25.00	U			P
Iron	525.84		260.32	B	50.5		P
Lead	3.00	U	15.00	U			P
Magnesium	670326.36		696889.80		4.0		P
Manganese	62.31		65.95		5.8		P
Nickel	40.00	U	200.00	U			P
Potassium	335569.32		302732.50		9.8		P
Selenium	5.00	U	25.00	U			P
Silver	5.00	U	25.00	U			P
Sodium	5306473.60		3589534.00		32.4	E	P
Thallium	10.00	U	50.00	U			P
Vanadium	3.75	B	9.17	B	144.5		P
Zinc	3.47	B	57.98	B	1570.9		P

JTJ

AMENDED DATA

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0907203

The indicated Sample Delivery Group (SDG) consisting of three (3) dissolved water samples was received into the laboratory information management system (LIMS) on July 25, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 1.8°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared and analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

A five-fold serial dilution of sample, CCN = 0907203-01 ID YS01-SW03-0709L was performed in accordance with requirements for ICP and mercury analysis.

The adjusted sample concentration was inside control limits for the requested analytes.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2. Forrester for Susan Bass
Susan W. Bass
Senior Chemist
August 14, 2009

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0907203

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	217.57	108.8		
Antimony				60.0	62.07	103.4		
Arsenic				10.0	9.21	92.1		
Barium				200.0	198.48	99.2		
Beryllium				5.0	5.13	102.6		
Cadmium				5.0	4.42	88.4		
Calcium				2000.0	2055.50	102.8		
Chromium				10.0	9.52	95.2		
Cobalt				50.0	50.89	101.8		
Copper				25.0	24.81	99.2		
Iron				100.0	97.66	97.7		
Lead				3.0	3.80	126.7		
Magnesium				2000.0	2024.52	101.2		
Manganese				15.0	14.72	98.1		
Mercury	0.2	0.17	85.0					
Nickel				40.0	40.23	100.6		
Potassium				2000.0	1616.58	80.8		
Selenium				5.0	6.46	129.2		
Silver				10.0	9.65	96.5		
Sodium				2000.0	1975.45	98.8		
Thallium				10.0	10.19	101.9		
Vanadium				50.0	50.76	101.5		
Zinc				20.0	12.83	64.2		

Control Limits: no limits have been established by EPA at this time

L/UL up to 2K RL (40)

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	35.2	B	200.000	U	P
Antimony	10.0	U	10.0	U	10.0	U	~~10.0~~	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Barium	-0.4	B	-0.5	B	200.0	U	200.0	U	-0.459	B	P
Beryllium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Cadmium	-0.3	B	-0.5	B	-0.4	B	5.0	U	-0.544	B	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Chromium	3.9	B	4.3	B	3.3	B	2.2	B	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Magnesium	5000.0	U	5000.0	U	5000.0	U	28.7	B	5000.000	U	P
Manganese	10.0	U	0.4	B	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	-0.112	B	-0.131	B	-0.104	B	0.200	U	CV
Nickel	2.6	B	3.4	B	2.5	B	2.1	B	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Thallium	5.2	B	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	-2.7	B	-4.0	B	-4.6	B	-4.8	B	-4.585	B	P

NQ

See PBlk

See PBlk

UL

UL

SW03

non assoc

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			48.6	B	56.6	B					P
Antimony			1.9	B	10.0	U					P
Arsenic			10.0	U	10.0	U					P
Barium			200.0	U	200.0	U					P
Beryllium			0.4	B	0.5	B					P
Cadmium			5.0	U	5.0	U					P
Calcium			5000.0	U	5000.0	U					P
Chromium			2.2	B	2.3	B					P
Cobalt			5.0	U	5.0	U					P
Copper			5.0	U	5.0	U					P
Iron			100.0	U	100.0	U					P
Lead			3.0	U	3.0	U					P
Magnesium			35.4	B	39.4	B					P
Manganese			10.0	U	10.0	U					P
Mercury			0.200	U	-0.116	B	UL in both				CV
Nickel			2.4	B	2.3	B					P
Potassium			5000.0	U	5000.0	U					P
Selenium			5.0	U	5.0	U					P
Silver			5.0	U	5.0	U					P
Sodium			5000.0	U	5000.0	U					P
Thallium			10.0	U	10.0	U					P
Vanadium			20.0	U	20.0	U					P
Zinc			-5.1	B	-5.6	B	See PBLK				P

SW03 SW04

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	-42.1	B	200.0	U	200.0	U	35.3	B			P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U			P
Arsenic	-2.6	B	10.0	U	10.0	U	10.0	U			P
Barium	-0.6	B	-0.6	B	-0.6	B	-0.4	B			P
Beryllium	5.0	U	5.0	U	5.0	U	0.5	B			P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U			P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U			P
Cobalt	5.0	U	5.0	U	5.0	U	0.6	B			P
Copper	5.0	U	5.0	U	5.0	U	5.0	U			P
Iron	100.0	U	100.0	U	100.0	U	100.0	U			P
Lead	3.0	U	3.0	U	3.0	U	3.0	U			P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Manganese	-0.4	B	-0.5	B	-0.4	B	10.0	U			P
Nickel	40.0	U	40.0	U	40.0	U	40.0	U			P
Potassium	5000.0	U	25.3	B	22.8	B	24.6	B			P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U			P
Silver	5.0	U	5.0	U	5.0	U	0.4	B			P
Sodium	306.5	B	361.5	B	287.9	B	186.6	B			P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U			P
Vanadium	20.0	U	20.0	U	0.6	B	0.7	B			P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U			P

Mg only
No action
Results for DL's

AMENDED DATA

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			34.7	B	42.8	B					P
Antimony			10.0	U	10.0	U					P
Arsenic			10.0	U	10.0	U					P
Barium			-0.5	B	200.0	U					P
Beryllium			0.7	B	0.5	B					P
Cadmium			5.0	U	5.0	U					P
Calcium			5000.0	U	5000.0	U					P
Chromium			10.0	U	0.6	B					P
Cobalt			5.0	U	0.8	B					P
Copper			-1.4	B	5.0	U					P
Iron			100.0	U	100.0	U					P
Lead			3.0	U	1.9	B					P
Magnesium			5000.0	U	5000.0	U					P
Manganese			10.0	U	10.0	U					P
Nickel			40.0	U	40.0	U					P
Potassium			21.3	B	25.1	B					P
Selenium			5.0	U	5.0	U					P
Silver			-0.9	B	0.4	B					P
Sodium			123.7	B	234.2	B					P
Thallium			10.0	U	10.0	U					P
Vanadium			0.5	B	0.7	B					P
Zinc			20.0	U	20.0	U					P

NJ only. No action results > blk levels

AMENDED DATA

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS01-SW03-0709L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0907203

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	33.51	B	1000.00	U	100.0		P
Antimony	10.00	U	13.72	B	100.0		P
Arsenic	4.04	B	50.00	U	100.0		P
Barium	27.38	B	25.43	B	7.1		P
Beryllium	5.00	U	25.00	U			P
Cadmium	5.00	U	25.00	U			P
Calcium	230743.40		226231.00		2.0		P
Chromium	10.00	U	50.00	U			P
Cobalt	5.00	U	25.00	U			P
Copper	5.00	U	25.00	U			P
Iron	62.69	B	500.00	U	100.0		P
Lead	3.00	U	15.00	U			P
Magnesium	718403.36		711697.30		0.9		P
Manganese	41.18		38.72	B	6.0		P
Mercury	0.20	U	1.00	U			CV
Nickel	40.00	U	200.00	U			P
Potassium	351763.08		300339.30		14.6	E	P
Selenium	5.00	U	25.00	U			P
Silver	5.00	U	25.00	U			P
Sodium	5586883.84		5919134.00		5.9		P
Thallium	10.00	U	50.00	U			P
Vanadium	2.00	B	3.39	B	69.5		P
Zinc	20.00	U	100.00	U			P

AMENDED DATA

This SDG contains TDS results using standard methods method 2540C.

HOLDING TIMES

Sampling Date: 7/24
Received Date: 7/25
Prep. Dates: 7/28
Analysis Dates: 7/28

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

There is no calibration beyond the oven temp. Raw data was verified. No qualifications were required

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as B.

L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code

Sample ID	analyte	Q Flag	Q Code

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

There was no MS or MD. The submitted LCS/LCSD samples were acceptable.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Sample ID: None Duplicate Sample ID:

Parameter	Sample Conc.	Duplicate Conc.	RPD
TDS			#DIV/0!

Comments: No qualifications were required.

SAMPLE CALCULATION

Ammonia
EPA SAMPLE ID: YS01-SW03-0709
COMPOUND: TDS
CONCENTRATION: 25000 mg/L
%Solids – na
Raw Data result: 2.5027g

2.5027g * 1/0.1L * 1000mg/g = 25027 mg/L

SAMPLE RESULT VERIFICATION

Specific Comments:

No qualifications were required.

Reviewer J Cleveland **Date:** 10/11/09

CompuChem
A Division Of
Liberty Analytical Corp.

SDG NARRATIVE
SDG # 0907201

The 3 water samples were received intact, refrigerated with proper documentation, in sealed shipping containers, on July 25th, 2009. The samples were scheduled for the requested analysis of the Wet Chemistry fraction. The samples were analyzed, in accordance with current EPA methods, for the analytes requested as per the COC, with the exceptions and/or additions requested by the client.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS/LCS Dup & Blank) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
There was no matrix QC associated with this SDG.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Preeti Khare
Analyst II
August 3, 2009

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 13, 2009
SDG # 0908015 & SDG005, CompuChem & Empirical
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0908015 & SDG005. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles, 8330 for explosives plus PETN & 3, 5-dinitroaniline, 6010B & 7471A for total metals and the Lloyd Kahn method for TOC. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	VOA	EXP	Metals	TOC
YS06-SD68-0809	0908015-09	soil	X	X	X	X
YS06-SD68P-0809	0908015-06	soil	X	X	X	
YS06-SD69-0809	0908015-04	soil	X	X	X	X
YS06-SD70-0809	0908015-01	soil	X	X	X	X
YS06-SD71-0809	0908015-02	soil	X	X	X	X
YS06-SD72-0809	0908015-03	soil	X	X	X	X
YS06-SD73-0809	0908015-07	soil	X	X	X	X
YS06-SD74-0809	0908015-08	soil	X	X	X	X
YS06-SD74P-0809	0908015-10	soil	X	X	X	
YS06-SD75-0809	0908015-09	soil	X	X	X	X
YS06-SD76-0809	0908015-11	soil	X	X	X	X
YS06-SD77-0809	0908015-12	soil	X	X	X	X
YS06-SD78-0809	0908015-13	soil	X	X	X	X
YS06-SD73-0809 MS	0908015-07MS	soil	X	X	X	X
YS06-SD73-0809 MSD	0908015-07MSD	soil	X	X	X	X

The following quality control samples were provided with this SDG: sample YS06-SD68P-0809-field duplicate of sample YS06-SD68-0809; and sample YS06-SD74P-0809-field duplicate of sample YS06-SD74-0809.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- GC/MS Tuning *
- GC Performance *
- HPLC Performance *
- Initial/Continuing Calibrations
- CRI Standards *
- Interference Check Sample *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions *
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial calibrations exhibited low RRF values that required some non-detect results be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The initial calibrations exhibited low RRF values that required some positive results be estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Explosives by 8330

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

All P flagged results were qualified as estimated.

Metals

Blank contamination was noted in the laboratory blanks associated with the samples in this SDG. Qualifications were added to the data.

The associated MS/MSD pair exhibited low recoveries for two analytes that required qualification as biased low L/UL in the field samples.

One of the field duplicate pairs exhibited a non-compliant RPD for zinc. This analyte was qualified as estimated in the field duplicate pair.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

TOC

No qualifications to the data were required.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 8/4-6/09 and samples were received at the laboratory 8/5-7/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 8/11/09	acetone	0.045	all samples	L/R	ICL

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D or %Drift	Samples	Q Flag	Q Code
8/18/09, 0413	tetryl	-18.0	YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809*, YS06-SD78-0809	J/UJ	CCL

*tetryl in this sample was flagged J due to high column quantitation %Ds with a 2C qualification code

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKGU	2-butanone	3.3J ug/Kg	13 ug/Kg	33 ug/Kg
	4-methyl-2-pentaone	3.3J	13	16.5
	2-hexanone	12J	13	60
	1,2,4-trichlorobenzene	2.1J	5.0	10.5
YS06-FB01-080409	acetone	4.1	2.5	41
	2-butanone	1.5	2.5	15
YS06-EB01-080409	acetone	5.2	2.5	52
	2-butanone	1.5J	2.5	15
YS06-EB02-080509	acetone	7.5	2.5	75
	2-butanone	2.4J	2.5	24

Blank ID	Compound	Concentration	Reporting Limit	Action Level
YS06-EB02-080609	acetone	5.2	2.5	52
	2-butanone	27	2.5	270

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS06-SD68-0809, YS06-SD69-0809, YS06-SD70-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD73-0809, YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809, YS06-SD78-0809	acetone	B	BL
YS06-SD70-0809, YS06-SD71-0809, YS06-SD77-0809, YS06-SD69-0809, YS06-SD74-0809	2-butanone	B	BL
YS06-SD72-0809, YS06-SD74-0809	4-methyl-2-pentaone	B	BL
YS06-SD72-0809	2-hexanone	B	BL
YS06-SD72-0809	1,2,4-trichlorobenzene	B	BL

Metals

Blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBS	antimony	0.193B mg/Kg	0.965 mg/Kg	B	MBL
	cadmium	-0.041B mg/Kg	≤ 10X MDL (3.0 mg/Kg)	L/UL	MBL
	silver	-0.243B mg/Kg	≤ 10X MDL (3.0 mg/Kg)	L/UL	MBL
	thallium	-0.373B mg/Kg	≤ 10X MDL (3.7 mg/Kg)	L/UL	MBL
CCB	beryllium	1.1 ug/L	0.55 mg/Kg	B	MBL
YS06-EB01-080409	beryllium	1.1B ug/L	0.55 mg/kg	B	EBL
YS06-EB02-080509	beryllium	1.0B ug/L	0.50 mg/Kg	B	EBL

Associated samples and required qualifications are noted in the following table.

Sample ID	analyte	Q Flag	Q Code
YS06-SD68-0809, YS06-SD68P-0809, YS06-SD70-0809, YS06-SD72-0809, YS06-SD73-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD77-0809, YS06-SD78-0809	antimony	B	MBL
all samples	cadmium	L/UL	MBL
all samples	silver	L/UL	MBL
all samples	thallium	L/UL	MBL
YS06-SD68-0809, YS06-SD68P-0809, YS06-SD69-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809, YS06-SD78-0809	beryllium	B	MBL
YS06-SD70-0809, YS06-SD73-0809	beryllium	B	EBL

Matrix Spike Recoveries

Metals

The matrix spike analysis of sample YS06-SD73-0809 exhibited non-compliant %Rs (<80% or >120%) for two analytes. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS06-SD73-0809	antimony selenium	all samples	39.0/39.6 44.7/63.0	L/UL	MSL

Field Duplicate

Metals

One of the field duplicate pairs submitted in this SDG exhibited a non-compliant RPD for one analyte. Specific action is noted in the following table.

FD Pair	Analytes	RPD	Q Flag	Q Code
YS06-SD68-0809, YS06-SD68P-0809	zinc	32%	J	FD

Identification/Quantitation

Explosives

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
all samples	acetone	+/-	L/R	ICL
YS06-SD68-0809, YS06-SD69-0809, YS06-SD70-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD73-0809, YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809, YS06-SD78-0809	acetone	+	B	BL
YS06-SD70-0809, YS06-SD71-0809, YS06-SD77-0809, YS06-SD69-0809, YS06-SD74-0809	2-butanone	+	B	BL
YS06-SD72-0809, YS06-SD74-0809	4-methyl-2-pentaone	+	B	BL
YS06-SD72-0809	2-hexanone	+	B	BL
YS06-SD72-0809	1,2,4-trichlorobenzene	+	B	BL

Explosives

Sample ID	Compound	Results	Q Flag	Q code
YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809*, YS06-SD78-0809	tetryl	+/-	J/UJ	CCL
all samples	all compounds	+P	J	2C

*tetryl in this sample was flagged J due to high column quantitation %Ds with a 2C qualification code

Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-SD68-0809, YS06-SD68P-0809, YS06-SD70-0809, YS06-SD72-0809, YS06-SD73-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD77-0809, YS06-SD78-0809	antimony	+ up to action limit	B	MBL
all samples	cadmium	+/- up to 10X MDL	L/UL	MBL
all samples	silver	+/- up to 10X MDL	L/UL	MBL
all samples	thallium	+/- up to 10X MDL	L/UL	MBL
YS06-SD68-0809, YS06-SD68P-0809, YS06-SD69-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809, YS06-SD78-0809	beryllium	+ up to action limit	B	MBL
YS06-SD70-0809, YS06-SD73-0809	beryllium	+ up to action limit	B	EBL
all samples	antimony selenium	+/-	L/UL	MSL
YS06-SD68-0809, YS06-SD68P-0809	zinc	+	J	FD
all samples	all analytes	+B	J	

TOC

Sample ID	Parameter	Results	Q Flag	Q code
No qualifications were required				

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD68-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-05

Sample wt/vol: 5.19(g/mL) G Lab File ID: 0908015-0559

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 42 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	8.3	U
74-87-3	Chloromethane	8.3	U
75-01-4	Vinyl Chloride	8.3	U
74-83-9	Bromomethane	8.3	U
75-00-3	Chloroethane	8.3	U
75-69-4	Trichlorofluoromethane	8.3	U
75-35-4	1,1-Dichloroethene	8.3	U
75-15-0	Carbon disulfide	8.3	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	8.3	U
67-64-1	Acetone	28	B,BL
75-09-2	Methylene Chloride	8.3	U
156-60-5	trans-1,2-Dichloroethene	8.3	U
1634-04-4	Methyl-tert-butyl ether	8.3	U
75-34-3	1,1-Dichloroethane	8.3	U
156-59-2	cis-1,2-Dichloroethene	8.3	U
78-93-3	2-butanone	21	U
67-66-3	Chloroform	8.3	U
71-55-6	1,1,1-Trichloroethane	8.3	U
56-23-5	Carbon Tetrachloride	8.3	U
71-43-2	Benzene	8.3	U
107-06-2	1,2-Dichloroethane	8.3	U
79-01-6	Trichloroethene	8.3	U
78-87-5	1,2-Dichloropropane	8.3	U
75-27-4	Bromodichloromethane	8.3	U
10061-01-5	cis-1,3-Dichloropropene	8.3	U
108-10-1	4-Methyl-2-pentanone	21	U
108-88-3	Toluene	8.3	U
10061-02-6	trans-1,3-Dichloropropene	8.3	U
79-00-5	1,1,2-Trichloroethane	8.3	U
127-18-4	Tetrachloroethene	8.3	U
591-78-6	2-hexanone	21	U
124-48-1	Dibromochloromethane	8.3	U
106-93-4	1,2-Dibromoethane	8.3	U

FORM I VOA

100509

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD68-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-05

Sample wt/vol: 5.19(g/mL) G Lab File ID: 0908015-0559

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 42 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	8.3	U
100-41-4	Ethylbenzene	8.3	U
100-42-5	Styrene	8.3	U
75-25-2	Bromoform	8.3	U
98-82-8	Isopropyl Benzene	8.3	U
79-34-5	1,1,2,2-Tetrachloroethane	8.3	U
541-73-1	1,3-Dichlorobenzene	8.3	U
106-46-7	1,4-Dichlorobenzene	8.3	U
95-50-1	1,2-Dichlorobenzene	8.3	U
96-12-8	1,2-Dibromo-3-Chloropropane	8.3	U
120-82-1	1,2,4-Trichlorobenzene	8.3	U
1330-20-7	Xylene (total)	8.3	U
79-20-9	Methyl acetate	8.3	U
110-82-7	Cyclohexane	8.3	U
108-87-2	Methylcyclohexane	8.3	U
108-38-3	m,p-Xylene (part of total)	17	U
95-47-6	o-Xylene (part of total)	8.3	U

WM 100501

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD68P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-06

Sample wt/vol: 5.85(g/mL) G Lab File ID: 0908015-0659

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 50 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	8.5	U
74-87-3	Chloromethane	8.5	U
75-01-4	Vinyl Chloride	8.5	U
74-83-9	Bromomethane	8.5	U
75-00-3	Chloroethane	8.5	U
75-69-4	Trichlorofluoromethane	8.5	U
75-35-4	1,1-Dichloroethene	8.5	U
75-15-0	Carbon disulfide	8.5	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	8.5	U
67-64-1	Acetone	21	UR JCL
75-09-2	Methylene Chloride	8.5	U
156-60-5	trans-1,2-Dichloroethene	8.5	U
1634-04-4	Methyl-tert-butyl ether	8.5	U
75-34-3	1,1-Dichloroethane	8.5	U
156-59-2	cis-1,2-Dichloroethene	8.5	U
78-93-3	2-butanone	21	U
67-66-3	Chloroform	8.5	U
71-55-6	1,1,1-Trichloroethane	8.5	U
56-23-5	Carbon Tetrachloride	8.5	U
71-43-2	Benzene	8.5	U
107-06-2	1,2-Dichloroethane	8.5	U
79-01-6	Trichloroethene	8.5	U
78-87-5	1,2-Dichloropropane	8.5	U
75-27-4	Bromodichloromethane	8.5	U
10061-01-5	cis-1,3-Dichloropropene	8.5	U
108-10-1	4-Methyl-2-pentanone	21	U
108-88-3	Toluene	8.5	U
10061-02-6	trans-1,3-Dichloropropene	8.5	U
79-00-5	1,1,2-Trichloroethane	8.5	U
127-18-4	Tetrachloroethene	8.5	U
591-78-6	2-hexanone	21	U
124-48-1	Dibromochloromethane	8.5	U
106-93-4	1,2-Dibromoethane	8.5	U

FORM I VOA

100509

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD68P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-06

Sample wt/vol: 5.85(g/mL) G Lab File ID: 0908015-0659

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 50 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	8.5	U
100-41-4	Ethylbenzene	8.5	U
100-42-5	Styrene	8.5	U
75-25-2	Bromoform	8.5	U
98-82-8	Isopropyl Benzene	8.5	U
79-34-5	1,1,2,2-Tetrachloroethane	8.5	U
541-73-1	1,3-Dichlorobenzene	8.5	U
106-46-7	1,4-Dichlorobenzene	8.5	U
95-50-1	1,2-Dichlorobenzene	8.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	8.5	U
120-82-1	1,2,4-Trichlorobenzene	8.5	U
1330-20-7	Xylene (total)	8.5	U
79-20-9	Methyl acetate	8.5	U
110-82-7	Cyclohexane	8.5	U
108-87-2	Methylcyclohexane	8.5	U
108-38-3	m,p-Xylene (part of total)	17	U
95-47-6	o-Xylene (part of total)	8.5	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD69-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-04

Sample wt/vol: 4.82(g/mL) G Lab File ID: 0908015-0459

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 32 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	7.6	U
74-87-3	Chloromethane	7.6	U
75-01-4	Vinyl Chloride	7.6	U
74-83-9	Bromomethane	7.6	U
75-00-3	Chloroethane	7.6	U
75-69-4	Trichlorofluoromethane	7.6	U
75-35-4	1,1-Dichloroethene	7.6	U
75-15-0	Carbon disulfide	7.6	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	7.6	U
67-64-1	Acetone	41	B,BL
75-09-2	Methylene Chloride	7.6	U
156-60-5	trans-1,2-Dichloroethene	7.6	U
1634-04-4	Methyl-tert-butyl ether	7.6	U
75-34-3	1,1-Dichloroethane	7.6	U
156-59-2	cis-1,2-Dichloroethene	7.6	U
78-93-3	2-butanone	6.9	JB,BL
67-66-3	Chloroform	7.6	U
71-55-6	1,1,1-Trichloroethane	7.6	U
56-23-5	Carbon Tetrachloride	7.6	U
71-43-2	Benzene	7.6	U
107-06-2	1,2-Dichloroethane	7.6	U
79-01-6	Trichloroethene	7.6	U
78-87-5	1,2-Dichloropropane	7.6	U
75-27-4	Bromodichloromethane	7.6	U
10061-01-5	cis-1,3-Dichloropropene	7.6	U
108-10-1	4-Methyl-2-pentanone	19	U
108-88-3	Toluene	7.6	U
10061-02-6	trans-1,3-Dichloropropene	7.6	U
79-00-5	1,1,2-Trichloroethane	7.6	U
127-18-4	Tetrachloroethene	7.6	U
591-78-6	2-hexanone	19	U
124-48-1	Dibromochloromethane	7.6	U
106-93-4	1,2-Dibromoethane	7.6	U

FORM I VOA

100504

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD69-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-04

Sample wt/vol: 4.82(g/mL) G Lab File ID: 0908015-0459

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 32 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	7.6	U
100-41-4	Ethylbenzene	7.6	U
100-42-5	Styrene	7.6	U
75-25-2	Bromoform	7.6	U
98-82-8	Isopropyl Benzene	7.6	U
79-34-5	1,1,2,2-Tetrachloroethane	7.6	U
541-73-1	1,3-Dichlorobenzene	7.6	U
106-46-7	1,4-Dichlorobenzene	7.6	U
95-50-1	1,2-Dichlorobenzene	7.6	U
96-12-8	1,2-Dibromo-3-Chloropropane	7.6	U
120-82-1	1,2,4-Trichlorobenzene	7.6	U
1330-20-7	Xylene (total)	7.6	U
79-20-9	Methyl acetate	7.6	U
110-82-7	Cyclohexane	7.6	U
108-87-2	Methylcyclohexane	7.6	U
108-38-3	m,p-Xylene (part of total)	15	U
95-47-6	o-Xylene (part of total)	7.6	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD70-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-01

Sample wt/vol: 4.38(g/mL) G Lab File ID: 0908015-0159

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 47 Date Analyzed: 08/13/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	11	U
74-87-3	Chloromethane	11	U
75-01-4	Vinyl Chloride	11	U
74-83-9	Bromomethane	11	U
75-00-3	Chloroethane	11	U
75-69-4	Trichlorofluoromethane	11	U
75-35-4	1,1-Dichloroethene	11	U
75-15-0	Carbon disulfide	11	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	11	U
67-64-1	Acetone	52	B,BL
75-09-2	Methylene Chloride	11	U
156-60-5	trans-1,2-Dichloroethene	11	U
1634-04-4	Methyl-tert-butyl ether	11	U
75-34-3	1,1-Dichloroethane	11	U
156-59-2	cis-1,2-Dichloroethene	11	U
78-93-3	2-butanone	9.4	J B,BL
67-66-3	Chloroform	11	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
71-43-2	Benzene	11	U
107-06-2	1,2-Dichloroethane	11	U
79-01-6	Trichloroethene	11	U
78-87-5	1,2-Dichloropropane	11	U
75-27-4	Bromodichloromethane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
108-10-1	4-Methyl-2-pentanone	27	U
108-88-3	Toluene	11	U
10061-02-6	trans-1,3-Dichloropropene	11	U
79-00-5	1,1,2-Trichloroethane	11	U
127-18-4	Tetrachloroethene	11	U
591-78-6	2-hexanone	27	U
124-48-1	Dibromochloromethane	11	U
106-93-4	1,2-Dibromoethane	11	U

FORM I VOA

100520

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD70-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-01

Sample wt/vol: 4.38(g/mL) G Lab File ID: 0908015-0159

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 47 Date Analyzed: 08/13/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
75-25-2	Bromoform	11	U
98-82-8	Isopropyl Benzene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
541-73-1	1,3-Dichlorobenzene	11	U
106-46-7	1,4-Dichlorobenzene	11	U
95-50-1	1,2-Dichlorobenzene	11	U
96-12-8	1,2-Dibromo-3-Chloropropane	11	U
120-82-1	1,2,4-Trichlorobenzene	11	U
1330-20-7	Xylene (total)	11	U
79-20-9	Methyl acetate	11	U
110-82-7	Cyclohexane	11	U
108-87-2	Methylcyclohexane	11	U
108-38-3	m,p-Xylene (part of total)	22	U
95-47-6	o-Xylene (part of total)	11	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD71-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-02

Sample wt/vol: 3.61(g/mL) G Lab File ID: 0908015-0259

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 60 Date Analyzed: 08/13/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	17	U
74-87-3	Chloromethane	17	U
75-01-4	Vinyl Chloride	17	U
74-83-9	Bromomethane	17	U
75-00-3	Chloroethane	17	U
75-69-4	Trichlorofluoromethane	17	U
75-35-4	1,1-Dichloroethene	17	U
75-15-0	Carbon disulfide	17	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	17	U
67-64-1	Acetone	70	B,BR
75-09-2	Methylene Chloride	17	U
156-60-5	trans-1,2-Dichloroethene	17	U
1634-04-4	Methyl-tert-butyl ether	17	U
75-34-3	1,1-Dichloroethane	17	U
156-59-2	cis-1,2-Dichloroethene	17	U
78-93-3	2-butanone	14	B,BR
67-66-3	Chloroform	17	U
71-55-6	1,1,1-Trichloroethane	17	U
56-23-5	Carbon Tetrachloride	17	U
71-43-2	Benzene	17	U
107-06-2	1,2-Dichloroethane	17	U
79-01-6	Trichloroethene	17	U
78-87-5	1,2-Dichloropropane	17	U
75-27-4	Bromodichloromethane	17	U
10061-01-5	cis-1,3-Dichloropropene	17	U
108-10-1	4-Methyl-2-pentanone	43	U
108-88-3	Toluene	17	U
10061-02-6	trans-1,3-Dichloropropene	17	U
79-00-5	1,1,2-Trichloroethane	17	U
127-18-4	Tetrachloroethene	17	U
591-78-6	2-hexanone	43	U
124-48-1	Dibromochloromethane	17	U
106-93-4	1,2-Dibromoethane	17	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD71-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-02

Sample wt/vol: 3.61(g/mL) G Lab File ID: 0908015-0259

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 60 Date Analyzed: 08/13/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	17	U
100-41-4	Ethylbenzene	17	U
100-42-5	Styrene	17	U
75-25-2	Bromoform	17	U
98-82-8	Isopropyl Benzene	17	U
79-34-5	1,1,2,2-Tetrachloroethane	17	U
541-73-1	1,3-Dichlorobenzene	17	U
106-46-7	1,4-Dichlorobenzene	17	U
95-50-1	1,2-Dichlorobenzene	17	U
96-12-8	1,2-Dibromo-3-Chloropropane	17	U
120-82-1	1,2,4-Trichlorobenzene	17	U
1330-20-7	Xylene (total)	17	U
79-20-9	Methyl acetate	17	U
110-82-7	Cyclohexane	17	U
108-87-2	Methylcyclohexane	17	U
108-38-3	m,p-Xylene (part of total)	35	U
95-47-6	o-Xylene (part of total)	17	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD72-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-03

Sample wt/vol: 3.36(g/mL) G Lab File ID: 0908015-0359

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 61 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	19	U
74-87-3	Chloromethane	19	U
75-01-4	Vinyl Chloride	19	U
74-83-9	Bromomethane	19	U
75-00-3	Chloroethane	19	U
75-69-4	Trichlorofluoromethane	19	U
75-35-4	1,1-Dichloroethene	19	U
75-15-0	Carbon disulfide	19	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	19	U
67-64-1	Acetone	120	B, BL
75-09-2	Methylene Chloride	19	U
156-60-5	trans-1,2-Dichloroethene	19	U
1634-04-4	Methyl-tert-butyl ether	19	U
75-34-3	1,1-Dichloroethane	19	U
156-59-2	cis-1,2-Dichloroethene	19	U
78-93-3	2-butanone	48	U
67-66-3	Chloroform	19	U
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
71-43-2	Benzene	19	U
107-06-2	1,2-Dichloroethane	19	U
79-01-6	Trichloroethene	19	U
78-87-5	1,2-Dichloropropane	19	U
75-27-4	Bromodichloromethane	19	U
10061-01-5	cis-1,3-Dichloropropene	19	U
108-10-1	4-Methyl-2-pentanone	14	J B, BL
108-88-3	Toluene	19	U
10061-02-6	trans-1,3-Dichloropropene	19	U
79-00-5	1,1,2-Trichloroethane	19	U
127-18-4	Tetrachloroethene	19	U
591-78-6	2-hexanone	48	B, BL
124-48-1	Dibromochloromethane	19	U
106-93-4	1,2-Dibromoethane	19	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD72-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-03

Sample wt/vol: 3.36(g/mL) G Lab File ID: 0908015-0359

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. 61 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
75-25-2	Bromoform	19	U
98-82-8	Isopropyl Benzene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
541-73-1	1,3-Dichlorobenzene	19	U
106-46-7	1,4-Dichlorobenzene	19	U
95-50-1	1,2-Dichlorobenzene	19	U
96-12-8	1,2-Dibromo-3-Chloropropane	19	U
120-82-1	1,2,4-Trichlorobenzene	7.2	J B,BL
1330-20-7	Xylene (total)	19	U
79-20-9	Methyl acetate	19	U
110-82-7	Cyclohexane	19	U
108-87-2	Methylcyclohexane	19	U
108-38-3	m,p-Xylene (part of total)	38	U
95-47-6	o-Xylene (part of total)	19	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD73-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-07

Sample wt/vol: 3.51(g/mL) G Lab File ID: 0908015-0759

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 66 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	21	U
74-87-3	Chloromethane	21	U
75-01-4	Vinyl Chloride	21	U
74-83-9	Bromomethane	21	U
75-00-3	Chloroethane	21	U
75-69-4	Trichlorofluoromethane	21	U
75-35-4	1,1-Dichloroethene	21	U
75-15-0	Carbon disulfide	21	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	21	U
67-64-1	Acetone	94	B,BR
75-09-2	Methylene Chloride	21	U
156-60-5	trans-1,2-Dichloroethene	21	U
1634-04-4	Methyl-tert-butyl ether	21	U
75-34-3	1,1-Dichloroethane	21	U
156-59-2	cis-1,2-Dichloroethene	21	U
78-93-3	2-butanone	52	U
67-66-3	Chloroform	21	U
71-55-6	1,1,1-Trichloroethane	21	U
56-23-5	Carbon Tetrachloride	21	U
71-43-2	Benzene	21	U
107-06-2	1,2-Dichloroethane	21	U
79-01-6	Trichloroethene	21	U
78-87-5	1,2-Dichloropropane	21	U
75-27-4	Bromodichloromethane	21	U
10061-01-5	cis-1,3-Dichloropropene	21	U
108-10-1	4-Methyl-2-pentanone	52	U
108-88-3	Toluene	21	U
10061-02-6	trans-1,3-Dichloropropene	21	U
79-00-5	1,1,2-Trichloroethane	21	U
127-18-4	Tetrachloroethene	21	U
591-78-6	2-hexanone	52	U
124-48-1	Dibromochloromethane	21	U
106-93-4	1,2-Dibromoethane	21	U

FORM I VOA

023

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD73-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-07

Sample wt/vol: 3.51(g/mL) G Lab File ID: 0908015-0759

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 66 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	21	U
100-41-4	Ethylbenzene	21	U
100-42-5	Styrene	21	U
75-25-2	Bromoform	21	U
98-82-8	Isopropyl Benzene	21	U
79-34-5	1,1,2,2-Tetrachloroethane	21	U
541-73-1	1,3-Dichlorobenzene	21	U
106-46-7	1,4-Dichlorobenzene	21	U
95-50-1	1,2-Dichlorobenzene	21	U
96-12-8	1,2-Dibromo-3-Chloropropane	21	U
120-82-1	1,2,4-Trichlorobenzene	21	U
1330-20-7	Xylene (total)	21	U
79-20-9	Methyl acetate	21	U
110-82-7	Cyclohexane	21	U
108-87-2	Methylcyclohexane	21	U
108-38-3	m,p-Xylene (part of total)	42	U
95-47-6	o-Xylene (part of total)	21	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD74-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-08

Sample wt/vol: 2.93(g/mL) G Lab File ID: 0908015-0859

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 67 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q	
75-71-8	Dichlorodifluoromethane	26	U	
74-87-3	Chloromethane	26	U	
75-01-4	Vinyl Chloride	26	U	
74-83-9	Bromomethane	26	U	
75-00-3	Chloroethane	26	U	
75-69-4	Trichlorofluoromethane	26	U	
75-35-4	1,1-Dichloroethene	26	U	
75-15-0	Carbon disulfide	11	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	26	U	
67-64-1	Acetone	94		B,BL
75-09-2	Methylene Chloride	26	U	
156-60-5	trans-1,2-Dichloroethene	26	U	
1634-04-4	Methyl-tert-butyl ether	26	U	
75-34-3	1,1-Dichloroethane	26	U	
156-59-2	cis-1,2-Dichloroethene	26	U	
78-93-3	2-butanone	31	J	B,BL
67-66-3	Chloroform	26	U	
71-55-6	1,1,1-Trichloroethane	26	U	
56-23-5	Carbon Tetrachloride	26	U	
71-43-2	Benzene	26	U	
107-06-2	1,2-Dichloroethane	26	U	
79-01-6	Trichloroethene	26	U	
78-87-5	1,2-Dichloropropane	26	U	
75-27-4	Bromodichloromethane	26	U	
10061-01-5	cis-1,3-Dichloropropene	26	U	
108-10-1	4-Methyl-2-pentanone	16	J	B,BL
108-88-3	Toluene	26	U	
10061-02-6	trans-1,3-Dichloropropene	26	U	
79-00-5	1,1,2-Trichloroethane	26	U	
127-18-4	Tetrachloroethene	26	U	
591-78-6	2-hexanone	65	U	
124-48-1	Dibromochloromethane	26	U	
106-93-4	1,2-Dibromoethane	26	U	

FORM I VOA

100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD74-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-08

Sample wt/vol: 2.93(g/mL) G Lab File ID: 0908015-0859

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 67 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	26	U
100-41-4	Ethylbenzene	26	U
100-42-5	Styrene	26	U
75-25-2	Bromoform	26	U
98-82-8	Isopropyl Benzene	26	U
79-34-5	1,1,2,2-Tetrachloroethane	26	U
541-73-1	1,3-Dichlorobenzene	26	U
106-46-7	1,4-Dichlorobenzene	26	U
95-50-1	1,2-Dichlorobenzene	26	U
96-12-8	1,2-Dibromo-3-Chloropropane	26	U
120-82-1	1,2,4-Trichlorobenzene	26	U
1330-20-7	Xylene (total)	26	U
79-20-9	Methyl acetate	26	U
110-82-7	Cyclohexane	26	U
108-87-2	Methylcyclohexane	26	U
108-38-3	m,p-Xylene (part of total)	52	U
95-47-6	o-Xylene (part of total)	26	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD74P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-10

Sample wt/vol: 3.36(g/mL) G Lab File ID: 0908015-1059

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 67 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	23	U
74-87-3	Chloromethane	23	U
75-01-4	Vinyl Chloride	23	U
74-83-9	Bromomethane	23	U
75-00-3	Chloroethane	23	U
75-69-4	Trichlorofluoromethane	23	U
75-35-4	1,1-Dichloroethene	23	U
75-15-0	Carbon disulfide	23	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	23	U
67-64-1	Acetone	52	B,BL
75-09-2	Methylene Chloride	23	U
156-60-5	trans-1,2-Dichloroethene	23	U
1634-04-4	Methyl-tert-butyl ether	23	U
75-34-3	1,1-Dichloroethane	23	U
156-59-2	cis-1,2-Dichloroethene	23	U
78-93-3	2-butanone	56	U
67-66-3	Chloroform	23	U
71-55-6	1,1,1-Trichloroethane	23	U
56-23-5	Carbon Tetrachloride	23	U
71-43-2	Benzene	23	U
107-06-2	1,2-Dichloroethane	23	U
79-01-6	Trichloroethene	23	U
78-87-5	1,2-Dichloropropane	23	U
75-27-4	Bromodichloromethane	23	U
10061-01-5	cis-1,3-Dichloropropene	23	U
108-10-1	4-Methyl-2-pentanone	56	U
108-88-3	Toluene	23	U
10061-02-6	trans-1,3-Dichloropropene	23	U
79-00-5	1,1,2-Trichloroethane	23	U
127-18-4	Tetrachloroethene	23	U
591-78-6	2-hexanone	56	U
124-48-1	Dibromochloromethane	23	U
106-93-4	1,2-Dibromoethane	23	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD74P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-10

Sample wt/vol: 3.36(g/mL) G Lab File ID: 0908015-1059

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 67 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	23	U
100-41-4	Ethylbenzene	23	U
100-42-5	Styrene	23	U
75-25-2	Bromoform	23	U
98-82-8	Isopropyl Benzene	23	U
79-34-5	1,1,2,2-Tetrachloroethane	23	U
541-73-1	1,3-Dichlorobenzene	23	U
106-46-7	1,4-Dichlorobenzene	23	U
95-50-1	1,2-Dichlorobenzene	23	U
96-12-8	1,2-Dibromo-3-Chloropropane	23	U
120-82-1	1,2,4-Trichlorobenzene	23	U
1330-20-7	Xylene (total)	23	U
79-20-9	Methyl acetate	23	U
110-82-7	Cyclohexane	23	U
108-87-2	Methylcyclohexane	23	U
108-38-3	m,p-Xylene (part of total)	45	U
95-47-6	o-Xylene (part of total)	23	U

100504

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD75-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-09

Sample wt/vol: 3.80(g/mL) G Lab File ID: 0908015-0959

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 64 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	18	U
74-87-3	Chloromethane	18	U
75-01-4	Vinyl Chloride	18	U
74-83-9	Bromomethane	18	U
75-00-3	Chloroethane	18	U
75-69-4	Trichlorofluoromethane	18	U
75-35-4	1,1-Dichloroethene	18	U
75-15-0	Carbon disulfide	18	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	18	U
67-64-1	Acetone	110	B,BL
75-09-2	Methylene Chloride	18	U
156-60-5	trans-1,2-Dichloroethene	18	U
1634-04-4	Methyl-tert-butyl ether	18	U
75-34-3	1,1-Dichloroethane	18	U
156-59-2	cis-1,2-Dichloroethene	18	U
78-93-3	2-butanone	46	U
67-66-3	Chloroform	18	U
71-55-6	1,1,1-Trichloroethane	18	U
56-23-5	Carbon Tetrachloride	18	U
71-43-2	Benzene	18	U
107-06-2	1,2-Dichloroethane	18	U
79-01-6	Trichloroethene	18	U
78-87-5	1,2-Dichloropropane	18	U
75-27-4	Bromodichloromethane	18	U
10061-01-5	cis-1,3-Dichloropropene	18	U
108-10-1	4-Methyl-2-pentanone	46	U
108-88-3	Toluene	18	U
10061-02-6	trans-1,3-Dichloropropene	18	U
79-00-5	1,1,2-Trichloroethane	18	U
127-18-4	Tetrachloroethene	18	U
591-78-6	2-hexanone	46	U
124-48-1	Dibromochloromethane	18	U
106-93-4	1,2-Dibromoethane	18	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD75-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-09

Sample wt/vol: 3.80(g/mL) G Lab File ID: 0908015-0959

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 64 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	18	U
100-41-4	Ethylbenzene	18	U
100-42-5	Styrene	18	U
75-25-2	Bromoform	18	U
98-82-8	Isopropyl Benzene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
541-73-1	1,3-Dichlorobenzene	18	U
106-46-7	1,4-Dichlorobenzene	18	U
95-50-1	1,2-Dichlorobenzene	18	U
96-12-8	1,2-Dibromo-3-Chloropropane	18	U
120-82-1	1,2,4-Trichlorobenzene	18	U
1330-20-7	Xylene (total)	18	U
79-20-9	Methyl acetate	18	U
110-82-7	Cyclohexane	18	U
108-87-2	Methylcyclohexane	18	U
108-38-3	m,p-Xylene (part of total)	37	U
95-47-6	o-Xylene (part of total)	18	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD76-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-11

Sample wt/vol: 3.21(g/mL) G Lab File ID: 0908015-1159

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. 59 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	19	U
74-87-3	Chloromethane	19	U
75-01-4	Vinyl Chloride	19	U
74-83-9	Bromomethane	19	U
75-00-3	Chloroethane	19	U
75-69-4	Trichlorofluoromethane	19	U
75-35-4	1,1-Dichloroethene	19	U
75-15-0	Carbon disulfide	21	
76-13-1	1,1,2-trichloro-1,2,2-triflu	19	U
67-64-1	Acetone	150	B,BV
75-09-2	Methylene Chloride	19	U
156-60-5	trans-1,2-Dichloroethene	19	U
1634-04-4	Methyl-tert-butyl ether	19	U
75-34-3	1,1-Dichloroethane	19	U
156-59-2	cis-1,2-Dichloroethene	19	U
78-93-3	2-butanone	47	U
67-66-3	Chloroform	19	U
71-55-6	1,1,1-Trichloroethane	19	U
56-23-5	Carbon Tetrachloride	19	U
71-43-2	Benzene	19	U
107-06-2	1,2-Dichloroethane	19	U
79-01-6	Trichloroethene	19	U
78-87-5	1,2-Dichloropropane	19	U
75-27-4	Bromodichloromethane	19	U
10061-01-5	cis-1,3-Dichloropropene	19	U
108-10-1	4-Methyl-2-pentanone	47	U
108-88-3	Toluene	19	U
10061-02-6	trans-1,3-Dichloropropene	19	U
79-00-5	1,1,2-Trichloroethane	19	U
127-18-4	Tetrachloroethene	19	U
591-78-6	2-hexanone	47	U
124-48-1	Dibromochloromethane	19	U
106-93-4	1,2-Dibromoethane	19	U

FORM I VOA

10/05/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD76-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-11

Sample wt/vol: 3.21(g/mL) G Lab File ID: 0908015-1159

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. 59 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	19	U
100-41-4	Ethylbenzene	19	U
100-42-5	Styrene	19	U
75-25-2	Bromoform	19	U
98-82-8	Isopropyl Benzene	19	U
79-34-5	1,1,2,2-Tetrachloroethane	19	U
541-73-1	1,3-Dichlorobenzene	19	U
106-46-7	1,4-Dichlorobenzene	19	U
95-50-1	1,2-Dichlorobenzene	19	U
96-12-8	1,2-Dibromo-3-Chloropropane	19	U
120-82-1	1,2,4-Trichlorobenzene	19	U
1330-20-7	Xylene (total)	19	U
79-20-9	Methyl acetate	19	U
110-82-7	Cyclohexane	19	U
108-87-2	Methylcyclohexane	19	U
108-38-3	m,p-Xylene (part of total)	38	U
95-47-6	o-Xylene (part of total)	19	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD77-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-12

Sample wt/vol: 3.17(g/mL) G Lab File ID: 0908015-1259

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. 67 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	24	U
74-87-3	Chloromethane	24	U
75-01-4	Vinyl Chloride	24	U
74-83-9	Bromomethane	24	U
75-00-3	Chloroethane	24	U
75-69-4	Trichlorofluoromethane	24	U
75-35-4	1,1-Dichloroethene	24	U
75-15-0	Carbon disulfide	21	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	24	U
67-64-1	Acetone	370	B,BL
75-09-2	Methylene Chloride	24	U
156-60-5	trans-1,2-Dichloroethene	7.4	J
1634-04-4	Methyl-tert-butyl ether	24	U
75-34-3	1,1-Dichloroethane	24	U
156-59-2	cis-1,2-Dichloroethene	24	U
78-93-3	2-butanone	62	B,BL
67-66-3	Chloroform	24	U
71-55-6	1,1,1-Trichloroethane	24	U
56-23-5	Carbon Tetrachloride	24	U
71-43-2	Benzene	24	U
107-06-2	1,2-Dichloroethane	24	U
79-01-6	Trichloroethene	24	U
78-87-5	1,2-Dichloropropane	24	U
75-27-4	Bromodichloromethane	24	U
10061-01-5	cis-1,3-Dichloropropene	24	U
108-10-1	4-Methyl-2-pentanone	60	U
108-88-3	Toluene	24	U
10061-02-6	trans-1,3-Dichloropropene	24	U
79-00-5	1,1,2-Trichloroethane	24	U
127-18-4	Tetrachloroethene	24	U
591-78-6	2-hexanone	60	U
124-48-1	Dibromochloromethane	24	U
106-93-4	1,2-Dibromoethane	24	U

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD77-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-12

Sample wt/vol: 3.17(g/mL) G Lab File ID: 0908015-1259

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. 67 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	24	U
100-41-4	Ethylbenzene	24	U
100-42-5	Styrene	24	U
75-25-2	Bromoform	24	U
98-82-8	Isopropyl Benzene	24	U
79-34-5	1,1,2,2-Tetrachloroethane	24	U
541-73-1	1,3-Dichlorobenzene	24	U
106-46-7	1,4-Dichlorobenzene	24	U
95-50-1	1,2-Dichlorobenzene	24	U
96-12-8	1,2-Dibromo-3-Chloropropane	24	U
120-82-1	1,2,4-Trichlorobenzene	24	U
1330-20-7	Xylene (total)	24	U
79-20-9	Methyl acetate	24	U
110-82-7	Cyclohexane	24	U
108-87-2	Methylcyclohexane	24	U
108-38-3	m,p-Xylene (part of total)	48	U
95-47-6	o-Xylene (part of total)	24	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD78-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-13

Sample wt/vol: 3.75(g/mL) G Lab File ID: 0908015-1359

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. 63 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	18	U
74-87-3	Chloromethane	18	U
75-01-4	Vinyl Chloride	18	U
74-83-9	Bromomethane	18	U
75-00-3	Chloroethane	18	U
75-69-4	Trichlorofluoromethane	18	U
75-35-4	1,1-Dichloroethene	18	U
75-15-0	Carbon disulfide	18	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	18	U
67-64-1	Acetone	67	B,BV
75-09-2	Methylene Chloride	18	U
156-60-5	trans-1,2-Dichloroethene	18	U
1634-04-4	Methyl-tert-butyl ether	18	U
75-34-3	1,1-Dichloroethane	18	U
156-59-2	cis-1,2-Dichloroethene	18	U
78-93-3	2-butanone	45	U
67-66-3	Chloroform	18	U
71-55-6	1,1,1-Trichloroethane	18	U
56-23-5	Carbon Tetrachloride	18	U
71-43-2	Benzene	18	U
107-06-2	1,2-Dichloroethane	18	U
79-01-6	Trichloroethene	18	U
78-87-5	1,2-Dichloropropane	18	U
75-27-4	Bromodichloromethane	18	U
10061-01-5	cis-1,3-Dichloropropene	18	U
108-10-1	4-Methyl-2-pentanone	45	U
108-88-3	Toluene	18	U
10061-02-6	trans-1,3-Dichloropropene	18	U
79-00-5	1,1,2-Trichloroethane	18	U
127-18-4	Tetrachloroethene	18	U
591-78-6	2-hexanone	45	U
124-48-1	Dibromochloromethane	18	U
106-93-4	1,2-Dibromoethane	18	U

FORM I VOA

WW 100507

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD78-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 0908015-13

Sample wt/vol: 3.75(g/mL) G Lab File ID: 0908015-1359

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. 63 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	18	U
100-41-4	Ethylbenzene	18	U
100-42-5	Styrene	18	U
75-25-2	Bromoform	18	U
98-82-8	Isopropyl Benzene	18	U
79-34-5	1,1,2,2-Tetrachloroethane	18	U
541-73-1	1,3-Dichlorobenzene	18	U
106-46-7	1,4-Dichlorobenzene	18	U
95-50-1	1,2-Dichlorobenzene	18	U
96-12-8	1,2-Dibromo-3-Chloropropane	18	U
120-82-1	1,2,4-Trichlorobenzene	18	U
1330-20-7	Xylene (total)	18	U
79-20-9	Methyl acetate	18	U
110-82-7	Cyclohexane	18	U
108-87-2	Methylcyclohexane	18	U
108-38-3	m,p-Xylene (part of total)	36	U
95-47-6	o-Xylene (part of total)	18	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD7
3-0809MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 9081408-MS1

Sample wt/vol: 3.50(g/mL) G Lab File ID: 9081408-MS159

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 66 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	120	
74-87-3	Chloromethane	130	
75-01-4	Vinyl Chloride	130	
74-83-9	Bromomethane	110	
75-00-3	Chloroethane	170	
75-69-4	Trichlorofluoromethane	150	
75-35-4	1,1-Dichloroethene	140	
75-15-0	Carbon disulfide	180	
76-13-1	1,1,2-trichloro-1,2,2-triflu	120	
67-64-1	Acetone	720	
75-09-2	Methylene Chloride	170	
156-60-5	trans-1,2-Dichloroethene	140	
1634-04-4	Methyl-tert-butyl ether	190	
75-34-3	1,1-Dichloroethane	150	
156-59-2	cis-1,2-Dichloroethene	150	
78-93-3	2-butanone	500	
67-66-3	Chloroform	150	
71-55-6	1,1,1-Trichloroethane	140	
56-23-5	Carbon Tetrachloride	140	
71-43-2	Benzene	150	
107-06-2	1,2-Dichloroethane	180	
79-01-6	Trichloroethene	140	
78-87-5	1,2-Dichloropropane	150	
75-27-4	Bromodichloromethane	160	
10061-01-5	cis-1,3-Dichloropropene	150	
108-10-1	4-Methyl-2-pentanone	480	
108-88-3	Toluene	120	
10061-02-6	trans-1,3-Dichloropropene	140	
79-00-5	1,1,2-Trichloroethane	160	
127-18-4	Tetrachloroethene	98	
591-78-6	2-hexanone	390	
124-48-1	Dibromochloromethane	150	
106-93-4	1,2-Dibromoethane	170	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD7
3-0809MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 9081408-MS1

Sample wt/vol: 3.50(g/mL) G Lab File ID: 9081408-MS159

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 66 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	120	
100-41-4	Ethylbenzene	110	
100-42-5	Styrene	99	
75-25-2	Bromoform	160	
98-82-8	Isopropyl Benzene	82	
79-34-5	1,1,2,2-Tetrachloroethane	150	
541-73-1	1,3-Dichlorobenzene	78	
106-46-7	1,4-Dichlorobenzene	81	
95-50-1	1,2-Dichlorobenzene	86	
96-12-8	1,2-Dibromo-3-Chloropropane	150	
120-82-1	1,2,4-Trichlorobenzene	40	
1330-20-7	Xylene (total)	310	
79-20-9	Methyl acetate	190	
110-82-7	Cyclohexane	90	
108-87-2	Methylcyclohexane	63	
108-38-3	m,p-Xylene (part of total)	200	
95-47-6	o-Xylene (part of total)	110	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD7
3-0809MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 9081408-MSD1

Sample wt/vol: 3.17(g/mL) G Lab File ID: 9081408-MSD159

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 66 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	170	
74-87-3	Chloromethane	180	
75-01-4	Vinyl Chloride	180	
74-83-9	Bromomethane	190	
75-00-3	Chloroethane	180	
75-69-4	Trichlorofluoromethane	180	
75-35-4	1,1-Dichloroethene	190	
75-15-0	Carbon disulfide	230	
76-13-1	1,1,2-trichloro-1,2,2-triflu	160	
67-64-1	Acetone	910	
75-09-2	Methylene Chloride	220	
156-60-5	trans-1,2-Dichloroethene	180	
1634-04-4	Methyl-tert-butyl ether	240	
75-34-3	1,1-Dichloroethane	190	
156-59-2	cis-1,2-Dichloroethene	190	
78-93-3	2-butanone	630	
67-66-3	Chloroform	200	
71-55-6	1,1,1-Trichloroethane	180	
56-23-5	Carbon Tetrachloride	180	
71-43-2	Benzene	190	
107-06-2	1,2-Dichloroethane	220	
79-01-6	Trichloroethene	180	
78-87-5	1,2-Dichloropropane	190	
75-27-4	Bromodichloromethane	210	
10061-01-5	cis-1,3-Dichloropropene	200	
108-10-1	4-Methyl-2-pentanone	600	
108-88-3	Toluene	160	
10061-02-6	trans-1,3-Dichloropropene	180	
79-00-5	1,1,2-Trichloroethane	200	
127-18-4	Tetrachloroethene	130	
591-78-6	2-hexanone	530	
124-48-1	Dibromochloromethane	200	
106-93-4	1,2-Dibromoethane	210	

FORM I VOA

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-SD7
3-0809MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix: (soil/water) SOIL Lab Sample ID: 9081408-MSD1

Sample wt/vol: 3.17(g/mL) G Lab File ID: 9081408-MSD159

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. 66 Date Analyzed: 08/14/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	150	
100-41-4	Ethylbenzene	140	
100-42-5	Styrene	140	
75-25-2	Bromoform	210	
98-82-8	Isopropyl Benzene	110	
79-34-5	1,1,2,2-Tetrachloroethane	190	
541-73-1	1,3-Dichlorobenzene	110	
106-46-7	1,4-Dichlorobenzene	110	
95-50-1	1,2-Dichlorobenzene	120	
96-12-8	1,2-Dibromo-3-Chloropropane	210	
120-82-1	1,2,4-Trichlorobenzene	57	
1330-20-7	Xylene (total)	420	
79-20-9	Methyl acetate	230	
110-82-7	Cyclohexane	130	
108-87-2	Methylcyclohexane	91	
108-38-3	m,p-Xylene (part of total)	280	
95-47-6	o-Xylene (part of total)	140	

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD70-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908040-01

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 006V0601

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/04/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 17:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JMC 10709

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD71-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908040-02

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 007V0701

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/04/09 10:00

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 17:55

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JBC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD72-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908040-03

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 008V0801

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/04/09 10:25

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 18:30

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JLC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD69-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908040-04

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 009V0901

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/04/09 10:45

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 19:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JMC 10709

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD68-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908040-05

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 010V1001

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/04/09 11:10

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 19:38

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JAC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD68P-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908040-06

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 011V1101

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/04/09 11:20

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 20:13

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JAC 10709

FORM I
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD73-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908055-01

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 012V1201

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/05/09 10:45

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/17/09 20:47

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		U
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JLC 10709

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD74-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908055-02

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 019V1901

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/05/09 11:50

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/18/09 00:47

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JLC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD74P-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908055-03

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 020V2001

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/05/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/18/09 01:22

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JAC 10709

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD75-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908055-04

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 021V2101

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/05/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/18/09 01:56

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		~~U~~ UJ CCl
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JMC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD76-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908063-01

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 022V2201

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/06/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/18/09 02:30

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		~~U~~ UJ CCl
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JBC
10709

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD77-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908063-02

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 023V2301

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/06/09 10:50

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/18/09 03:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500	120	~~JP~~ J 2C
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500	200	~~JP~~ J 2C
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500	150	~~JP~~ J 2C
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500	270	J
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JAC 10709

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SD78-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Matrix: (soil/water) SOIL Lab Sample ID: 0908063-03

Sample wt/vol: 2.0 (g/mL) G Lab File ID: 024V2401

% Moisture: 0 decanted: (Y/N) N Date Sampled: 08/06/09 11:55

Extraction: (SepF/Cont/Sonc/Soxh) SONC Date Extracted:08/12/09

Concentrated Extract Volume: 20.0(ml) Date Analyzed: 08/18/09 03:39

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	100	500		U
121-82-4	RDX	100	500		U
98-95-3	Nitrobenzene	110	500		U
99-65-0	1,3-Dinitrobenzene	100	500		U
99-35-4	1,3,5-Trinitrobenzene	100	500		U
121-14-2	2,4-Dinitrotoluene	130	500		U
606-20-2	2,6-Dinitrotoluene	130	500		U
118-96-7	2,4,6-Trinitrotoluene	100	500		U
35572-78-2	2-Amino-4,6-dinitrotoluene	150	500		U
479-45-8	Tetryl	100	500		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	100	500		U
88-72-2	2-Nitrotoluene	100	500		U
99-99-0	4-Nitrotoluene	100	500		U
99-08-1	3-Nitrotoluene	150	500		U
78-11-5	PETN	1600	2500		U
618-87-1	3,5-Dinitroaniline	100	500		U

JAC
10709

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD68-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-05

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 58.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8230			P	
7440-36-0	Antimony	0.42	~~B~~	~~J~~ B	P	MBL
7440-38-2	Arsenic	4.0			P	
7440-39-3	Barium	16.2	~~B~~	J	P	
7440-41-7	Beryllium	0.57	~~B~~	B	P	MBL
7440-43-9	Cadmium	0.85	~~U~~	UL	P	MBL
7440-70-2	Calcium	839	~~B~~	J	P	
7440-47-3	Chromium	17.1			P	
7440-48-4	Cobalt	3.2			P	
7440-50-8	Copper	4.5			P	
7439-89-6	Iron	15200			P	
7439-92-1	Lead	7.8			P	
7439-95-4	Magnesium	2710			P	
7439-96-5	Manganese	127			P	
7439-97-6	Mercury	0.050	U		CV	
7440-02-0	Nickel	6.8	~~B~~	J	P	
7440-09-7	Potassium	1930			P	
7782-49-2	Selenium	0.85	~~U~~	~~J~~ UL	P	MSL
7440-22-4	Silver	0.85	~~U~~	UL	P	MBL
7440-23-5	Sodium	5240			P	
7440-28-0	Thallium	1.7	~~U~~	UL	P	MBL
7440-62-2	Vanadium	20.6			P	
7440-66-6	Zinc	21.1		J	P	FD

10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD68P-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-06

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 49.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	9550			P	
7440-36-0	Antimony	0.45	~~B~~	~~N~~ B	P	MBL
7440-38-2	Arsenic	5.1			P	
7440-39-3	Barium	18.5	~~B~~	J	P	
7440-41-7	Beryllium	0.66	~~B~~	B	P	MBL
7440-43-9	Cadmium	0.92	~~U~~	UL	P	MBL
7440-70-2	Calcium	1330			P	
7440-47-3	Chromium	20.6			P	
7440-48-4	Cobalt	3.6			P	
7440-50-8	Copper	6.1			P	
7439-89-6	Iron	18000			P	
7439-92-1	Lead	9.3			P	
7439-95-4	Magnesium	3120			P	
7439-96-5	Manganese	124			P	
7439-97-6	Mercury	0.061	U		CV	
7440-02-0	Nickel	8.4			P	
7440-09-7	Potassium	2460			P	
7782-49-2	Selenium	0.58	~~B~~	~~N~~ L	P	MSL
7440-22-4	Silver	0.92	~~U~~	UL	P	MBL
7440-23-5	Sodium	5450			P	
7440-28-0	Thallium	1.8	~~U~~	UL	P	MBL
7440-62-2	Vanadium	25.2			P	
7440-66-6	Zinc	29.2		J	P	FD

JAC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS06-SD69-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-04

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 67.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	5920			P	
7440-36-0	Antimony	1.4	U	UL	P	MSL
7440-38-2	Arsenic	2.9			P	
7440-39-3	Barium	12.0	B	J	P	
7440-41-7	Beryllium	0.46	B	B	P	MBL
7440-43-9	Cadmium	0.72	U	UL	P	MBL
7440-70-2	Calcium	1740			P	
7440-47-3	Chromium	14.0			P	
7440-48-4	Cobalt	2.3			P	
7440-50-8	Copper	5.8			P	
7439-89-6	Iron	11700			P	
7439-92-1	Lead	8.6			P	
7439-95-4	Magnesium	2160			P	
7439-96-5	Manganese	75.4			P	
7439-97-6	Mercury	0.028	B	J	CV	
7440-02-0	Nickel	5.3	B	J	P	
7440-09-7	Potassium	1850			P	
7782-49-2	Selenium	0.72	U	UL	P	MSL
7440-22-4	Silver	0.72	U	UL	P	MBL
7440-23-5	Sodium	2680			P	
7440-28-0	Thallium	1.4	U	UL	P	MBL
7440-62-2	Vanadium	16.7			P	
7440-66-6	Zinc	33.3			P	

10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SD70-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-01

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 52.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	10400			P	
7440-36-0	Antimony	0.58	~~U~~	~~U~~ B	P	MBL
7440-38-2	Arsenic	5.5			P	
7440-39-3	Barium	22.6	~~B~~	J	P	
7440-41-7	Beryllium	0.70	~~U~~	B	P	EBL
7440-43-9	Cadmium	0.88	~~U~~	UL	P	MBL
7440-70-2	Calcium	33200			P	
7440-47-3	Chromium	23.1			P	
7440-48-4	Cobalt	4.1			P	
7440-50-8	Copper	11.3			P	
7439-89-6	Iron	19000			P	
7439-92-1	Lead	15.0			P	
7439-95-4	Magnesium	3590			P	
7439-96-5	Manganese	159			P	
7439-97-6	Mercury	0.053	~~B~~	J	CV	
7440-02-0	Nickel	9.8			P	
7440-09-7	Potassium	2580			P	
7782-49-2	Selenium	0.88	~~U~~	~~U~~ UL	P	MSL
7440-22-4	Silver	0.88	~~U~~	UL	P	MBL
7440-23-5	Sodium	4980			P	
7440-28-0	Thallium	1.8	~~U~~	UL	P	MBL
7440-62-2	Vanadium	28.8			P	
7440-66-6	Zinc	62.9			P	

JC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD71-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-02

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 40.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	17600			P	
7440-36-0	Antimony	2.3	~~U~~	~~UJ~~ UL	P	MSL
7440-38-2	Arsenic	8.3			P	
7440-39-3	Barium	35.2	~~U~~	J	P	
7440-41-7	Beryllium	1.1	~~U~~	B	P	MBL
7440-43-9	Cadmium	1.2	~~U~~	UL	P	MBL
7440-70-2	Calcium	2100			P	
7440-47-3	Chromium	36.3			P	
7440-48-4	Cobalt	6.7			P	
7440-50-8	Copper	19.0			P	
7439-89-6	Iron	31200			P	
7439-92-1	Lead	23.3			P	
7439-95-4	Magnesium	5790			P	
7439-96-5	Manganese	237			P	
7439-97-6	Mercury	0.067	~~U~~	J	CV	
7440-02-0	Nickel	16.4			P	
7440-09-7	Potassium	3660			P	
7782-49-2	Selenium	0.87	~~U~~	~~UJ~~ L	P	MSL
7440-22-4	Silver	1.2	~~U~~	UL	P	MBL
7440-23-5	Sodium	9420			P	
7440-28-0	Thallium	2.3	~~U~~	UL	P	MBL
7440-62-2	Vanadium	44.8			P	
7440-66-6	Zinc	100			P	

JC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD72-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-03

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 38.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	19500			P	
7440-36-0	Antimony	0.48	~~B~~	~~U~~ B	P	MBL
7440-38-2	Arsenic	9.1			P	
7440-39-3	Barium	41.2	~~B~~	J	P	
7440-41-7	Beryllium	1.2	~~B~~	B	P	MBL
7440-43-9	Cadmium	1.3	~~U~~	UL	P	MBL
7440-70-2	Calcium	2140			P	
7440-47-3	Chromium	40.1			P	
7440-48-4	Cobalt	7.4			P	
7440-50-8	Copper	21.4			P	
7439-89-6	Iron	32600			P	
7439-92-1	Lead	26.6			P	
7439-95-4	Magnesium	6200			P	
7439-96-5	Manganese	215			P	
7439-97-6	Mercury	0.095			CV	
7440-02-0	Nickel	17.9			P	
7440-09-7	Potassium	3920			P	
7782-49-2	Selenium	1.3	~~U~~	~~U~~ UL	P	MBL
7440-22-4	Silver	1.3	~~U~~	UL	P	MBL
7440-23-5	Sodium	8920			P	
7440-28-0	Thallium	2.6	~~U~~	UL	P	MBL
7440-62-2	Vanadium	52.2			P	
7440-66-6	Zinc	106			P	

JLC 10/9/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD73-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-07

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 33.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	20100			P	
7440-36-0	Antimony	0.59	~~B~~	~~N~~ B	P	MBL
7440-38-2	Arsenic	8.0			P	
7440-39-3	Barium	40.1	~~B~~	J	P	
7440-41-7	Beryllium	1.2	~~B~~	B	P	MBL
7440-43-9	Cadmium	1.5	~~U~~	UL	P	MBL
7440-70-2	Calcium	2310			P	
7440-47-3	Chromium	44.7			P	
7440-48-4	Cobalt	7.4			P	
7440-50-8	Copper	21.5			P	
7439-89-6	Iron	34100			P	
7439-92-1	Lead	26.6			P	
7439-95-4	Magnesium	6720			P	
7439-96-5	Manganese	253			P	
7439-97-6	Mercury	0.099	U		CV	
7440-02-0	Nickel	19.0			P	
7440-09-7	Potassium	4400			P	
7782-49-2	Selenium	1.2	~~B~~	~~N~~ L	P	MSL
7440-22-4	Silver	1.5	~~U~~	UL	P	MBL
7440-23-5	Sodium	12200			P	
7440-28-0	Thallium	3.0	~~U~~	UL	P	MBL
7440-62-2	Vanadium	49.1			P	
7440-66-6	Zinc	110			P	

10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD74-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-08

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 33.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	22800			P	
7440-36-0	Antimony	2.9	~~U~~	~~U~~ UL	P	MSL
7440-38-2	Arsenic	8.2			P	
7440-39-3	Barium	43.5	~~B~~	J	P	
7440-41-7	Beryllium	1.4	~~B~~	B	P	MBL
7440-43-9	Cadmium	1.4	~~U~~	UL	P	MBL
7440-70-2	Calcium	2370			P	
7440-47-3	Chromium	46.6			P	
7440-48-4	Cobalt	8.3			P	
7440-50-8	Copper	25.3			P	
7439-89-6	Iron	38000			P	
7439-92-1	Lead	30.5			P	
7439-95-4	Magnesium	6940			P	
7439-96-5	Manganese	267			P	
7439-97-6	Mercury	0.095			CV	
7440-02-0	Nickel	21.2			P	
7440-09-7	Potassium	4590			P	
7782-49-2	Selenium	0.93	~~B~~	~~U~~ L	P	MSL
7440-22-4	Silver	1.4	~~U~~	UL	P	MBL
7440-23-5	Sodium	10800			P	
7440-28-0	Thallium	2.9	~~U~~	UL	P	MBL
7440-62-2	Vanadium	54.8			P	
7440-66-6	Zinc	128			P	

JAC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SD74P-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-10

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 33.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	24100			P	
7440-36-0	Antimony	0.56	~~B~~	~~N~~ B	P	MBL
7440-38-2	Arsenic	8.9			P	
7440-39-3	Barium	45.8	~~B~~	J	P	
7440-41-7	Beryllium	1.4	~~B~~	B	P	MBL
7440-43-9	Cadmium	1.4	~~U~~	UL	P	MBL
7440-70-2	Calcium	2390			P	
7440-47-3	Chromium	47.8			P	
7440-48-4	Cobalt	8.4			P	
7440-50-8	Copper	26.1			P	
7439-89-6	Iron	39000			P	
7439-92-1	Lead	31.2			P	
7439-95-4	Magnesium	7110			P	
7439-96-5	Manganese	290			P	
7439-97-6	Mercury	0.086	~~B~~	J	CV	
7440-02-0	Nickel	21.7			P	
7440-09-7	Potassium	4910			P	
7782-49-2	Selenium	0.86	~~U~~	~~N~~ L	P	MSL
7440-22-4	Silver	1.4	~~U~~	~~N~~ UL	P	MBL
7440-23-5	Sodium	11100			P	
7440-28-0	Thallium	2.8	~~U~~	UL	P	MBL
7440-62-2	Vanadium	58.5			P	
7440-66-6	Zinc	132			P	

Xicon JRC 10909

JRC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SD75-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-09

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 36.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	23500			P	
7440-36-0	Antimony	0.66	~~B~~	~~N~~ B	P	MBL
7440-38-2	Arsenic	10.8			P	
7440-39-3	Barium	47.0	~~B~~	J	P	
7440-41-7	Beryllium	1.4		B	P	MBL
7440-43-9	Cadmium	1.3	~~U~~	UL	P	MBL
7440-70-2	Calcium	2220			P	
7440-47-3	Chromium	47.2			P	
7440-48-4	Cobalt	8.4			P	
7440-50-8	Copper	27.4			P	
7439-89-6	Iron	39800			P	
7439-92-1	Lead	33.9			P	
7439-95-4	Magnesium	7260			P	
7439-96-5	Manganese	276			P	
7439-97-6	Mercury	0.11			CV	
7440-02-0	Nickel	22.5			P	
7440-09-7	Potassium	4690			P	
7782-49-2	Selenium	0.91	~~B~~	~~N~~ L	P	MSL
7440-22-4	Silver	1.3	~~U~~	UL	P	MBL
7440-23-5	Sodium	10200			P	
7440-28-0	Thallium	2.7	~~U~~	UL	P	MBL
7440-62-2	Vanadium	66.9			P	
7440-66-6	Zinc	138			P	

JC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SD76-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-11

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 41.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	14500			P	
7440-36-0	Antimony	2.2	U	UL	P	MSL
7440-38-2	Arsenic	8.5			P	
7440-39-3	Barium	29.6	U	J	P	
7440-41-7	Beryllium	0.99	U	B	P	MBL
7440-43-9	Cadmium	1.1	U	UL	P	MBL
7440-70-2	Calcium	3240			P	
7440-47-3	Chromium	32.1			P	
7440-48-4	Cobalt	5.6			P	
7440-50-8	Copper	18.9			P	
7439-89-6	Iron	28600			P	
7439-92-1	Lead	22.1			P	
7439-95-4	Magnesium	4890			P	
7439-96-5	Manganese	197			P	
7439-97-6	Mercury	0.079			CV	
7440-02-0	Nickel	15.6			P	
7440-09-7	Potassium	3410			P	
7782-49-2	Selenium	0.75	U	UL	P	MSL
7440-22-4	Silver	1.1	U	UL	P	MBL
7440-23-5	Sodium	7650			P	
7440-28-0	Thallium	2.2	U	UL	P	MBL
7440-62-2	Vanadium	44.6			P	
7440-66-6	Zinc	99.7			P	

JLC 10/9/09

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS
-I-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SD77-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-12

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 33.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	19300			P	
7440-36-0	Antimony	0.93	~~B~~	~~N~~ B	P	MBL
7440-38-2	Arsenic	9.6			P	
7440-39-3	Barium	38.6	~~B~~	J	P	
7440-41-7	Beryllium	1.3	~~B~~	B	P	MBL
7440-43-9	Cadmium	1.4	~~U~~	UL	P	MBL
7440-70-2	Calcium	2230			P	
7440-47-3	Chromium	40.1			P	
7440-48-4	Cobalt	7.2			P	
7440-50-8	Copper	26.0			P	
7439-89-6	Iron	33000			P	
7439-92-1	Lead	36.3			P	
7439-95-4	Magnesium	5650			P	
7439-96-5	Manganese	322			P	
7439-97-6	Mercury	0.11			CV	
7440-02-0	Nickel	20.1			P	
7440-09-7	Potassium	4150			P	
7782-49-2	Selenium	1.2	~~U~~	~~N~~ L	P	MBL
7440-22-4	Silver	1.4	~~U~~	UL	P	MBL
7440-23-5	Sodium	7890			P	
7440-28-0	Thallium	2.9	~~U~~	UL	P	MBL
7440-62-2	Vanadium	62.1			P	
7440-66-6	Zinc	127			P	

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SD78-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Lab Sample ID: 0908015-13

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 37.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	8150			P	
7440-36-0	Antimony	0.97	~~U~~	~~U~~ B	P	MBL
7440-38-2	Arsenic	2.8			P	
7440-39-3	Barium	24.8	~~U~~	J	P	
7440-41-7	Beryllium	0.69	~~U~~	B	P	MBL
7440-43-9	Cadmium	1.3	~~U~~	UL	P	MBL
7440-70-2	Calcium	13100			P	
7440-47-3	Chromium	19.6			P	
7440-48-4	Cobalt	3.1			P	
7440-50-8	Copper	8.2			P	
7439-89-6	Iron	14100			P	
7439-92-1	Lead	12.3			P	
7439-95-4	Magnesium	3350			P	
7439-96-5	Manganese	106			P	
7439-97-6	Mercury	0.047	~~U~~	J	CV	
7440-02-0	Nickel	8.6	~~U~~	J	P	
7440-09-7	Potassium	2360			P	
7782-49-2	Selenium	1.3	~~U~~	~~U~~ UL	P	MBL
7440-22-4	Silver	1.3	~~U~~	UL	P	MBL
7440-23-5	Sodium	9660			P	
7440-28-0	Thallium	2.6	~~U~~	UL	P	MBL
7440-62-2	Vanadium	26.7			P	
7440-66-6	Zinc	46.7			P	

JAC 10909

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: YELLOW Clarity After: Artifacts:

Comments:

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD70-0809
0908015-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	392	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:42	EPA 310.2
pH	7.6		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	11250	190.1	mg/kg dry	1	9081119	08/11/2009 11:58	08/14/2009 13:44	LLOYD KAHN

TOC only JC 10809

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Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD71-0809

0908015-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:43	EPA 310.2 U
pH	7.6		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	22370	249.4	mg/kg dry	1	9081119	08/11/2009 11:58	08/14/2009 13:52	LLOYD KAHN

TOC only JAC 10809

CompuChem
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Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD72-0809

0908015-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	1180	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:44	EPA 310.2
pH	7.6		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	20700	259.1	mg/kg dry	1	9081119	08/11/2009 11:58	08/14/2009 14:06	LLOYD KAHN

TDC only
JLC 10869

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Preeti Khare For Cathy Dover, Project Manager

069

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD69-0809

0908015-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	894	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:45	EPA 310.2
pH	7.7		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	9428	147.7	mg/kg dry	1	9081119	08/11/2009 11:58	08/14/2009 14:13	LLOYD KAHN

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JAC 10809

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD68-0809

0908015-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	314	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:46	EPA 310.2
pH	8.1		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	13810	172.4	mg/kg dry	1	9081119	08/11/2009 11:58	08/14/2009 14:19	LLOYD KAHN

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CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD73-0809

0908015-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	172	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:46	EPA 310.2 J
pH	7.7		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	23130	296.7	mg/kg dry	1	9081119	08/11/2009 11:58	08/14/2009 14:27	LLOYD KAHN

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Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD74-0809

0908015-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	533	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:52	EPA 310.2
pH	7.2		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	25810	303.0	mg/kg dry	1	9081119	08/11/2009 11:58	08/17/2009 12:11	LLOYD KAHN

TOC only
JLC 10809

CompuChem
A Division Of
Liberty Analytical Corp

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD75-0809

0908015-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	1290	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:53	EPA 310.2
pH	8.1		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	33390	274.0	mg/kg dry	1	9081119	08/11/2009 11:58	08/17/2009 12:24	LLOYD KAHN

TOC only
JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD76-0809

0908015-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	391	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:53	EPA 310.2
pH	7.8		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	25580	242.7	mg/kg dry	1	9081119	08/11/2009 11:58	08/17/2009 12:57	LLOYD KAHN

TOC only

JJC 10809

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Preeti Khare For Cathy Dover, Project Manager

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD77-0809
0908015-12 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	531	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:54	EPA 310.2
pH	7.3		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	50270	300.3	mg/kg dry	1	9081119	08/11/2009 11:58	08/17/2009 13:17	LLOYD KAHN

TOC only
10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/20/2009 17:32

YS06-SD78-0809

0908015-13 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Alkalinity	ND	200	mg/kg	1	9081117	08/13/2009 11:53	08/14/2009 13:55	EPA 310.2 U
pH	7.2		pH Units	1	9081118	08/11/2009 11:57	08/14/2009 17:14	EPA 9045C/9045D
Total Organic Carbon	38460	268	mg/kg dry	1	9081119	08/11/2009 11:58	08/17/2009 13:29	LLOYD KAHN

TOC only
10809

CTO-1660

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078

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CHZM Hill	Project Name: CTO-1660
Address: 5700 Cleveland St Suite 101	Sampling Location: ~~Ft~~ Yorktown NWS Site 6
City: Va Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Rebekah Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8511	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: F. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection: Date	Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3	Metals ILM03.3	FMetals ILM05.3	Explo/PETN/3,5-DNA 8330	TDS 160.1	Metals, pH, TOC, Alkal	AVS/SEM 7 metals	Grain Size D422	EXPL/AVS/SEM	SUB	pH / Sample Info (Lab Use): metals filtered
090801[illegible]	090801[illegible]/SO6-SW70-0809	8/4/09	0930	SW	8	3		2				3	1	1	2	1				090803[illegible]		<2 <2
[illegible]	[illegible]/SO6-SD70-0809		0940	SO	8							3			1		1	1	2	090803[illegible]		—
[illegible]	[illegible]/SO6-SW71-0809		0955	SW	8	3		2				3	1	1	2	1				090803[illegible]		<2 <2
[illegible]	[illegible]/SO6-SD71-0809		1000	SO	8							3			1		1	1	2	090803[illegible]		—
[illegible]	[illegible]/SO6-SW72-0809		1020	SW	8	3		2				3	1	1	2	1				090803[illegible]		<2 <2
[illegible]	[illegible]/SO6-SD72-0809		1025	SO	8							3			1		1	1	2	090803[illegible]		—
[illegible]	[illegible]/SO6-SW69-0809		1040	SW	8	3		2				3	1	1	2	1				090803[illegible]		<2 <2
[illegible]	[illegible]/SO6-SD69-0809		1045	SO	8							3			1		1	1	2	090803[illegible]		—
[illegible]	[illegible]/SO6-SW68-0809		1100	SW	8	3		2				3	1	1	2	1				090803[illegible]		<2 <2
[illegible]	[illegible]/SO6-SW68P-0809	↓	1105	SW	7	3		2				3	1	1	2					090803[illegible]		—

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Sample Custody

Relinquished by:	Date/Time: 8/4/09 1900	Received by:	Date/Time: 8/5/09 1125	
Relinquished by:	Date/Time:	Received by:	Date/Time:	
Subcontact? (Y) or N If yes, where? EXPL+PETN+3,5-DNA TO EMPIRICA AVS/SEM TO CAS GRAIN SIZE TO CTLABS	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 4.9, 5.7, 1.1, 2.4 °C, 6.9°C	

Samples sr 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for custome

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079

CTO-166

CHAIN OF CUSTODY

Page 2 of 2

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166		GW - Ground water WW - Waste water SW - Surface water SO - Soil/Sediment TB - Trip Blank RI - Rinsate WP - Wipe O - Other
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 6		
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT		
Project Contact: Rebecca Shaw	Batch QC or Project Specific? If Specific, which Sample ID?		
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or N		
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?		

CompuChem No (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3	Metals ILM05.3	F Metals ILM05.3	Expl/PETN/13,5-DNA 8330	TDS 160.1	Metals; pH, TOC, Alkalinity	AVS/SEM 7 metals	Grain Size D422	Expl/AVS/SEM	pH / Sample Info (Lab Use)	metals	Filtered metals
0908015-05	YS06-SD68-0809	8/4/09	1110	SO	8							3			1		1	1	2	0908034-05 0908035-05		1	1
0908015-06	YS06-SD68P-0809		1120	SO	6							3	1		1			1		0908034-06 0908035-06		1	1
0908016-07	YS06-FB01-080409		1400	AQ	6	3		1				3	1		2					Expl 0908036-07		2	1
0908016-08	YS06-FB02-080409		1405	AQ	7	3		1				3	1		2	1				0908036-08		2	1
0908016-09 0908017-01	YS06-EB02-080409		1445	AQ	8	3		2				3	1	1	2	1				0908036-09		2	1
0908016-10	YS06-EB01-080409		1450	AQ	6	3		1				3	1		2					0908036-10		2	1
0908016-11	YS06-TB01-080409	↓	1500	TB	3	3						3											1

Lab Use Only

Sample Unpacked By: D. R. Shaw
Sample Order Entry By: Kelly Thomas
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or N/A
625 & Phenol samples checked for chlorine? Y or N/A
608 samples checked for pH between 5.0-9.0? Y or N/A

Comments

FB01 = SD FB02 = SW
EB02 = SW EB01 = SD

Sample Custody

Relinquished by:		Date/Time: 8/4/09 1900	Received by: D. R. Shaw	Date/Time: 8/5/09 1125	
Relinquished by:		Date/Time:	Received by:	Date/Time:	
Subcontact? Y or N If yes, where?		Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: 4.9, 5.7, 5.5 °C	

Samples stor[illegible] days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

4, 1.9°C

CTO-166

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CHAIN OF CUSTODY

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080

CompuChem
a division of Liberty Analytical Co

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Company Name: CH2M Hill
Address: 5700 Cleveland St
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekha Shaw
Phone #: 757-671-8311
Sampler's Name: P. Murphy

Project Name: CTO-166
Sampling Location: Yorktown NWS Site 6
Turnaround time: Per Contract
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Analysis (include method and bottle type)

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3 40ml	Metals ILM05.3	F Metals ILM05.3	Expl/PETN/3,5-DNA 8330	TDS 160.1	Metals, pH, TEC, Alkalinity	AVS/SEM 7 metals	Grain Size D422	EXPL/PETN
0908016-12 0908017-08	YS06-SW73-0809	8/5/09	1035	SW	24	9		6				9	3	3	6	3				0908036-11
0908015-09 0908033-06	YS06-SD73-0809		1045	SO	24							9			3		3	3	6	0908034-07 0908035-07
0908016-13 0908017-09	YS06-SW74-0809		1135	SW	8	3		2				3	1	1	2	1				0908036-12
0908016-14 0908017-10	YS06-SW74P-0809		1140	SW	7	3		2				3	1	1	2					0908036-13
0908015-06 0908033-07	YS06-SD74-0809		1150	SO	8							3			1		1	1	2	0908034-08 0908035-08
0908015-10	YS06-SD74P-0809		1200	SO	6							3	1		1			1		0908034-09 0908035-09
0908016-15 0908017-11	YS06-SW75-0809		1215	SW	8	3		2				3	1	1	2	1				0908036-14
0908015-04 0908033-08	YS06-SD75-0809		1220	SD	8							3			1		1	1	2	0908034-10 0908035-10
0908016-16 0908017-12	YS06-EB01-080509		1615	AQ	8	3		2				3	1	1	2	1				0908036-15
0908016-17	YS06-EB02-080509	✓	1630	AQ	6	3		1				3	1		2					0908036-16

Sample Unpacked By: JK
Sample Order Entry By:
Samples Received in Good Condition? Y or N (recd)
If no, explain: SW73-AL Broken

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments:
YS06-SW73 / SD73 Run MS/MSD
EB01-SW
EB02-SD
Residual Chlorine Present?
Yes ✓

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by:	Date/Time: 8/5/09 2000	Received by: JK	Date/Time: 8/6/09 0800
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? EXPL+PETN+3,5-DNA to EMPIRICAL AVS/SEM to CAS GRAIN SIZE to CT LABS

Custody Seal(s) intact? Y or N | On Ice? Y or N | Cooler Temp: 1.6, 1.3, 2.6, °C 0.- 2°C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

№ 03932

Page 1 of 1

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebekka Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Lab ID	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3	Metals ILM05.3 100DM	FMetals ILM05.3 100DM	Explo/PETN/3,5-DNA 8330 AL	TDS 160.1 SDDML	Metals, pH, TOC, Alkalinity SD-2	AVS/SEM 7 Metals 402	Grain size D422 802	Expl / AVS-SEM	Matrix
0908016-14 / 0908017-13	YS06-SW76-0809	8/6/09	1020	SW	8	3		2				3	1	1	2	1				0908036-17	SW
0908015-11 / 0908033-09	YS06-SO76-0809		1030	SO	8							3			1		1	1	2	0908035-11	SO
0908016-20 / 0908017-14	YS06-SW77-0809		1045	SW	8	3		2				3	1	1	2	1				0908036-18	SW
0908015-12 / 0908033-10	YS06-SO77-0809		1050	SO	8							3			1		1	1	2	0908035-12	SO
0908016-21 / 0908017-15	YS06-SW78-0809		1145	SW	8	3		2				3	1	1	2	1				0908036-19	SW
0908015-13 / 0908033-11	YS06-SO78-0809		1155	SO	8							3			1		1	1	2	0908035-13	SO
0908016-22 / 0908017-16	YS06-EB01-080609		1400	AQ	8	3		2				3	1	1	2	1				0908036-20	AQ
0908031-01 / 0908033-08	YS06-EB02-080609		1430	AQ	6	3		1				3	1		2					0908042-01	AQ
0908016-23	YS06-TB01-080609	↓	1445	TB	3	3															

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

EB01=SW EB02=SD

Sample Custody

Relinquished by:	Date/Time: 8/6/09 1730	Received by:	Date/Time: 8/7/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? (Y) or N If yes, where? PETN + 3,5-DNA + EXPL to Empirical
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 2.1, 2.1, 1.3 °C

Samples stored 30 days after date report mailed at no extra charge.
GRAINSIZE to CT LABS
AVS/SEM to CAS

White & Yellow copy to lab • Pink copy for customer

141
081

DOD CRITERIA 11 SDG 5" - 0908034

S 13336

SUBCONTRACT CHAIN-OF-CUSTODY RECORD (start SDG5)

082

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: JANICE SCHILLING	Phone: (919) 379-4100 X 4089
Report style: Level IV	Address: 621 Mainstream Drive, Suite 270, Nashville, TN 37228	Fax: (919) 379-4052
Disk requirement: CHMHILL LabSpec	Phone: (615) 345-1115 X223	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state) VA	Project-specific (PS) or Batch (B) QC? LCS/LCSD for non designated MS will ca

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP
S - SW-846
W- CWA 600-series
O- Other _____
T- TCLP

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Explosives 8330 + PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
												0908040 MS
YS06-SD70-0809	8/4	0940	S	F	U			1		✓		-01 0908035-11
YS06-SD71-0809		1000								✓		-02 -12
YS06-SD72-0809		1025								✓		-03 -13
YS06-SD69-0809		1045								✓		-04 -14
YS06-SD68-0809		1110								✓		-05 -15
YS06-SD68P-0809	↓	1120	↓	↓	↓			↓		✓		-06 -16 MS

K Dover 8/5/09

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N **Describe any problems:**

#1 Relenquished by:(sig) K Dover	Date: 8/5/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1550	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 8/6/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 09:0

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

E80

William Schwab

From: Janice Shilling [jshilling@empirlabs.com]
Sent: Thursday, August 06, 2009 1:16 PM
To: wschwab@empirlabs.com
Subject: 0908035

Will

-011 to -016 are going to have to go into their own WO. I notice the client wrote " SDG005" and "STG006" on the coc's.

I will bring the folder back to you

Janice Shilling
Project Manager
Empirical Laboratories, LLC
621 Mainstream Drive, Suite 270 I Nashville, TN 37228 I www.empirlabs.com
Main: 615.345.1115 ext. 256 I Toll free: 877.345.1113 I Cell: 615.207.9918 I Fax: 615.846.5426

Recipient of the 2008 Region IV (Southeastern US) Subcontractor of the Year from the Small Business Administration.
Celebrating over 40 years of excellence, Empirical Laboratories is certified as a Woman-Owned Small Business and a Small Disadvantaged Business. Come visit our website at www.empirlabs.com today.

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908040 Number of Coolers: 1 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: 08/06/09 08:30 WS 09:00 Date cooler(s) opened: 08/06/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: ~~FedEx~~ WS (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9218

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 0.1°C

Dates samples were logged-in: 8/06/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

DOD CRITERIA "SDG 5" (soils) s 13339 continue

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 Yorktown NWS	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVE
TAT: 20 calendar days	Contact: JANICE SCHILLING	Phone: (919) 379-4100 x4089
Report style: level IV	Address: 621 Mainstream Drive Suite 270 Nashville, TN 37228	Fax: (919) 379-4050
Disk requirement: ChemHill LabSpec 7	Phone: (615) 345-1115 x 232	Sampling complete? Y or N (see Note 1)
	Project Locale (state) VA	Project-specific (PS) or Batch (B) QC?

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP T- TCLP
S - SW-846
W- CWA 600-series
O- Other

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Explosives 8330 + PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YSØ6-SD73-ØSØ9	8/5	1045	S	F	U			3	X	✓		USE FOR MS/MSD -01
YSØ6-SD74-ØSØ9		1150						1		✓		090805 -02
YSØ6-SD74P-ØSØ9		1200						1		✓		-03
YSØ6-SD75-ØSØ9		1220						1		✓		-04

K. Dove 8/6/09

Clients Special Instructions: Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) K. Dove Date: 1535	#2 Relinquished by:(sig) Date:	Relinquished by:(sig) Date:
Company Name: Compuchem Time: 8/6/09	Company Name: Time:	Company Name: Time:
#1 Received by:(sig) Date:	#2 Received by:(sig) Date:	#2 Received by:(sig) Date: 8/7/09
Company Name: Time:	Company Name: Time:	Company Name: Time: 09:09

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

980

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908055 Number of Coolers: 2 of 2

Client: Compuchem Project: CTO-166

Date/Time Received: **8/07/09** **09:00** Date cooler(s) opened: **8/07/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 5410

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 2-3°C

Dates samples were logged-in: **8/07/09**

9. Initial this form to acknowledge login of sample(s): (Name): **WILLIAM SCHWAB** (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

DOD CRITERIA "SDG 5" (soils)

S 13347

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

Continue

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 Yorktown NWS	Samples shipped to: Empirical	CompuChem point-of-contact: (4) CATHY DAVER
TAT: 20 calendar days	Contact: Janice Schilling	Phone: (919) 379-4100 X 4089
Report style: level IV	Address: 621 Main Stream Drive, Ste 270 Nashville TN 37228	Fax: (919) 379-4050
Disk requirement: CH2M Hill Lab Spec 7	Phone: (615) 245 1115 xt 232	Sampling complete? Y or N (see Note 1)
	Project Locale (state) VA	Project-specific (PS) or Batch (B) QC?

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP
S - SW-846
W- CWA 600-series
O-Other
T- TCLP

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Explosives 8330T PETN +3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-SD76-0809	8/6	1030	5	F	U			1		✓		0908063-01
YS06-SD77-0809	↓	1050	↓	↓	↓			1		✓		-02
YS06-SD78-0809	↓	1155	↓	↓	↓			1		✓		-03

8/7/09

Clients Special Instructions:

Temperature 3.1 °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) R. Lewis	Date: 8/7/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1415	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig) E Lin	Date: 8/8	#2 Received by:(sig)	Date: 8/8/09
Company Name:	Time:	Company Name:	Time: 830	Company Name:	Time: 08:30

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio, if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

3, 1 of 1

Revision 0 2-10-99

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908062 Number of Coolers: 1 of 1

Client: Cornerstone Project: York Town

Date/Time Received: 8/8/09 8:30 Date cooler(s) opened: 8/8/09

Opened By (print): [illegible] (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: (FedEx) UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8422

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.1

Dates samples were logged-in: 8/10/09

9. Initial this form to acknowledge login of sample(s): (Name): **WILLIAM SCHWAB** (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 8/4-6/09
Received Date: 8/5-7/09
Analysis Dates: 8/13-14/09

Cooler Temps: 0.2-5.7°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks-no qualifications were required. The associated QC blanks for these samples were: YS06-TB01-080408 (no positive results), YS06-TB01-080509 and YS06-TB01-080609 (no positive results)- trip blanks; YS06-FB01-080409 - field blank; YS06-EB01-080409, YS06-EB02-080509 and YS06-EB02-080609- equipment blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKGU	2-butanone	3.3J ug/Kg	13 ug/Kg	33 ug/Kg
	4-methyl-2-pentaone	3.3J	13	16.5
	2-hexanone	12J	13	60
	1,2,4-trichlorobenzene	2.1J	5.0	10.5
YS06-TB01-080509	methylene chloride	0.11J ug/L	0.5 ug/L	1.1 ug/L
YS06-FB01-080409	acetone	4.1	2.5	41
	methylene chloride	0.56	0.5	5.6
	2-butanone	1.5	2.5	15
	1,2-dichloroethane	0.29J	0.5	1.45
YS06-EB01-080409	acetone	5.2	2.5	52
	methylene chloride	0.48J	0.5	4.8
	2-butanone	1.5J	2.5	15
	1,2-dichloroethane	0.21J	0.5	1.05
YS06-EB02-080509	acetone	7.5	2.5	75
	methylene chloride	0.82	0.5	8.2
	2-butanone	2.4J	2.5	24
	toluene	0.12J	2.5	0.6
YS06-EB02-080609	acetone	5.2	2.5	52
	methyl acetate	0.25J	0.5	1.25
	methylene chloride	0.89	0.5	8.9
	2-butanone	27	2.5	270

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS06-SD68-0809, YS06-SD68-0809, YS06-SD70-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD73-0809, YS06-SD74-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809, YS06-SD78-0809	acetone	B	BL
YS06-SD70-0809, YS06-SD71-0809, YS06-SD77-0809, YS06-SD69-0809, YS06-SD74-0809	2-butanone	B	BL
YS06-SD72-0809, YS06-SD74-0809	4-methyl-2-pentaone	B	BL
YS06-SD72-0809	2-hexanone	B	BL
YS06-SD72-0809	1,2,4-trichlorobenzene	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS06-SD73-0809-several compounds exhibited slightly low results however no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for samples YS06-SD68-0809 and YS06-SD74-0809—no positive results above the CRQL, no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mansfield **Date:** 10/5/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Lab File ID: 9H13001-TUN159 BFB Injection Date: 08/13/09

Instrument ID: 5972HP59 BFB Injection Time: 1129

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.2
75	30.0 - 60.0% of mass 95	46.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	74.0
175	5.0 - 9.0% of mass 174	5.9 (8.0)1
176	95.0 - 101.0% of mass 174	72.3 (97.8)1
177	5.0 - 9.0% of mass 176	5.2 (7.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	9H13001-CCV	9H13001-CCV159	08/13/09	1155
02	VBLKGS	9081303-BLK	9081303-BLK159	08/13/09	1233
03	VGSLCS	9081303-BS1	9081303-BS159	08/13/09	1329
04	YS06-SD70-0809	0908015-01	0908015-0159	08/13/09	2254
05	YS06-SD71-0809	0908015-02	0908015-0259	08/13/09	2322
06					
07					
08					
09					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

ab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Instrument ID: 5972HP59 Calibration Date: 08/13/09 Time: 1155

Lab File ID: 9H13001-CCV159 Init. Calib. Date(s): 08/11/09 08/11/09

Init. Calib. Times: 1146 1406

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF50 or AMOUNT	CCAL RRF50	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.5059600	0.5435876	0.5435876	0.001	7.44	25.00	AVRG	
Chloromethane	0.3160500	0.3305962	0.3305962	0.1	4.60	25.00	AVRG	
Vinyl Chloride	0.2868200	0.3158881	0.3158881	0.001	10.13	20.00	AVRG	
Bromomethane	0.1664000	0.2126387	0.2126387	0.001	27.79	25.00	AVRG	<-
Chloroethane	325.77621	250.00000	0.1452693	0.001	30.31	25.00	LINR	<-
Trichlorofluoromethane	0.3272400	0.4237008	0.4237008	0.001	29.48	25.00	AVRG	<-
1,1-Dichloroethene	0.2522400	0.2706572	0.2706572	0.001	7.30	20.00	AVRG	
Carbon disulfide	317.30916	250.00000	1.1540907	0.001	26.92	25.00	LINR	<-
1,1,2-trichloro-1,2,2-triflu	0.3438900	0.3933120	0.3933120	0.001	14.37	25.00	AVRG	
Acetone	855.86190	625.00000	0.0450712	0.001	36.94	25.00	LINR	<-LR
Methylene Chloride	297.03017	250.00000	0.3129821	0.001	18.81	25.00	LINR	
trans-1,2-Dichloroethene	0.2891900	0.3097552	0.3097552	0.001	7.11	25.00	AVRG	
hyl-tert-butyl ether	0.4863200	0.5609305	0.5609305	0.001	15.34	25.00	AVRG	
,1-Dichloroethane	0.4893000	0.5312134	0.5312134	0.1	8.56	25.00	AVRG	
cis-1,2-Dichloroethene	0.2804800	0.3074959	0.3074959	0.001	9.63	25.00	AVRG	
2-butanone	0.0572400	0.0620488	0.0620488	0.001	8.40	25.00	AVRG	
Chloroform	0.4687400	0.5367751	0.5367751	0.001	14.51	20.00	AVRG	
1,1,1-Trichloroethane	0.3873800	0.4500350	0.4500350	0.001	16.17	25.00	AVRG	
Carbon Tetrachloride	0.2999200	0.3606948	0.3606948	0.001	20.26	25.00	AVRG	
Benzene	1.0212100	1.1341369	1.1341369	0.001	11.06	25.00	AVRG	
1,2-Dichloroethane	0.2407900	0.2848407	0.2848407	0.001	18.29	25.00	AVRG	
Trichloroethene	0.2503200	0.2858064	0.2858064	0.001	14.18	25.00	AVRG	
1,2-Dichloropropane	0.2221300	0.2500566	0.2500566	0.001	12.57	20.00	AVRG	
Bromodichloromethane	0.3243400	0.3819223	0.3819223	0.001	17.75	25.00	AVRG	
cis-1,3-Dichloropropene	0.3637400	0.4249009	0.4249009	0.001	16.81	25.00	AVRG	
4-Methyl-2-pentanone	0.1842800	0.2006831	0.2006831	0.001	8.90	25.00	AVRG	
Toluene	0.9906000	1.0572572	1.0572572	0.001	6.73	20.00	AVRG	
trans-1,3-Dichloropropene	0.4730400	0.5360176	0.5360176	0.001	13.31	25.00	AVRG	
1,1,2-Trichloroethane	0.2601100	0.2787516	0.2787516	0.001	7.17	25.00	AVRG	
Tetrachloroethene	0.3248000	0.3605367	0.3605367	0.001	11.00	25.00	AVRG	
2-hexanone	0.1409700	0.1305279	0.1305279	0.001	-7.41	25.00	AVRG	
Dibromochloromethane	0.3078200	0.3665484	0.3665484	0.001	19.08	25.00	AVRG	
1,2-Dibromoethane	0.2547800	0.2858170	0.2858170	0.001	12.18	25.00	AVRG	
Chlorobenzene	0.8986700	0.9919250	0.9919250	0.3	10.38	25.00	AVRG	
Ethylbenzene	0.4731600	0.5347400	0.5347400	0.001	13.01	20.00	AVRG	
Styrene	0.9041100	1.0632354	1.0632354	0.001	17.60	25.00	AVRG	
Bromoform	0.1670100	0.2035826	0.2035826	0.1	21.90	25.00	AVRG	
Isopropyl Benzene	1.4928700	1.7146201	1.7146201	0.001	14.85	25.00	AVRG	
1,1,2,2-Tetrachloroethane	0.6873200	0.7605268	0.7605268	0.3	10.65	25.00	AVRG	
1,3-Dichlorobenzene	1.3908800	1.5701249	1.5701249	0.001	12.89	25.00	AVRG	
1,4-Dichlorobenzene	1.3648700	1.5233542	1.5233542	0.001	11.61	25.00	AVRG	
-Dichlorobenzene	1.2044200	1.3602905	1.3602905	0.001	12.94	25.00	AVRG	

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Instrument ID: 5972HP59 Calibration Date: 08/13/09 Time: 1155

Lab File ID: 9H13001-CCV159 Init. Calib. Date(s): 08/11/09 08/11/09

Init. Calib. Times: 1146 1406

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF50 or AMOUNT	CCAL RRF50	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
1,2-Dibromo-3-Chloropropane	0.0936400	0.1086844	0.1086844	0.001	16.07	25.00	AVRG	
1,2,4-Trichlorobenzene	0.7574900	0.8722926	0.8722926	0.001	15.16	25.00	AVRG	
Xylene (total)	0.6002500	0.6751568	0.6751568	0.001	12.48	25.00	AVRG	
Methyl acetate	0.1253700	0.1632301	0.1632301	0.001	30.20	25.00	AVRG	<-
Cyclohexane	0.4156100	0.4618717	0.4618717	0.001	11.13	25.00	AVRG	
Methylcyclohexane	0.4167600	0.4816815	0.4816815	0.001	15.58	25.00	AVRG	
m,p-Xylene (part of total)	0.6030400	0.6747043	0.6747043	0.001	11.88	25.00	AVRG	
o-Xylene (part of total)	0.5946700	0.6760618	0.6760618	0.001	13.69	25.00	AVRG	
Dibromofluoromethane	268.65796	250.00000	0.2698694	0.001	7.46	25.00	LINR	
1,2-Dichloroethane-d4	287.33975	250.00000	0.2323601	0.001	14.94	25.00	LINR	
Toluene-d8	255.52090	250.00000	1.2983002	0.001	2.21	25.00	LINR	
Bromofluorobenzene	238.02690	250.00000	0.9871874	0.001	-4.79	25.00	LINR	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Lab File ID: 9H14001-TUN159 BFB Injection Date: 08/14/09

Instrument ID: 5972HP59 BFB Injection Time: 0946

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	17.1
75	30.0 - 60.0% of mass 95	45.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	79.1
175	5.0 - 9.0% of mass 174	6.1 (7.7)1
176	95.0 - 101.0% of mass 174	78.6 (99.3)1
177	5.0 - 9.0% of mass 176	5.3 (6.8)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	9H14001-CCV	9H14001-CCV1R5	08/14/09	1053
02	VBLKGU	9081408-BLK	9081408-BLK159	08/14/09	1133
03	VGULCS	9081408-BS1	9081408-BS159	08/14/09	1214
04	VGULCSD	9081408-BSD	9081408-BSD159	08/14/09	1242
05	YS06-SD72-0809	0908015-03	0908015-0359	08/14/09	1310
06	YS06-SD69-0809	0908015-04	0908015-0459	08/14/09	1338
07	YS06-SD68-0809	0908015-05	0908015-0559	08/14/09	1406
08	YS06-SD68P-0809	0908015-06	0908015-0659	08/14/09	1434
09	YS06-SD73-0809	0908015-07	0908015-0759	08/14/09	1502
10	YS06-SD73-0809MS	9081408-MS1	9081408-MS159	08/14/09	1531
11	YS06-SD73-0809MSD	9081408-MSD	9081408-MSD159	08/14/09	1559
12	YS06-SD74-0809	0908015-08	0908015-0859	08/14/09	1627
13	YS06-SD75-0809	0908015-09	0908015-0959	08/14/09	1655
14	YS06-SD74P-0809	0908015-10	0908015-1059	08/14/09	1723
15	YS06-SD76-0809	0908015-11	0908015-1159	08/14/09	1751
16	YS06-SD77-0809	0908015-12	0908015-1259	08/14/09	1819
17	YS06-SD78-0809	0908015-13	0908015-1359	08/14/09	1847
18					
19					
20					
21					
22					

FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

ab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Instrument ID: 5972HP59 Calibration Date: 08/14/09 Time: 1053

Lab File ID: 9H14001-CCV1R5 Init. Calib. Date(s): 08/11/09 08/11/09

Init. Calib. Times: 1146 1406

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF50 or AMOUNT	CCAL RRF50	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	0.5059600	0.4758052	0.4758052	0.001	-5.96	25.00	AVRG
Chloromethane	0.3160500	0.3025354	0.3025354	0.1	-4.28	25.00	AVRG
Vinyl Chloride	0.2868200	0.2976121	0.2976121	0.001	3.76	20.00	AVRG
Bromomethane	0.1664000	0.1467537	0.1467537	0.001	-11.81	25.00	AVRG
Chloroethane	282.64159	250.00000	0.1267436	0.001	13.06	25.00	LINR
Trichlorofluoromethane	0.3272400	0.3489046	0.3489046	0.001	6.62	25.00	AVRG
1,1-Dichloroethene	0.2522400	0.2354071	0.2354071	0.001	-6.67	20.00	AVRG
Carbon disulfide	272.23477	250.00000	1.0064308	0.001	8.89	25.00	LINR
1,1,2-trichloro-1,2,2-triflu	0.3438900	0.3143387	0.3143387	0.001	-8.59	25.00	AVRG
Acetone	674.13980	625.00000	0.0364352	0.001	7.86	25.00	LINR
Methylene Chloride	262.79373	250.00000	0.2800946	0.001	5.12	25.00	LINR
trans-1,2-Dichloroethene	0.2891900	0.2726340	0.2726340	0.001	-5.72	25.00	AVRG
hyl-tert-butyl ether	0.4863200	0.4845249	0.4845249	0.001	-0.37	25.00	AVRG
1,1-Dichloroethane	0.4893000	0.4679696	0.4679696	0.1	-4.36	25.00	AVRG
cis-1,2-Dichloroethene	0.2804800	0.2720316	0.2720316	0.001	-3.01	25.00	AVRG
2-butanone	0.0572400	0.0526961	0.0526961	0.001	-7.94	25.00	AVRG
Chloroform	0.4687400	0.4713025	0.4713025	0.001	0.55	20.00	AVRG
1,1,1-Trichloroethane	0.3873800	0.3728862	0.3728862	0.001	-3.74	25.00	AVRG
Carbon Tetrachloride	0.2999200	0.2881738	0.2881738	0.001	-3.92	25.00	AVRG
Benzene	1.0212100	0.9964615	0.9964615	0.001	-2.42	25.00	AVRG
1,2-Dichloroethane	0.2407900	0.2432465	0.2432465	0.001	1.02	25.00	AVRG
Trichloroethene	0.2503200	0.2447284	0.2447284	0.001	-2.23	25.00	AVRG
1,2-Dichloropropane	0.2221300	0.2165125	0.2165125	0.001	-2.53	20.00	AVRG
Bromodichloromethane	0.3243400	0.3303078	0.3303078	0.001	1.84	25.00	AVRG
cis-1,3-Dichloropropene	0.3637400	0.3672710	0.3672710	0.001	0.97	25.00	AVRG
4-Methyl-2-pentanone	0.1842800	0.1714349	0.1714349	0.001	-6.97	25.00	AVRG
Toluene	0.9906000	0.9095626	0.9095626	0.001	-8.18	20.00	AVRG
trans-1,3-Dichloropropene	0.4730400	0.4693116	0.4693116	0.001	-0.79	25.00	AVRG
1,1,2-Trichloroethane	0.2601100	0.2454632	0.2454632	0.001	-5.63	25.00	AVRG
Tetrachloroethene	0.3248000	0.2959485	0.2959485	0.001	-8.88	25.00	AVRG
2-hexanone	0.1409700	0.1095743	0.1095743	0.001	-22.27	25.00	AVRG
Dibromochloromethane	0.3078200	0.3072056	0.3072056	0.001	-0.20	25.00	AVRG
1,2-Dibromoethane	0.2547800	0.2511188	0.2511188	0.001	-1.44	25.00	AVRG
Chlorobenzene	0.8986700	0.8589326	0.8589326	0.3	-4.42	25.00	AVRG
Ethylbenzene	0.4731600	0.4549583	0.4549583	0.001	-3.85	20.00	AVRG
Styrene	0.9041100	0.9070134	0.9070134	0.001	0.32	25.00	AVRG
Bromoform	0.1670100	0.1799153	0.1799153	0.1	7.73	25.00	AVRG
Isopropyl Benzene	1.4928700	1.4510372	1.4510372	0.001	-2.80	25.00	AVRG
1,1,2,2-Tetrachloroethane	0.6873200	0.6481023	0.6481023	0.3	-5.70	25.00	AVRG
1,3-Dichlorobenzene	1.3908800	1.3606813	1.3606813	0.001	-2.17	25.00	AVRG
1,4-Dichlorobenzene	1.3648700	1.2755197	1.2755197	0.001	-6.55	25.00	AVRG
-Dichlorobenzene	1.2044200	1.1715972	1.1715972	0.001	-2.72	25.00	AVRG

L/R

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Instrument ID: 5972HP59 Calibration Date: 08/14/09 Time: 1053

Lab File ID: 9H14001-CCV1R5 Init. Calib. Date(s): 08/11/09 08/11/09

Init. Calib. Times: 1146 1406

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF50 or AMOUNT	CCAL RRF50	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,2-Dibromo-3-Chloropropane	0.0936400	0.0889779	0.0889779	0.001	-4.98	25.00	AVRG
1,2,4-Trichlorobenzene	0.7574900	0.7271715	0.7271715	0.001	-4.00	25.00	AVRG
Xylene (total)	0.6002500	0.5760289	0.5760289	0.001	-4.04	25.00	AVRG
Methyl acetate	0.1253700	0.1548443	0.1548443	0.001	23.51	25.00	AVRG
Cyclohexane	0.4156100	0.3580887	0.3580887	0.001	-13.84	25.00	AVRG
Methylcyclohexane	0.4167600	0.3845534	0.3845534	0.001	-7.73	25.00	AVRG
m,p-Xylene (part of total)	0.6030400	0.5766274	0.5766274	0.001	-4.38	25.00	AVRG
o-Xylene (part of total)	0.5946700	0.5748321	0.5748321	0.001	-3.34	25.00	AVRG
Dibromofluoromethane	241.99159	250.00000	0.2467403	0.001	-3.20	25.00	LINR
1,2-Dichloroethane-d4	248.78113	250.00000	0.2057808	0.001	-0.49	25.00	LINR
Toluene-d8	238.27009	250.00000	1.2310397	0.001	-4.69	25.00	LINR
nofluorobenzene	219.61830	250.00000	0.9226429	0.001	-12.15	25.00	LINR

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKGU

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Lab File ID: 9081408-BLK159 Lab Sample ID: 9081408-BLK1

Date Analyzed: 08/14/09 Time Analyzed: 1133

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972HP59

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

2-hex 2-but 4-methyl 1,2

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED	
01	VGULCS	9081408-BS1	9081408-BS15	1214	
02	VGULCSD	9081408-BSD1	9081408-BSD1	1242	
03	YS06-SD72-0809	0908015-03	0908015-0359	1310	B B
04	YS06-SD69-0809	0908015-04	0908015-0459	1338	
05	YS06-SD68-0809	0908015-05	0908015-0559	1406	
06	YS06-SD68P-0809	0908015-06	0908015-0659	1434	
07	YS06-SD73-0809	0908015-07	0908015-0759	1502	
08	YS06-SD73-0809MS	9081408-MS1	9081408-MS15	1531	
09	YS06-SD73-0809MSD	9081408-MSD1	9081408-MSD1	1559	
10	YS06-SD74-0809	0908015-08	0908015-0859	1627	B
11	YS06-SD75-0809	0908015-09	0908015-0959	1655	
12	YS06-SD74P-0809	0908015-10	0908015-1059	1723	
13	YS06-SD76-0809	0908015-11	0908015-1159	1751	
14	YS06-SD77-0809	0908015-12	0908015-1259	1819	
15	YS06-SD78-0809	0908015-13	0908015-1359	1847	
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B B

COMMENTS:

2-butanone 3.3J ug/Kg
4-methyl-2-pentanone 3.3J
2-hexanone 12J

FORM IV VOA

1,2,4-trichlorobenzene 2.1J

Initial Calibration Date: 8/11/2009

RRF and %RSD Calculations:

Compound Name: chloromethane
Lab Value: 0.288

Area of Compound	1343369
Area of Internal STD	1165641
Conc. of Internal STD	250
Conc. of Compound	1000
Calculated RRF	0.288

Compound Name: 4-methyl-2-pentanone
Lab Value: 5.05

RRF of STD 1	0.1793
RRF of STD 2	0.1831
RRF of STD 3	0.1883
RRF of STD 4	0.1963
RRF of STD 5	0.1893
RRF of STD 6	0.1694
Calculated % RSD	5.05

Continuing Calibration File ID: 8/13/2009

RRF and %D Calculations:

Compound Name: chloroform
Lab Value: 0.537

Area of Compound	540277
Area of Internal STD	1006524
Conc. of Internal STD	250
Conc. of Compound	250
Calculated RRF	0.537

Compound Name: toluene
Lab Value: 6.7

Average RRF	0.991
Calibration Check RRF	1.057
Calculated % D	-6.7

SAMPLE CALCULATION

Sample ID: YS06-SD74-08009
Standard ID: 8/14/2009
Compound: 2-butanone
Concnetration: 31 ug/Kg

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound		7948	
Area of Internal STD		1174995	
Conc. of Internal (ng)	125	250	
RRF of Compound		0.05724	
Dilution Factor	1	1	
Weight of Sample	NA	2.93	
Volume of Sample	25	NA	
% Moisture	NA	0.33	
Aliquot of sample	NA	NA	
Concentration	#DIV/0!	31	#DIV/0!

	RT of Internal STD	RT of Compound	RRT
Sample	9.698	8.604	0.887
Standard	9.690	8.606	0.888

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0908015
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS06-SD70-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD69-0809, YS06-SD68-0809, YS06-SD68P-0809, YS06-SD73-0809, YS06-SD74-0809, YS06-SD75-0809, YS06-SD74P-0809, YS06-SD76-0809, YS06-SD77-0809, and YS06-SD78-0809

The 13 soil samples listed above were received intact, refrigerated between 0.2°C and 5.7°C, with proper documentation, in sealed shipping containers, on August 5, 6, and 7, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0908015 are included in the sample data sections.

Analysis holding time requirements were met for the samples. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in eleven/13 of the samples. All of the system monitoring compounds met recovery criteria in the analysis of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration file 9H11003-CAL159. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (VGSLCS) and (VGULCS/VGULCSD) met overall accuracy criteria. Sample YS06-SD73-0809 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
August 19, 2009

Holding Times

Sampling Date: 8/4-8/6
Received Date: 8/6-8/8
Extraction Dates: 8/12
Analysis Dates: 8/17-8/18

Sample receipt documentation was in order. Cooler temps were acceptable.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

Contamination was reported in the associated field QC blanks.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
contamination noted in field blank but no qualifications were required					

Sample ID	Compound	Q Flag	Q Code

SURROGATE RECOVERIES

All surrogate recovery criteria were met on column 1. All field sample recoveries on C2 were high. The only positive results were quanted from column 1 so the sample data was not qualified due to high surrogate recoveries.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-SD73-0809 exhibited acceptable recoveries (within QAPP limits) in the MS and/or the MSD. RPDs were OK. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compounds in the LCS and/or the LCSD. RPDs were OK. No qualifications were required

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-SD68-0809 Duplicate ID: YS06-SD68P-0809

Compound	Sample Conc.	Duplicate Conc.	RPD
nitrobenzene			#DIV/0!
1,3-dinitrobenzene			#DIV/0!
4-nitrotoluene			#DIV/0!

Comments: No qualifications were required. No + results.

Sample ID: YS06-SD74-0809 Duplicate ID: YS06-SD74P-0809

Compound	Sample Conc.	Duplicate Conc.	RPD
nitrobenzene			#DIV/0!
1,3-dinitrobenzene			#DIV/0!
4-nitrotoluene			#DIV/0!

Comments: No qualifications were required. No + results.

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J.

Reviewer JA Cleveland Date: 101009

ORGANIC CASE NARRATIVE – Explosives
CH2M Hill, Inc. - YORKTOWN_NWS
SDG: SDG005/ CTO166
Workorder: 0908040, 0908055 and 0908063

Sampled	Rec'd	Lab ID	Client ID
8/4/2009	8/6/2009	0908040-01	YS06-SD70-0809
8/4/2009	8/6/2009	0908040-02	YS06-SD71-0809
8/4/2009	8/6/2009	0908040-03	YS06-SD72-0809
8/4/2009	8/6/2009	0908040-04	YS06-SD69-0809
8/4/2009	8/6/2009	0908040-05	YS06-SD68-0809
8/4/2009	8/6/2009	0908040-06	YS06-SD68P-0809
8/5/2009	8/7/2009	0908055-01	YS06-SD73-0809
8/5/2009	8/7/2009	0908055-02	YS06-SD74-0809
8/5/2009	8/7/2009	0908055-03	YS06-SD74P-0809
8/5/2009	8/7/2009	0908055-04	YS06-SD75-0809
8/6/2009	8/8/2009	0908063-01	YS06-SD76-0809
8/6/2009	8/8/2009	0908063-02	YS06-SD77-0809
8/6/2009	8/8/2009	0908063-03	YS06-SD78-0809

Method: The samples were analyzed by USEPA SW-846 Method 8330A (shaker extraction followed by packed column HPLC) for soils upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: All CCVs were within 20% difference.
- Blank Results: No target analytes were detected in the method blanks.
- Surrogate Recoveries: All C-18 column recoveries were within limits. Recoveries on the RP column exceeded limits with a positive bias as high as 175%. All results are non-detect or below the quantitation limit and qualified as estimated.
- LCS Results: All recoveries were within limits.
- MS/MSD Results: All recoveries and relative percent differences were within limits.
- Dilutions: All samples were analyzed without dilution. Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

FORM 8
EXPL ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Column: ULTRA C-18 ID: 4.60 (mm) Cont. Calib. Date(s): 08/17/09-08/18/09

Instrument ID: HPLC2

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 21.18

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	RT #
01		SEQ-CCV	08/17/09	1405 ✓	21.18	6.88
02		SEQ-CCV	08/17/09	1503		
03	9H10005-BLK1	9H10005-BLK1	08/17/09	1538	21.18	
04	9H10005-BS1	9H10005-BS1	08/17/09	1612	21.20	
05	9H10005-BS2	9H10005-BS2	08/17/09	1647	21.19	
06	YS06-SD70-08	0908040-01	08/17/09	1721	21.19	
07	YS06-SD71-08	0908040-02	08/17/09	1755	21.25	
08	YS06-SD72-08	0908040-03	08/17/09	1830	21.27	
09	YS06-SD69-08	0908040-04	08/17/09	1904	21.23	
10	YS06-SD68-08	0908040-05	08/17/09	1938	21.24	
11	YS06-SD68P-0	0908040-06	08/17/09	2013	21.25	
12	YS06-SD73-08	0908055-01	08/17/09	2047	21.24	
13	9H10005-MS1	9H10005-MS1	08/17/09	2121	21.22	
14	9H10005-MSD1	9H10005-MSD1	08/17/09	2156	21.36	
15	9H10005-MS2	9H10005-MS2	08/17/09	2230	21.27	
16	9H10005-MSD2	9H10005-MSD2	08/17/09	2304	21.25	
17		SEQ-CCV	08/17/09	2339	21.26	6.89
18		SEQ-CCV	08/18/09	0013		
19	YS06-SD74-08	0908055-02	08/18/09	0047	21.26	
20	YS06-SD74P-0	0908055-03	08/18/09	0122	21.28	
21	YS06-SD75-08	0908055-04	08/18/09	0156	21.27	
22	YS06-SD76-08	0908063-01	08/18/09	0230	21.28	
23	YS06-SD77-08	0908063-02	08/18/09	0305	21.29	
24	YS06-SD78-08	0908063-03	08/18/09	0339	21.29	
25		SEQ-CCV	08/18/09	0413 ✓	21.31	6.91
26		SEQ-CCV	08/18/09	0448		
27						
28						
29						
30						
31						
32						

QC LIMITS
S1 = 1-Chloro-3-Nitrobenzen (+/- 0.50 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\081709.b\001V0102.D
Report Date: 18-Aug-2009 15:17

Empirical Laboratories, LLC

JLG 8-18-09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 17-AUG-2009 14:05
Lab File ID: 001V0102.D Init. Cal. Date(s): 14-MAY-2009 07-AUG-2009
Analysis Type: Init. Cal. Times: 13:47 16:30
Lab Sample ID: SEQ-CCV Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\081709.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	57.75906	62.54800	0.010	8.3	15.0	
	2 RDX	338	325	0.010	-3.7	15.0	
$	30 1,2-Dinitrobenzene	1000	1101	0.010	-10.1	15.0	
	3 1,3,5-Trinitrobenzene	1000	1053	0.010	-5.3	15.0	
	4 1,3-Dinitrobenzene	302	318	0.010	5.4	15.0	
	5 Tetryl	374	435	0.010	16.4	15.0	<-H J+ - NQ
	6 Nitrobenzene	314	334	0.010	6.2	15.0	
	9 2,4,6-Trinitrotoluene	22.64534	26.64500	0.010	17.7	15.0	<-H J+ - NQ
	10 4-Amino-2,6-dinitrotoluene	22.67709	27.16500	0.010	19.8	15.0	<-H J+ - NQ
	11 2-Amino-4,6-dinitrotoluene	435	444	0.010	2.1	15.0	
	12 2,6-Dinitrotoluene	342	344	0.010	0.6	15.0	
	13 2,4-Dinitrotoluene	16.44444	16.84800	0.010	2.5	15.0	
	14 2-Nitrotoluene	343	364	0.010	6.1	15.0	
	15 4-Nitrotoluene	273	281	0.010	3.0	15.0	
	16 3-Nitrotoluene	430	440	0.010	2.2	15.0	
$	18 1-Chloro-3-Nitrobenzene	597	629	0.010	5.3	15.0	

>20%D

No + results for cmpds >15% (nt high) in assoc samples - see Form 8 for assoc

BM 08/19

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\081709.b\025V2501.D
Report Date: 18-Aug-2009 15:20

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

SDG 8-18-09

Instrument ID: hplc2.i
Lab File ID: 025V2501.D
Analysis Type:
Lab Sample ID: SEQ-CCV
Method: \\ELABNSH05\TARGET\chem\hplc2.i\081709.b\8330.m

Injection Date: 18-AUG-2009 04:13
Init. Cal. Date(s): 14-MAY-2009 07-AUG-2009
Init. Cal. Times: 13:47 16:30
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	57.75906	59.34300	0.010	2.7	15.0	
	2 RDX	338	310	0.010	-8.3	15.0	
$	30 1,2-Dinitrobenzene	1000	1055	0.010	5.5	15.0	
	3 1,3,5-Trinitrobenzene	1000	988	0.010	1.2	15.0	
	4 1,3-Dinitrobenzene	302	337	0.010	11.7	15.0	
	5 Tetryl	374	307	0.010	-18.0	15.0	<- L J7UJ
	6 Nitrobenzene	314	327	0.010	4.0	15.0	
	9 2,4,6-Trinitrotoluene	22.64534	24.13800	0.010	6.6	15.0	
	10 4-Amino-2,6-dinitrotoluene	22.67709	24.24700	0.010	6.9	15.0	
	11 2-Amino-4,6-dinitrotoluene	435	434	0.010	-0.3	15.0	
	12 2,6-Dinitrotoluene	342	342	0.010	-0.0	15.0	
	13 2,4-Dinitrotoluene	16.44444	16.32600	0.010	-0.7	15.0	
	14 2-Nitrotoluene	343	350	0.010	2.0	15.0	
	15 4-Nitrotoluene	273	273	0.010	-0.0	15.0	
	16 3-Nitrotoluene	430	426	0.010	-1.0	15.0	
$	18 1-Chloro-3-Nitrobenzene	597	604	0.010	1.1	15.0	

<20% D

SD74 UJ Tetryl
SD74P
75
76
77
78 J Tetryl
081909 UJ Tetryl

See Forms 8 for assoc

FORM 2
SOIL EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	9H10005-BLK1	123	164*					1
02	9H10005-BS1	129						0
03	9H10005-BS2	131						0
04	YS06-SD70-08	123	160*					1
05	YS06-SD71-08	127	175*					1
06	YS06-SD72-08	119	169*					1
07	YS06-SD69-08	119	164*					1
08	YS06-SD68-08	123	170*					1
09	YS06-SD68P-0	125	167*					1
10	YS06-SD73-08	127	172*					1
11	9H10005-MS1	124						0
12	9H10005-MSD1	115						0
13	9H10005-MS2	117						0
14	9H10005-MSD2	126						0
15	YS06-SD74-08	127	172*					1
16	YS06-SD74P-0	123	168*					1
17	YS06-SD75-08	132	167*					1
18	YS06-SD76-08	122	170*					1
19	YS06-SD77-08	120	144*					1
20	YS06-SD78-08	120	167*					1
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

		EL QC LIMITS	SPIKE CONC (ug/Kg)
S1	= 1-Chloro-3-Nitrobenzen	(55-140)	1000

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

K+ for any positive results granted from Column 2 - No quals only + results granted from Column 1

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SD77-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG005

Lab Sample ID: 0908063-02 Date(s) Analyzed: 08/18/09 08/27/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
Nitrobenzene	1	9.69	9.17	10.21	125.6		
	2	7.37	6.79	7.95	2109	177.5	J
2,6-Dinitrotoluene	1	13.00	12.16	13.54	202.9		
	2	15.36	13.62	16.64	780.7	117.5	J
Tetryl	1	9.18	8.80	9.82	153.9		
	2	20.68	17.75	22.07	698.8	127.8	J
2-Nitrotoluene	1	15.93	14.85	16.17	272.4		
	2	12.31	10.70	12.94	273.4	0.4	
	1						
	2						
	1						
	2						
	1						
	2						
	1						
	2						

Initial Calibration Date: 8/7/09, HPLC2, ultra c-18 column
RRF and %RSD Calculations: RF10, FILE ID 002V0201
Compound Name: 2-nitrotoluene
Lab Value: 311.8000

Area of Compound	3118
Conc. Of Compund	10
Calculated CF	311.8000

Compound Name: 2-nitrotoluene
Lab Value: 5.6

CF 1	311.8000
CF 2	325.7600
CF 3	337.3500
CF 4	366.7580
CF 5	356.3880
CF 6	352.7260
CF7	350.9220
Calculated % RSD	5.59

Continuing Calibration File ID: 7/18/09, 4:13, file id 025v2501.d
RRF and %D Calculations:
Compound Name: tetryl
Lab Value: 307

Area of Compound	306520
Conc. Of Compund	1000
Calculated CF	306.5200

Compound Name: tetryl
Lab Value: -18

Average RRF	374.00000
Calibration Check RRF	307.00000
Calculated % D	17.9

SAMPLE CALCULATION

Sample ID: YS06-SD77-0809
Standard ID: ICAL 8/7/09
Compound:
Concentration: 270 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound		9347	
CF of Compound		343.100557	
Dilution Factor		1	
Weight of Sample	NA	2	
Extract Volume		20	
Volume of Sample		NA	
% Moisture	NA	1	
injection volume		NA	
Conversion Factor		1	
Concentration	#DIV/0!	272.43	#REF!

This SDG contains metals, mercury & TOC using SW-846 methods.

HOLDING TIMES

Sampling Date: 8/4-8/6
Received Date: 8/5-8//7
Prep. Dates: 8/25 ICP, 8/21 CVAA, 8/11 TOC
Analysis Dates: 8/27 ICP, 8/21 CVAA, 8/14 & 8/17 TOC

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria with the exception of 1 analyte. The recoveriy for thallium was >130%. Positive results up to 2X the RL required qualification as biased high K - but there were no positive results reported for Tl in the samples. ICSA/ICSAB results were acceptable. Raw data was verified. No qualifications were required based on calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:
  - No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  - B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.
  - L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBS	antimony	0.193B mg/Kg	0.965 mg/Kg	B	MBL
	cadmium	-0.041B mg/Kg	≤ 10X MDL (3.0 mg/Kg)	L/UL	MBL
	silver	-0.243B mg/Kg	≤ 10X MDL (3.0 mg/Kg)	L/UL	MBL
	thallium	-0.373B mg/Kg	≤ 10X MDL (3.7 mg/Kg)	L/UL	MBL
CCB	beryllium	1.1 ug/L	0.55 mg/Kg	B	MBL
YS06-EB01-080409	beryllium	1.1B ug/L	0.55 mg/kg	B	EBL
YS06-EB02-080509	beryllium	1.0B ug/L	0.50 mg/Kg	B	EBL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS06-SD68-0809, YS06-SD68P-0809, YS06-SD70-0809, YS06-SD72-0809, YS06-SD73-0809, YS06-SD74P-0809, YS06-SD75-0809, YS06-SD77-0809, YS06-SD78-0809	antimony	B	MBL
all samples	cadmium	L/UL	MBL
all samples	silver	L/UL	MBL
all samples	thallium	L/UL	MBL
YS06-SD68-0809, YS06-SD68P-0809, YS06-SD69-0809, YS06-SD71-0809, YS06-SD72-0809, YS06-SD74-0809, YS06-SD75-0809, YS06-SD76-0809, YS06-SD77-0809, YS06-SD78-0809	beryllium	B	MBL
YS06-SD70-0809, YS06-SD73-0809	beryllium	B	EBL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MSD/MD for this SDG exhibited acceptable recoveries and RPDs for all analytes except antimony & selenium which were recovered below the SAP QC limit of 80-120. These analytes were qualified as biased low L/UL in all samples. PDS recoveries were reasonable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses exhibited acceptable %Ds for all analytes.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Sample ID: YS06-SD68-0809 Duplicate Sample ID: YS06-SD68P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	8230	9550	15%
arsenic	4	5.1	24%
chromium	17.1	20.6	19%
cobalt	3.2	3.6	12%
copper	4.5	6.1	30%
iron	15200	18000	17%
lead	7.8	9.3	18%
magnesium	2710	3120	14%
manganese	127	124	2%
potassium	1930	2460	24%
sodium	5240	5450	4%
vanadium	20.6	25.2	20%
zinc	21.1	29.2	32%

Comments: Flag Zn as estimated J, >30% RPD.

Sample ID: YS06-SD74-0809 Duplicate Sample ID: YS06-SD74P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	22800	24100	6%
arsenic	8.2	8.9	8%
calcium	2370	2390	1%
chromium	46.6	47.8	3%
cobalt	8.3	8.4	1%
copper	25.3	26.1	3%
iron	38000	39000	3%
lead	30.5	31.2	2%
magnesium	6940	7110	2%
manganese	267	290	8%
nickel	21.2	21.7	2%
potassium	4590	4910	7%
sodium	10800	11100	3%
vanadium	54.8	58.5	7%
zinc	128	132	3%

Comments: No qualifications were required.

SAMPLE CALCULATION

EPA SAMPLE ID: YS06-SD69-0809
ANALYTE: nickel
CONCENTRATION: 5.3B mg/Kg
%Solids – 67.7

Raw Data result: 36.65411 ug/L

36.65411 ug/L * 0.1L/1.02g * 1000g/1Kg *1mg/1000ug * 1/0.677 = 5.30804 mg/Kg

EPA SAMPLE ID: YS06-SD70-0809
PARAMETER: TOC
CONCENTRATION: 11250 mg/Kg dry
%Solids – 52.6

Raw Data result: 5917 mg/L

5917 mg/L * 0.000016L/16.3mg * 1000000mg/1Kg * 1/0.526 = 11042 mg/Kg
(2%D noted - likely a rounding issue)

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer Cleveland **Date:** 10/10/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0908015

The indicated Sample Delivery Group (SDG) consisting of thirteen (13) solid samples was received into the laboratory information management system (LIMS) on August 5, 6, and 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.2 to 5.7°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBS & LCSS) was found to be within acceptable ranges and field samples were prepared and analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0908015-07 ID YS06-SD73-0809S and YS06-SD73-0809SD were inside control limits for the requested analytes except antimony and selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0908015-07 ID YS06-SD73-0809D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0908015-07 ID YS06-SD73-0809L was perfonned in accordance with requirements for ICP analysis.

The adjusted sample concentration was outside control limits for the requested analytes.

Control limits for serial dilution are defined as a deviation less than or equal to 10% in the dilution adjusted concentrations from the original values for all analyte concentrations greater than fifty (50) times their respective Instrument Detection Limit (IDL) in the original sample.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

L. Forrester for Susan Bass

Susan W. Bass
Senior Chemist
August 27, 2009

CompuChem
A Division Of
Liberty Analytical Corp.

SDG NARRATIVE
SDG # 0908015

The 11 soil samples were received intact, refrigerated with proper documentation, in sealed shipping containers, on August 5th, 6th, and 7th 2009. The samples were scheduled for the requested analysis of the Wet Chemistry fraction. The samples were analyzed, in accordance with current EPA methods, for the analytes requested as per the COC, with the exceptions and/or additions requested by the client.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

INSTRUMENTAL QUALITY CONTROL:
All calibration verification solutions (ICV & CCV), blanks (ICB, & CCB), associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS & Blank) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
YS06-SD73-0809 was used as the original to prepare the matrix spike and matrix spike duplicate.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Preeti Khare
Analyst II
August 20, 2009

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	227.05	113.5		
Antimony				60.0	63.00	105.0		
Arsenic				10.0	9.22	92.2		
Barium				200.0	199.41	99.7		
Beryllium				5.0	5.41	108.2		
Cadmium				5.0	5.25	105.0		
Calcium				2000.0	2096.86	104.8		
Chromium				10.0	9.77	97.7		
Cobalt				50.0	50.78	101.6		
Copper				25.0	24.69	98.8		
Iron				100.0	100.78	100.8		
Lead				3.0	2.73	91.0		
Magnesium				2000.0	2077.69	103.9		
Manganese				15.0	14.86	99.1		
Mercury	0.2	0.17	85.0					
Nickel				40.0	40.39	101.0		
Potassium				2000.0	1754.69	87.7		
Selenium				5.0	3.67	73.4		
Silver				10.0	9.67	96.7		
Sodium				2000.0	1840.86	92.0		
Thallium				10.0	13.24	132.4		
Vanadium				50.0	50.60	101.2		
Zinc				20.0	18.01	90.0		

K+ up to 2X RL (20)

Control Limits: no limits have been established by EPA at this time

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	200.0	U	20.000	U	P
Antimony	2.1	B	10.0	U	10.0	U	10.0	U	0.193	B	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	1.000	U	P
Barium	-0.5	B	200.0	U	200.0	U	200.0	U	-0.041	B	P
Beryllium	5.0	U	5.0	U	0.4	B	0.4	B	0.500	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	-0.041	B	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	500.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	1.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	-0.065	B	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	-0.135	B	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	10.000	U	P
Lead	3.0	U	3.0	U	3.0	U	3.0	U	0.294	B	P
Magnesium	5000.0	U	5000.0	U	26.1	B	5000.0	U	500.000	U	P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U	1.000	U	P
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.033	U	CV
Nickel	40.0	U	1.7	B	1.7	B	40.0	U	4.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	500.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	0.500	U	P
Silver	5.0	U	5.0	U	-0.5	B	-0.4	B	-0.243	B	P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	42.638	B	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	-0.373	B	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	2.000	U	P
Zinc	20.0	U	20.0	U	1.3	B	20.0	U	2.000	U	P

No samples assoc.

✓ flag as noted in report

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 4	C	5	C	6	C	Preparation Blank	C	M
Aluminum			200.0	U	200.0	U	46.8	B	NQ		P
Antimony			10.0	U	10.0	U	10.0	U			P
Arsenic			10.0	U	10.0	U	10.0	U			P
Barium			200.0	U	200.0	U	200.0	U			P
Beryllium			0.5	B	0.6	B	1.0	B			P
Cadmium			0.3	B	5.0	U	5.0	U			P
Calcium			5000.0	U	5000.0	U	5000.0	U			P
Chromium			10.0	U	10.0	U	10.0	U			P
Cobalt			5.0	U	5.0	U	5.0	U			P
Copper			5.0	U	5.0	U	5.0	U			P
Iron			100.0	U	100.0	U	100.0	U			P
Lead			3.0	U	3.0	U	3.0	U			P
Magnesium			5000.0	U	5000.0	U	5000.0	U			P
Manganese			10.0	U	10.0	U	10.0	U			P
Mercury			0.200	U	0.200	U	0.200	U			CV
Nickel			40.0	U	40.0	U	40.0	U			P
Potassium			5000.0	U	5000.0	U	5000.0	U			P
Selenium			5.0	U	5.0	U	5.0	U			P
Silver			-0.7	B	-0.4	B	-0.6	B	See ABLK		P
Sodium			5000.0	U	5000.0	U	-187.3	B	NQ		P
Thallium			10.0	U	10.0	U	10.0	U			P
Vanadium			20.0	U	20.0	U	20.0	U			P
Zinc			20.0	U	20.0	U	20.0	U			P

Y506-5073
5070

Y506-5071
72
69
68
68P
74
74P
75
76
77

Y506-5078

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			49.1	B	NQ						P
Antimony			10.0	U							P
Arsenic			10.0	U							P
Barium			200.0	U							P
Beryllium			1.1	B							P
Cadmium			5.0	U							P
Calcium			5000.0	U							P
Chromium			10.0	U							P
Cobalt			5.0	U							P
Copper			5.0	U							P
Iron			100.0	U							P
Lead			3.0	U							P
Magnesium			5000.0	U							P
Manganese			10.0	U							P
Nickel			40.0	U							P
Potassium			5000.0	U							P
Selenium			5.0	U							P
Silver			-0.5	B	see PBlk						P
Sodium			-173.2	B	NQ						P
Thallium			10.0	U							P
Vanadium			20.0	U							P
Zinc			20.0	U							P

YS06-SD78

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-SD73-0809S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 33.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Antimony	75 - 125	58.5000		0.5930	B	148.37	39.0	N	P	L/HL
Arsenic	75 - 125	19.1547		7.9896		11.87	94.1		P	
Barium	75 - 125	636.2911		40.0721	B	593.47	100.5		P	
Beryllium	75 - 125	14.9805		1.1622	B	14.84	93.1		P	
Cadmium	75 - 125	12.1960		1.4837	U	14.84	82.2		P	
Chromium	75 - 125	105.5752		44.6993		59.35	102.6		P	
Cobalt	75 - 125	145.4813		7.4424		148.37	93.0		P	
Copper	75 - 125	99.3677		21.4997		74.18	105.0		P	
Lead		33.2888		26.5703		5.93	113.3		P	
Manganese	75 - 125	403.2122		253.2652		148.37	101.1		P	
Mercury	75 - 125	0.5341		0.0989	U	0.49	109.0		CV	
Nickel	75 - 125	157.2858		19.0171		148.37	93.2		P	
Selenium	75 - 125	2.5153		1.1887	B	2.97	44.7	N	P	L/WL
Silver	75 - 125	13.5201		1.4837	U	14.84	91.1		P	
Thallium	75 - 125	11.9374		2.9674	U	14.84	80.4		P	
Vanadium	75 - 125	200.7382		49.0949		148.37	102.2		P	
Zinc	75 - 125	248.0228		110.4735		148.37	92.7		P	

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-SD73-0809SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 33.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M	
Antimony	75 - 125	59.3896		0.5930	B	148.37	39.6	N	P	L/UL
Arsenic	75 - 125	18.5251		7.9896		11.87	88.8		P	
Barium	75 - 125	625.5905		40.0721	B	593.47	98.7		P	
Beryllium	75 - 125	14.8246		1.1622	B	14.84	92.1		P	
Cadmium	75 - 125	12.0363		1.4837	U	14.84	81.1		P	
Chromium	75 - 125	102.1474		44.6993		59.35	96.8		P	
Cobalt	75 - 125	144.2002		7.4424		148.37	92.2		P	
Copper	75 - 125	96.8137		21.4997		74.18	101.5		P	
Lead		31.7734		26.5703		5.93	87.7		P	
Manganese	75 - 125	382.1864		253.2652		148.37	86.9		P	
Mercury	75 - 125	0.5737		0.0989	U	0.49	117.1		CV	
Nickel	75 - 125	154.8559		19.0171		148.37	91.6		P	
Selenium	75 - 125	3.0597		1.1887	B	2.97	63.0	N	P	L/UL
Silver	75 - 125	13.3132		1.4837	U	14.84	89.7		P	
Thallium	75 - 125	12.3280		2.9674	U	14.84	83.1		P	
Vanadium	75 - 125	197.7306		49.0949		148.37	100.2		P	
Zinc	75 - 125	241.6255		110.4735		148.37	88.4		P	

Comments:

SW846 - METALS

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-SD73-0809A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908015

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Antimony		143.42		2.00	B	120.0	117.8		P
Selenium		11.90		4.01	B	10.0	78.9		P

Comments:

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 19, 2009
SDG #s 0908016, 0908017 and SDG006, CompuChem & Empirical
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0908016, 0908017 and SDG006. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles, 8330 for explosives plus PETN & 3, 5-dinitroaniline, 6010B & 7471A for total and dissolved metals and the Standards Methods method SM2540C for total dissolved solids (TDS). Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	VOA	EXP	TMetals	DMetals	TDS
YS06-EB01-080409	0908016-10	water	X		X		
YS06-EB01-080509	0908016-16	water	X		X	X	X
YS06-EB01-080609	0908016-22	water	X		X	X	X
YS06-EB02-080409	0908016-09	water	X		X	X	X
YS06-EB02-080509	0908016-17	water	X		X		
YS06-FB01-080409	0908016-07	water	X		X		
YS06-FB02-080409	0908016-08	water	X		X		X
YS06-SW68-0809	0908016-05	water	X		X	X	
YS06-SW68P-0809	0908016-06	water	X		X	X	
YS06-SW69-0809	0908016-04	water	X		X	X	X
YS06-SW70-0809	0908016-01	water	X		X	X	X
YS06-SW71-0809	0908016-02	water	X		X	X	X
YS06-SW72-0809	0908016-03	water	X		X	X	X
YS06-SW73-0809	0908016-12	water	X		X	X	X
YS06-SW74-0809	0908016-13	water	X		X	X	X
YS06-SW74P-0809	0908016-14	water	X		X	X	
YS06-SW75-0809	0908016-15	water	X		X	X	X
YS06-SW76-0809	0908016-19	water	X		X	X	X
YS06-SW77-0809	0908016-20	water	X		X	X	X
YS06-SW78-0809	0908016-21	water	X		X	X	X
YS06-TB01-080409	0908016-11	water	X				
YS06-TB01-080504	0908016-18	water	X				
YS06-TB01-080609	0908016-23	water	X				
YS06-SW73-0809 MS	0908016-12MS	water	X		X	X	

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Sample ID	Lab ID	Matrix	VOA	EXP	TMetals	DMetals	TDS
YS06-SW73-0809 MSD	0908016-12MSD	water	X		X	X	

The following quality control samples were provided with this SDG: samples YS06-EB01-080409, YS06-EB01-080504, YS06-EB01-080609, YS06-EB02-080409 and YS06-EB02-080504-equipment blanks; samples YS06-FB01-080409 and YS06-FB02-080409-field blanks; samples YS06-TB01-080409, YS06-TB01-080504 and YS06-TB01-080609-trip blanks; sample YS06-SW68P-0809-field duplicate of sample YS06-SW68-0809; and sample YS06-SW74P-0809-field duplicate of sample YS06-SW74-0809.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- GC/MS Tuning *
- HPLC Performance *
- Initial/Continuing Calibrations
- RL Standards
- Interference Check Sample *
- Blanks
- Internal Standards *
- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is

flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The initial and continuing calibrations exhibited low RRF values that required positive values be estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

Explosives by 8330

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the field blank associated with the samples. Qualifications were added to the data.

All P flagged results were qualified as estimated.

Total & Dissolved Metals

The RL standards associated exhibited recoveries that required qualification in the associated samples.

Blank contamination was noted in the blanks associated with the samples in this SDG. Qualifications were added to the data.

The matrix spike analysis associated with total metals analysis exhibited non-compliant recoveries for two analyte. Qualification was required in the associated field samples.

The associated serial dilution sample exhibited a %D greater than 10% for two total metals analytes and one dissolved metals analyte that required qualification as estimated J/UJ in the field samples.

One of the field duplicate pairs analyzed for the dissolved metals exhibited a non-compliant RPD for one analyte that required qualifications as estimated J.

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Total Dissolved Solids

No qualifications were required.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required. Please note that forms in the data package contained the incorrect ID for two samples. YS06-EB01-080509 & YS06-EB02-080509 were referred to as YS06-EB01-080504 & YS06-EB02-080504 throughout the data packages. The correct ID was verified based on the chain of custody. The validator has corrected the Form 1s contained in this validation report but did not request corrections from the laboratory for this error.

Technical Holding Times

According to chain of custody records, sampling was performed on 8/4-6/09 and samples were received at the laboratory 8/5-7/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 8/07/09	acetone	0.045	all samples	L/R	ICL
CC 8/10/09 CC 8/11/09	2-butanone	0.0478 0.0481	YS06-SW68-0809, YS06-SW68P-0809, YS06-FB01-080409, YS06-FB02-080409, YS06-EB02-080409, YS06-EB01-080409, YS06-TB01-080409, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-EB01-080504, YS06-EB02-080504, YS06-TB01-080504, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080609, YS06-TB01-080609	L/R	CCL

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D or %Drift	Samples	Q Flag	Q Code
8/13/09, 0335 & 0736	tetryl*	-19.2, -17.7	YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080509, YS06-EB02-080509, YS06-EB01-080609	J/UJ	CCL
8/13/09, 0335	1,3-dinitrobenzene*	18.9	YS06-EB01-080509, YS06-EB02-080509, YS06-EB01-080609	J	CCH

*Compounds were flagged J due to high column quantitation %Ds with a 2C qualification code in some of these samples

RL Standards

Total & Dissolved Metals

The RL standards associated with samples in this SDG exhibited non-compliant recoveries for three analytes. A summary of these non-compliances and affected samples are noted in the following table.

Standard ID	Analyte(s)	%R	Samples	Q Flag	Q Code
RL Standard 8/28	lead*	45%	YS06-SW73-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW69-0809, YS06-SW68-0809, YS06-SW68P-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW70-0809, YS06-FB01-080409, YS06-FB02-080409, YS06-EB02-080409, YS06-EB01-080409, YS06-EB01-080509, YS06-EB02-080509	L/UL	OT
RL Standard 8/31	selenium	57.8%	YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080609	L/UL	OT

*Please note that in some samples lead was flagged due to blank contamination with a MBL qualifier code.

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKGM	methylene chloride	0.24J ug/L	0.50 ug/L	2.4 ug/L
YS06-TB01-080509	methylene chloride	0.11J ug/L	0.5 ug/L	1.1 ug/L
YS06-FB02-080409	methylene chloride	0.56	0.5	5.6
	2-butanone	1.5J	2.5	15
YS06-EB02-080409	acetone	3.1	2.5	31
	methylene chloride	0.52	0.5	5.2
	2-butanone	1.8J	2.5	18
YS06-EB01-080509	acetone	8.4	2.5	84
	methylene chloride	1.4	0.5	14
	2-butanone	2.4J	2.5	24
	toluene	0.13J	2.5	0.65
YS06-EB01-080609	acetone	14	2.5	140
	methylene chloride	0.8	0.5	8
	2-butanone	8.8	2.5	88
	toluene	0.12J	2.5	0.6

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	acetone	B	BL
YS06-SW74-0809, YS06-SW74P-0809	2-butanone	B	BL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW70-0809, YS06-SW76-0809	toluene	B	BL
YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	methylene chloride	B	BL

Explosives

The associated field blank exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
YS06-FB02-080409	2,4,6-trinitrotoluene	0.25J ug/L	1.25 ug/L	B	FBL
	RDX	0.73P ug/L	3.65 ug/L	B	FBL
	4-nitrotoluene	0.25JP ug/L	1.25 ug/L	B	FBL
	nitrobenzene	0.64P ug/L	1.32 ug/L	B	FBL

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q Code
YS06-SW70-0809, YS06-SW72-0809, YS06-SW69-0809, YS06-SW74-0809	2,4,6-trinitrotoluene	B	FBL
YS06-SW73-0809, YS06-SW74-0809, YS06-SW78-0809, YS06-SW69-0809, YS06-SW72-0809	RDX	B	FBL
YS06-SW71-0809, YS06-SW72-0809, YS06-SW68-0809, YS06-SW73-0809	4-nitrotoluene	B	FBL
YS06-SW71-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW74-0809	nitrobenzene	B	FBL

Total and Dissolved Metals

Blank contamination was noted. Qualification for several analytes was required. Contamination and sample results qualifications are indicated in the following tables.

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	2.351B ug/L	11.755 ug/L	B	MBL
	cadmium	-0.429B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	silver	-0.332B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
ICB/CCB – total metals 8/28 run	nickel	1.9B ug/L	9.5 ug/L	B	MBL
	beryllium	1.5B ug/L	7.5 ug/L	B	MBL
	chromium	0.8B ug/L	4.0 ug/L	B	MBL
ICB/CCB-total metals 8/31 run	chromium	-1.0B ug/L	≤ 10X MDL (6 ug/L)	L/UL	MBL
	beryllium	0.4B ug/L	2.0 ug/L	B	MBL
	antimony	2.0B ug/L	10 ug/L	B	MBL
YS06-FB02-080409	beryllium	0.41B ug/L	2.05 ug/L	B	FBL
YS06-EB02-080409	chromium	0.69B ug/L	3.45 ug/L	B	EBL
	zinc	3.1B ug/L	15.5 ug/L	B	EBL
YS06-EB01-080509	zinc	2.4B ug/L	12 ug/L	B	EBL
YS06-EB01-080609	zinc	2.1B ug/L	10.5 ug/L	B	EBL

Associated samples and required qualifications are noted in the following table.

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS06-SW74P-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	lead	B	MBL
all field samples	cadmium	L/UL	MBL
all field samples	silver	L/UL	MBL
YS06-SW68P-0809, YS06-SW70-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809	nickel	B	MBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	beryllium	B	MBL
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	chromium	B	MBL
YS06-SW77-0809, YS06-SW78-0809	chromium	L/UL	MBL
YS06- SW77-0809, YS06-SW78-0809	beryllium	B	MBL
YS06- SW77-0809	antimony	B	MBL
YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW76-0809	beryllium	B	FBL

Sample ID	analyte	Q Flag	Q Code
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809	chromium	B	EBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW75-0809, YS06-SW78-0809	zinc	B	EBL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	beryllium	0.825B ug/L	4.125 ug/L	B	MBL
	vanadium	0.546B ug/L	2.73 ug/L	B	MBL
ICB/CCB – dissolved metals 8/21 run	chromium	-1.1B ug/L	≤ 10X MDL (6 ug/L)	L/UL	MBL
	nickel	-3.8B ug/L	≤ 10X MDL (11 ug/L)	L/UL	MBL
	silver	-0.4B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	cadmium	0.3B ug/L	1.5 ug/L	B	MBL
ICB/CCB – dissolved metals 8/25 run	lead	-3.1B ug/L	≤ 10X MDL (18 ug/L)	L/UL	MBL
	silver	-0.6B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	aluminum	69.2B ug/L	346 ug/L	B	MBL
YS06-EB01-080509	zinc	7.5B ug/L	37.5 ug/L	B	EBL
YS06-EB01-080609	zinc	1.2B ug/L	6.0 ug/L	B	EBL

Associated samples and required qualifications are noted in the following table.

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW73-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	beryllium	B	MBL
YS06-SW69-0809, YS06-SW70-0809	vanadium	B	MBL
all samples except YS06-SW73-0809	chromium	L/UL	MBL
all samples except YS06-SW73-0809	nickel	L/UL	MBL
all dissolved metals field samples	silver	L/UL	MBL
YS06-SW74-0809	cadmium	B	MBL
YS06-SW73-0809	lead	L/UL	MBL
YS06-SW73-0809	aluminum	B	MBL
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW73-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	zinc	B	EBL

Matrix Spike Recoveries

Total & Dissolved Metals

The matrix spike analysis of sample YS06-SW73-0809 exhibited non-compliant recoveries (<80% or >120%) for two analytes in the total metals analysis. Specific action is noted in the following table.

MS	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS06-SW73-0809	aluminum	all total metals field samples	140.3/134.2	K	MSH
	selenium		130.2/123.6		

Serial Dilutions

Total and Dissolved Metals

The serial dilution analyses exhibited non-compliant %D's in the total and dissolved metals analyses. Specific action is noted in the following table.

SD	Analyte	Samples Affected	%D	Q Flag	Q Code
YS06-SW73-0809	iron	all total metals field samples	17.9	J/UJ	SD
	sodium		41.4		
YS06-SW73-0809	potassium	all dissolved metals field samples	12.8	J/UJ	SD

Field Duplicate

Total and Dissolved Metals

One of the field duplicate pairs submitted in this SDG exhibited a non-compliant RPD for one analyte. Specific action is noted in the following table.

FD Pair	Analytes	RPD	Q Flag	Q Code
YS06-SW68-0809 D, YS06-SW68P-0809 D	manganese	26%	J	FD

Identification/Quantitation

Explosives

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Total and Dissolved Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
all samples	acetone	+/-	L/R	ICL
YS06-SW68-0809, YS06-SW68P-0809, YS06-FB01-080409, YS06-FB02-080409, YS06-EB02-080409, YS06-EB01-080409, YS06-TB01-080409, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-EB01-080504, YS06-EB02-080504, YS06-TB01-080504, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080609, YS06-TB01-080609	2-butanone	+/-	L/R	CCL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	acetone	+	B	BL
YS06-SW74-0809, YS06-SW74P-0809	2-butanone	+	B	BL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW70-0809, YS06-SW76-0809	toluene	+	B	BL
YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	methylene chloride	+	B	BL

Explosives

Sample ID	Compound	Results	Q Flag	Q code
YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080509, YS06-EB02-080509, YS06-EB01-080609	tetryl*	+/-	J/UJ	CCL
YS06-EB01-080509, YS06-EB02-080509, YS06-EB01-080609	1,3-dinitrobenzene*	+	J	CCH
YS06-SW70-0809, YS06-SW72-0809, YS06-SW69-0809, YS06-SW74-0809	2,4,6-trinitrotoluene	+	B	FBL
YS06-SW73-0809, YS06-SW74-0809, YS06-SW78-0809, YS06-SW69-0809, YS06-SW72-0809	RDX	+	B	FBL
YS06-SW71-0809, YS06-SW72-0809, YS06-SW68-0809, YS06-SW73-0809	4-nitrotoluene	+	B	FBL
YS06-SW71-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW74-0809	nitrobenzene	+	B	FBL
all samples	all compounds	+P	J	2C

*tetryl & 1, 3-dinitrobenzene were flagged J due to high column quantitation %Ds with a 2C qualification code in some samples

Summary of Data Qualifications

Total Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-SW73-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW69-0809, YS06-SW68-0809, YS06-SW68P-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-FB01-080409, YS06-FB02-080409, YS06-EB02-080409, YS06-EB01-080409, YS06-EB01-080509, YS06-EB02-080509	lead*	+/-	L/UL	OT
YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080609	selenium	+/-	L/UL	OT
YS06-SW74P-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	lead	+ up to action limit	B	MBL
all field samples	cadmium	+/- up to 10X MDL	L/UL	MBL
all field samples	silver	+/- up to 10X MDL	L/UL	MBL
YS06-SW68P-0809, YS06-SW70-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809	nickel	+ up to action limit	B	MBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	beryllium	+ up to action limit	B	MBL
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	chromium	+ up to action limit	B	MBL
YS06-SW77-0809, YS06-SW78-0809	chromium	+/- up to 10X MDL	L/UL	MBL
YS06- SW77-0809, YS06-SW78-0809	beryllium	+ up to action limit	B	MBL
YS06- SW77-0809	antimony	+ up to action limit	B	MBL
YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW76-0809	beryllium	+ up to action limit	B	FBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809	chromium	+ up to action limit	B	EBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW75-0809, YS06-SW78-0809	zinc	+ up to action limit	B	EBL
all total metals field samples	aluminum selenium	+	K	MSH
all total metals field samples	iron sodium	+/-	J/UJ	SD
all samples	all analytes	+B	J	

*Please note that lead was flagged in some samples due to blank contamination with a MBL qualifier code.

Dissolved Metals

Sample ID	Analyte	Results	Q Flag	Q code
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW73-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	beryllium	+ up to action limit	B	MBL
YS06-SW69-0809, YS06-SW70-0809	vanadium	+ up to action limit	B	MBL
all samples except YS06-SW73-0809	chromium	+/- up to 10X MDL	L/UL	MBL
all samples except YS06-SW73-0809	nickel	+/- up to 10X MDL	L/UL	MBL
all dissolved metals field samples	silver	+/- up to 10X MDL	L/UL	MBL
YS06-SW74-0809	cadmium	+ up to action limit	B	MBL
YS06-SW73-0809	lead	+/- up to 10X MDL	L/UL	MBL
YS06-SW73-0809	aluminum	+ up to action limit	B	MBL

Summary of Data Qualifications

Dissolved Metals, continued

Sample ID	Analyte	Results	Q Flag	Q code
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW73-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	zinc	+ up to action limit	B	EBL
all dissolved metals field samples	potassium	+/-	J/UJ	SD
YS06-SW68-0809, YS06-SW68P-0809	manganese	+	J	FD
all samples	all analytes	+B	J	

TDS

Sample ID	Parameter	Results	Q Flag	Q code
No qualifications were required				

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1069

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.2	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.48	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	1.5	J LCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.21	J
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WW 100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-10

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1069

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-080504

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1669

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	8.4	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	1.4	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.4	J LCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.13	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-080504

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-16

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1669

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-080609

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2269

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	14		LJCL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.80		
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	8.8		LCCL
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.12	J	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

100609

020

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-080609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-22

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2269

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

CM 100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0969

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.1	L ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.52	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	1.8	J L CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.30	J
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-09

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0969

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-080504

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1769

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	7.5	LICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.82	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.4 J	LCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.12	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-080504

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-17

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1769

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
1-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0769

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.1	LJCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.56	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	1.5	JLCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.29	J
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-080409

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-07

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0769

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
2-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0869

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ RICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.56	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	1.5	~~U~~ LCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.33	J
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-FB0
2-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-08

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0869

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW68-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0569

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.1	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.35	J B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.11	J B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW68-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0569

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW68P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0669

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.2	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.32	J B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U RCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.10	J B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WW 100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW68P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-06

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0669

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW69-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0469

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.8	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.28	J B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW69-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0469

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

VM 100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW70-0809

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0169

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	3.6		B,BL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.35	J	B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	2.5	U	
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.12	J	B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW70-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0169

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW71-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0269

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.12	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	6.0	B,B2
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.35	J B,B2
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100607

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW71-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0269

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW72-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0369

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.1	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.23	J B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW72-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-0369

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/07/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW73-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1269

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.11	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	7.6	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.30	J B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	UR CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW73-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-12

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1269

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW74-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1369

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.35	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	10	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.19	J B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	0.91	J B,BL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW74-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-13

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1369

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW74P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1469

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.48	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	12		B,BL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.17	J	B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	1.3	J	B,BL
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.50	U	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

WM 10809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW74P-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-14

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1469

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

10/6/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW75-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1569

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.28	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	11	B,BR
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.16	~~J~~ B,BR
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW75-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-15

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1569

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW76-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1969

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.12	J	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	3.4		B,BL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.18	~~J~~	B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.50	U	
156-59-2	cis-1,2-Dichloroethene	0.50	U	
78-93-3	2-butanone	2.5	~~U~~	RCCL
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	0.50	U	
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.11	~~J~~	B,BL
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW76-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-19

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1969

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

10/06/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW77-0809

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2069

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.12	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	3.1	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.18	~~J~~ B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW77-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-20

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2069

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW78-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2169

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.24	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.4	B,BL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.18	~~J~~ B,BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW78-0809

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-21

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2169

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

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FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-TB0
1-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1169

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R ICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.50	U
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ R CCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

10/6/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-TB0
1-080409

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-11

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1169

Level: (low/med) LOW Date Received: 08/05/09

% Moisture: not dec. _____ Date Analyzed: 08/10/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-080504

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1869

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ RICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.11	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

10609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-TB0
1-080504

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-18

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-1869

Level: (low/med) LOW Date Received: 08/06/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-080609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2369

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ RICL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.17	J
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	~~U~~ RCCL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-TB0
1-080609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 0908016-23

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908016-2369

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

10/06/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-SW7
3-0809MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 9081111-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9081111-MS169

Level: (low/med) LOW Date Received: 08/11/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.3	
74-87-3	Chloromethane	5.2	
75-01-4	Vinyl Chloride	5.1	
74-83-9	Bromomethane	5.1	
75-00-3	Chloroethane	6.3	
75-69-4	Trichlorofluoromethane	5.2	
75-35-4	1,1-Dichloroethene	5.8	
75-15-0	Carbon disulfide	6.0	
76-13-1	1,1,2-trichloro-1,2,2-triflu	3.8	
67-64-1	Acetone	43	
79-20-9	Methyl acetate	3.8	
75-09-2	Methylene Chloride	5.9	
156-60-5	trans-1,2-Dichloroethene	5.8	
1634-04-4	Methyl-tert-butyl ether	6.3	
75-34-3	1,1-Dichloroethane	6.3	
156-59-2	cis-1,2-Dichloroethene	5.5	
78-93-3	2-butanone	32	
67-66-3	Chloroform	5.8	
71-55-6	1,1,1-Trichloroethane	5.1	
56-23-5	Carbon Tetrachloride	4.9	
71-43-2	Benzene	5.5	
107-06-2	1,2-Dichloroethane	5.8	
79-01-6	Trichloroethene	4.9	
78-87-5	1,2-Dichloropropane	5.7	
75-27-4	Bromodichloromethane	5.8	
10061-01-5	cis-1,3-Dichloropropene	6.1	
108-10-1	4-Methyl-2-pentanone	31	
108-88-3	Toluene	5.1	
10061-02-6	trans-1,3-Dichloropropene	6.3	
79-00-5	1,1,2-Trichloroethane	5.7	
127-18-4	Tetrachloroethene	4.5	
591-78-6	2-hexanone	32	
124-48-1	Dibromochloromethane	5.6	

FORM I VOA

10060

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW7
3-0809MS

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 9081111-MS1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9081111-MS169

Level: (low/med) LOW Date Received: 08/11/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	5.8	
108-90-7	Chlorobenzene	5.1	
100-41-4	Ethylbenzene	4.8	
108-38-3	m,p-Xylene	9.5	
95-47-6	o-Xylene	5.0	
100-42-5	Styrene	5.4	
75-25-2	Bromoform	5.4	
98-82-8	Isopropyl Benzene	4.6	
79-34-5	1,1,2,2-Tetrachloroethane	5.6	
541-73-1	1,3-Dichlorobenzene	4.6	
106-46-7	1,4-Dichlorobenzene	4.6	
95-50-1	1,2-Dichlorobenzene	4.7	
96-12-8	1,2-Dibromo-3-Chloropropane	5.1	
120-82-1	1,2,4-Trichlorobenzene	4.2	
540-59-0	1,2-Dichloroethene (total)	11	
1330-20-7	Xylene (total)	15	
110-82-7	Cyclohexane	3.9	
108-87-2	Methylcyclohexane	3.5	

100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-SW7
3-0809MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 9081111-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9081111-MSD169

Level: (low/med) LOW Date Received: 08/11/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	5.5	
74-87-3	Chloromethane	5.4	
75-01-4	Vinyl Chloride	5.2	
74-83-9	Bromomethane	5.6	
75-00-3	Chloroethane	5.5	
75-69-4	Trichlorofluoromethane	5.1	
75-35-4	1,1-Dichloroethene	5.5	
75-15-0	Carbon disulfide	6.1	
76-13-1	1,1,2-trichloro-1,2,2-triflu	5.0	
67-64-1	Acetone	39	
79-20-9	Methyl acetate	3.8	
75-09-2	Methylene Chloride	6.3	
156-60-5	trans-1,2-Dichloroethene	6.2	
1634-04-4	Methyl-tert-butyl ether	6.4	
75-34-3	1,1-Dichloroethane	6.3	
156-59-2	cis-1,2-Dichloroethene	5.7	
78-93-3	2-butanone	32	
67-66-3	Chloroform	6.0	
71-55-6	1,1,1-Trichloroethane	5.5	
56-23-5	Carbon Tetrachloride	5.2	
71-43-2	Benzene	5.8	
107-06-2	1,2-Dichloroethane	5.9	
79-01-6	Trichloroethene	5.3	
78-87-5	1,2-Dichloropropane	6.1	
75-27-4	Bromodichloromethane	6.1	
10061-01-5	cis-1,3-Dichloropropene	6.4	
108-10-1	4-Methyl-2-pentanone	31	
108-88-3	Toluene	5.6	
10061-02-6	trans-1,3-Dichloropropene	6.5	
79-00-5	1,1,2-Trichloroethane	5.7	
127-18-4	Tetrachloroethene	5.0	
591-78-6	2-hexanone	32	
124-48-1	Dibromochloromethane	5.9	

FORM I VOA

10/06/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW7
3-0809MSD

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix: (soil/water) WATER Lab Sample ID: 9081111-MSD1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 9081111-MSD169

Level: (low/med) LOW Date Received: 08/11/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	6.0	
108-90-7	Chlorobenzene	5.7	
100-41-4	Ethylbenzene	5.5	
108-38-3	m,p-Xylene	11	
95-47-6	o-Xylene	5.6	
100-42-5	Styrene	5.2	
75-25-2	Bromoform	5.6	
98-82-8	Isopropyl Benzene	5.4	
79-34-5	1,1,2,2-Tetrachloroethane	5.5	
541-73-1	1,3-Dichlorobenzene	5.3	
106-46-7	1,4-Dichlorobenzene	5.4	
95-50-1	1,2-Dichlorobenzene	5.4	
96-12-8	1,2-Dibromo-3-Chloropropane	5.2	
120-82-1	1,2,4-Trichlorobenzene	5.3	
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	17	
110-82-7	Cyclohexane	4.6	
108-87-2	Methylcyclohexane	4.6	

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW70-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-01

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 008V0801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 09:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 15:12

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37		U
98-95-3	Nitrobenzene	0.081	0.37		U
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37	0.075	~~JP~~ BPBL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37		U
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JAC 10709

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW71-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-02

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 009V0901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 09:55

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 15:47

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37		U
98-95-3	Nitrobenzene	0.081	0.37	0.35	~~JP~~ B FBL
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37	0.100	~~J~~ B FBL
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW72-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-03

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 08/04/09 10:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 16:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37	0.36	J
121-82-4	RDX	0.074	0.37	3.1	BFBL
98-95-3	Nitrobenzene	0.081	0.37		U
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37	0.11	~~J~~ BFBL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37	0.095	~~J~~ BFBL
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JLC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW69-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-04

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 011V1101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 16:55

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.38	0.32	J
121-82-4	RDX	0.075	0.38	3.4	BFBL
98-95-3	Nitrobenzene	0.083	0.38		U
99-65-0	1,3-Dinitrobenzene	0.075	0.38		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.38		U
121-14-2	2,4-Dinitrotoluene	0.098	0.38		U
606-20-2	2,6-Dinitrotoluene	0.098	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.38	0.49	BFBL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.38		U
479-45-8	Tetryl	0.075	0.38		U ~~UJ~~ ~~CC~~
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.38		U
88-72-2	2-Nitrotoluene	0.075	0.38		U
99-99-0	4-Nitrotoluene	0.075	0.38		U
99-08-1	3-Nitrotoluene	0.11	0.38		U
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.075	0.38		U

JAC 10709

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FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW68-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-05

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 012V1201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 11:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 17:30

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.38		U
121-82-4	RDX	0.077	0.38		U
98-95-3	Nitrobenzene	0.085	0.38		U
99-65-0	1,3-Dinitrobenzene	0.077	0.38		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.38		U
121-14-2	2,4-Dinitrotoluene	0.10	0.38		U
606-20-2	2,6-Dinitrotoluene	0.10	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.38		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.38		U
479-45-8	Tetryl	0.077	0.38		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.38		U
88-72-2	2-Nitrotoluene	0.077	0.38		U
99-99-0	4-Nitrotoluene	0.077	0.38	0.096	~~J~~ EBL
99-08-1	3-Nitrotoluene	0.12	0.38		U
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.077	0.38		U

JLC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW68P-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-06

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 013V1301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 11:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 18:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37		U
98-95-3	Nitrobenzene	0.081	0.37		U
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37		U
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JC 10709

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW73-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908056-01

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 006V0601

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 08/05/09 10:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/12/09 21:52

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37	0.48	BFBL
98-95-3	Nitrobenzene	0.081	0.37		U
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		~~U~~UJ CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37	0.28	~~JPM~~ BFB
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JLC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW74-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908056-02

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 011V1101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/05/09 11:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 00:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37	0.33	~~JP~~ BFBL
98-95-3	Nitrobenzene	0.081	0.37	0.17	~~J~~ BFBL
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37	0.10	~~J~~ BFBL
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		~~U~~ UJ CA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37		U
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JAC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW74P-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908056-03

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 012V1201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/05/09 11:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 01:18

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37		U
98-95-3	Nitrobenzene	0.081	0.37	0.16	~~JP~~ BBL
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		~~U~~ UJ CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37		U
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JLC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW75-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908056-04

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 013V1301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/05/09 12:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 01:52

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37		U
98-95-3	Nitrobenzene	0.081	0.37	0.087	~~J~~ BFBL
99-65-0	1,3-Dinitrobenzene	0.074	0.37		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37		U
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37		~~U~~ UJ CCI
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37		U
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JLC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW76-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908064-01

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 018V1801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/06/09 10:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 04:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.38		U
121-82-4	RDX	0.075	0.38		U
98-95-3	Nitrobenzene	0.083	0.38		U
99-65-0	1,3-Dinitrobenzene	0.075	0.38		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.38		U
121-14-2	2,4-Dinitrotoluene	0.098	0.38		U
606-20-2	2,6-Dinitrotoluene	0.098	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.38		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.38		U
479-45-8	Tetryl	0.075	0.38		~~U~~ UJ CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.38		U
88-72-2	2-Nitrotoluene	0.075	0.38		U
99-99-0	4-Nitrotoluene	0.075	0.38		U
99-08-1	3-Nitrotoluene	0.11	0.38		U
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.075	0.38		U

JC 10/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW77-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908064-02

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 019V1901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/06/09 10:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 05:19

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.38		U
121-82-4	RDX	0.075	0.38		U
98-95-3	Nitrobenzene	0.083	0.38		U
99-65-0	1,3-Dinitrobenzene	0.075	0.38		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.38		U
121-14-2	2,4-Dinitrotoluene	0.098	0.38		U
606-20-2	2,6-Dinitrotoluene	0.098	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.38		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.38		U
479-45-8	Tetryl	0.075	0.38		U UJ CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.38		U
88-72-2	2-Nitrotoluene	0.075	0.38		U
99-99-0	4-Nitrotoluene	0.075	0.38		U
99-08-1	3-Nitrotoluene	0.11	0.38		U
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.075	0.38		U

JAC 10/16/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-SW78-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908064-03

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 020V2001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/06/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 05:53

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.38		U
121-82-4	RDX	0.077	0.38	0.45	P BFBL
98-95-3	Nitrobenzene	0.085	0.38		U
99-65-0	1,3-Dinitrobenzene	0.077	0.38		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.38		U
121-14-2	2,4-Dinitrotoluene	0.10	0.38		U
606-20-2	2,6-Dinitrotoluene	0.10	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.38		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.38		U
479-45-8	Tetryl	0.077	0.38		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.38		U
88-72-2	2-Nitrotoluene	0.077	0.38	0.36	~~JPM~~ J 2
99-99-0	4-Nitrotoluene	0.077	0.38		U
99-08-1	3-Nitrotoluene	0.12	0.38		U
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.077	0.38		U

JMC 10709

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-07

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 18:38

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.38		U
121-82-4	RDX	0.077	0.38	0.58	~~P~~ J 2C
98-95-3	Nitrobenzene	0.085	0.38	0.51	~~P~~ J 2C
99-65-0	1,3-Dinitrobenzene	0.077	0.38	0.56	~~PM~~ J 2C
99-35-4	1,3,5-Trinitrobenzene	0.077	0.38	0.42	
121-14-2	2,4-Dinitrotoluene	0.10	0.38	0.34	J
606-20-2	2,6-Dinitrotoluene	0.10	0.38	0.17	J
118-96-7	2,4,6-Trinitrotoluene	0.077	0.38	0.23	J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.38		U
479-45-8	Tetryl	0.077	0.38		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.38		U
88-72-2	2-Nitrotoluene	0.077	0.38	0.26	~~JP~~ J 2C
99-99-0	4-Nitrotoluene	0.077	0.38	0.30	~~JP~~ J 2C
99-08-1	3-Nitrotoluene	0.12	0.38		U
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.077	0.38		U

JC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
2-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-08

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 19:13

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.39		U
121-82-4	RDX	0.078	0.39	0.73	~~P~~ J
98-95-3	Nitrobenzene	0.086	0.39	0.64	~~P~~ J
99-65-0	1,3-Dinitrobenzene	0.078	0.39	1.0	~~PM~~ J
99-35-4	1,3,5-Trinitrobenzene	0.078	0.39	0.48	
121-14-2	2,4-Dinitrotoluene	0.10	0.39	0.13	~~JPM~~ J
606-20-2	2,6-Dinitrotoluene	0.10	0.39	0.23	J
118-96-7	2,4,6-Trinitrotoluene	0.078	0.39	0.25	~~JP~~ J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.39	0.21	~~JP~~ J
479-45-8	Tetryl	0.078	0.39	0.24	J
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.39		U
88-72-2	2-Nitrotoluene	0.078	0.39		U
99-99-0	4-Nitrotoluene	0.078	0.39	0.25	~~JP~~ J
99-08-1	3-Nitrotoluene	0.12	0.39		U
78-11-5	PETN	1.2	2.0		U
618-87-1	3,5-Dinitroaniline	0.078	0.39	0.11	~~JP~~ J

JAC 10/7/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-09

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 016V1601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 14:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 19:47

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	0.40		U
121-82-4	RDX	0.080	0.40	0.50	~~P~~ J 2C
98-95-3	Nitrobenzene	0.088	0.40	0.47	~~P~~ J 2C
99-65-0	1,3-Dinitrobenzene	0.080	0.40	0.46	~~PM~~ J 2C
99-35-4	1,3,5-Trinitrobenzene	0.080	0.40	0.44	
121-14-2	2,4-Dinitrotoluene	0.10	0.40	0.11	~~JPM~~ J 2
606-20-2	2,6-Dinitrotoluene	0.10	0.40	0.21	~~JP~~ ↓ 1
118-96-7	2,4,6-Trinitrotoluene	0.080	0.40	0.20	~~JP~~ ↓
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.40	0.15	~~JP~~ ↓ 1
479-45-8	Tetryl	0.080	0.40	0.14	J
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	0.40		U
88-72-2	2-Nitrotoluene	0.080	0.40		U
99-99-0	4-Nitrotoluene	0.080	0.40	0.39	~~JP~~ J 2C
99-08-1	3-Nitrotoluene	0.12	0.40	0.15	~~JP~~ J 2C
78-11-5	PETN	1.3	2.0		U
618-87-1	3,5-Dinitroaniline	0.080	0.40		U

JMC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908035-10

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 017V1701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/04/09 14:50

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/07/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/11/09 20:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.38		U
121-82-4	RDX	0.077	0.38	0.72	~~P~~ J
98-95-3	Nitrobenzene	0.085	0.38	0.18	~~JP~~
99-65-0	1,3-Dinitrobenzene	0.077	0.38	0.36	~~JPM~~
99-35-4	1,3,5-Trinitrobenzene	0.077	0.38	0.37	~~JP~~
121-14-2	2,4-Dinitrotoluene	0.10	0.38	0.22	~~JP~~
606-20-2	2,6-Dinitrotoluene	0.10	0.38	0.11	J
118-96-7	2,4,6-Trinitrotoluene	0.077	0.38	0.17	~~JP~~ J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.38	0.12	J
479-45-8	Tetryl	0.077	0.38	0.12	J
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.38		U
88-72-2	2-Nitrotoluene	0.077	0.38		U
99-99-0	4-Nitrotoluene	0.077	0.38	0.25	~~JP~~ J
99-08-1	3-Nitrotoluene	0.12	0.38	0.40	~~P~~ J
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.077	0.38	0.27	~~JP~~ J

10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-080509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908056-05

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 08/05/09 16:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 02:27

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.076	0.38		U
121-82-4	RDX	0.076	0.38	0.57	~~P~~ J
98-95-3	Nitrobenzene	0.084	0.38	0.28	~~JP~~
99-65-0	1,3-Dinitrobenzene	0.076	0.38	0.29	~~JPM~~
99-35-4	1,3,5-Trinitrobenzene	0.076	0.38	0.26	~~JP~~
121-14-2	2,4-Dinitrotoluene	0.099	0.38	0.14	J
606-20-2	2,6-Dinitrotoluene	0.099	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.076	0.38		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.38		U
479-45-8	Tetryl	0.076	0.38		~~U~~ UJ
19406-51-0	4-Amino-2,6-dinitrotoluene	0.076	0.38		U
88-72-2	2-Nitrotoluene	0.076	0.38	0.34	~~JPM~~ J
99-99-0	4-Nitrotoluene	0.076	0.38	0.14	~~JP~~
99-08-1	3-Nitrotoluene	0.11	0.38	0.36	~~JP~~
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.076	0.38	0.17	~~JP~~ J

JMC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-080509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908056-06

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N) __ Date Sampled: 08/05/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 03:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.37		U
121-82-4	RDX	0.074	0.37	0.54	~~P~~ J
98-95-3	Nitrobenzene	0.081	0.37	0.25	~~JP~~
99-65-0	1,3-Dinitrobenzene	0.074	0.37	0.15	~~JPM~~
99-35-4	1,3,5-Trinitrobenzene	0.074	0.37		U
121-14-2	2,4-Dinitrotoluene	0.096	0.37	0.16	~~JP~~ J
606-20-2	2,6-Dinitrotoluene	0.096	0.37		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.37	0.12	~~JP~~ J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.37		U
479-45-8	Tetryl	0.074	0.37	0.21	~~JP~~ J
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.37		U
88-72-2	2-Nitrotoluene	0.074	0.37		U
99-99-0	4-Nitrotoluene	0.074	0.37		U
99-08-1	3-Nitrotoluene	0.11	0.37		U
78-11-5	PETN	1.2	1.8		U
618-87-1	3,5-Dinitroaniline	0.074	0.37		U

JAC 10/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-080609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix: (soil/water) WATER Lab Sample ID: 0908064-04

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 021V2101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/06/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 06:27

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.39		U
121-82-4	RDX	0.078	0.39	0.66	~~P~~ ~~J~~ 2C
98-95-3	Nitrobenzene	0.086	0.39	0.78	
99-65-0	1,3-Dinitrobenzene	0.078	0.39	0.23	~~JPM~~ ~~J~~ 2C
99-35-4	1,3,5-Trinitrobenzene	0.078	0.39	0.20	~~JP~~ ~~J~~ 2C
121-14-2	2,4-Dinitrotoluene	0.10	0.39		U
606-20-2	2,6-Dinitrotoluene	0.10	0.39		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.39		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.39		U
479-45-8	Tetryl	0.078	0.39	0.16	~~J~~ J CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.39		U
88-72-2	2-Nitrotoluene	0.078	0.39	1.5	~~P~~ ~~J~~ 2C
99-99-0	4-Nitrotoluene	0.078	0.39	0.17	~~JP~~ ↓ ↓
99-08-1	3-Nitrotoluene	0.12	0.39	0.34	~~JP~~ ↓
78-11-5	PETN	1.2	2.0		~~U~~
618-87-1	3,5-Dinitroaniline	0.078	0.39		U

JMC 10/09

FORM I EXPL

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW68-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-05

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	699		~~H~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.9	~~B~~	J	P	
7440-39-3	Barium	28.3	~~B~~	J	P	
7440-41-7	Beryllium	0.86	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	216000			P	
7440-47-3	Chromium	1.1	~~B~~	B	P	EBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	1.3	~~B~~	J	P	
7439-89-6	Iron	972		~~E~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	GT
7439-95-4	Magnesium	646000			P	
7439-96-5	Manganese	116			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	332000			P	
7782-49-2	Selenium	5.0	U	~~W~~	P	
7440-22-4	Silver	0.68	~~B~~	L	P	MBL
7440-23-5	Sodium	4970000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	5.0	~~B~~	J	P	
7440-66-6	Zinc	6.8	~~B~~	B	P	EBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW68P-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-06

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	732		~~W~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.4	~~B~~	J	P	
7440-39-3	Barium	28.5	~~B~~	J	P	
7440-41-7	Beryllium	0.97	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	1.5	~~B~~	B	P	EBL
7440-48-4	Cobalt	0.77	~~B~~	J	P	
7440-50-8	Copper	1.4	~~B~~	J	P	
7439-89-6	Iron	1050		~~E~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	644000			P	
7439-96-5	Manganese	116			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	1.3	~~B~~	B	P	MBL
7440-09-7	Potassium	330000			P	
7782-49-2	Selenium	5.0	U	~~W~~	P	
7440-22-4	Silver	1.0	~~B~~	L	P	MBL
7440-23-5	Sodium	5100000		~~EB~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	5.6	~~B~~	J	P	
7440-66-6	Zinc	7.6	~~B~~	B	P	EBL

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW69-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-04

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	492		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.9	~~B~~	J	P	
7440-39-3	Barium	26.8	~~B~~	J	P	
7440-41-7	Beryllium	0.64	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	218000			P	
7440-47-3	Chromium	0.94	~~B~~	B	P	EBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	1.1	~~B~~	J	P	
7439-89-6	Iron	768		~~E~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	656000			P	
7439-96-5	Manganese	84.8			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	335000			P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	0.68	~~B~~	L	P	MBL
7440-23-5	Sodium	5110000		~~EB~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.8	~~B~~	J	P	
7440-66-6	Zinc	5.2	~~B~~	B	P	EBL

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS06-SW70-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-01

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	472		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	26.7	~~B~~	J	P	
7440-41-7	Beryllium	0.51	~~B~~	B	P	FBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	224000			P	
7440-47-3	Chromium	1.2	~~B~~	B	P	EBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	2.0	~~B~~	J	P	
7439-89-6	Iron	753		~~E~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	678000			P	
7439-96-5	Manganese	59.1			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	1.6	~~B~~	B	P	MBL
7440-09-7	Potassium	348000			P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	1.1	~~B~~	L	P	MBL
7440-23-5	Sodium	5260000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.2	~~B~~	J	P	
7440-66-6	Zinc	9.6	~~B~~	B	P	EBL

10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.: YS06-SW71-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-02

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	655		~~W~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	28.2	~~B~~	J	P	
7440-41-7	Beryllium	0.47	~~B~~	B	P	FBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	1.1	~~B~~	B	P	EBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	1.4	~~B~~	J	P	
7439-89-6	Iron	1130		~~E~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	640000			P	
7439-96-5	Manganese	155			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	322000			P	
7782-49-2	Selenium	4.1	~~B~~	~~W~~ K	P	MSH
7440-22-4	Silver	0.92	~~B~~	L	P	MBL
7440-23-5	Sodium	4990000		~~EB~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.6	~~B~~	J	P	
7440-66-6	Zinc	6.5	~~B~~	B	P	EBL

JMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW72-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-03

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	436		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	27.6	~~B~~	J	P	
7440-41-7	Beryllium	0.53	~~B~~	B	P	FBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	214000			P	
7440-47-3	Chromium	0.91	~~B~~	B	P	EBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	1.5	~~B~~	J	P	
7439-89-6	Iron	724		~~B~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	641000			P	
7439-96-5	Manganese	127			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	329000			P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	0.98	~~B~~	L	P	MBL
7440-23-5	Sodium	5100000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.2	~~B~~	J	P	
7440-66-6	Zinc	6.6	~~B~~	B	P	EBL

JLC 10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW73-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-12

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1280		~~K~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	5.0	~~B~~	J	P	
7440-39-3	Barium	30.0	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	218000			P	
7440-47-3	Chromium	2.8	~~B~~	J	P	
7440-48-4	Cobalt	0.96	~~B~~	J	P	
7440-50-8	Copper	2.1	~~B~~	J	P	
7439-89-6	Iron	1680		~~B~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	GT
7439-95-4	Magnesium	647000			P	
7439-96-5	Manganese	138			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	2.0	~~B~~	B	P	MBL
7440-09-7	Potassium	327000			P	
7782-49-2	Selenium	5.0	U	~~U~~	P	
7440-22-4	Silver	1.1	~~B~~	L	P	MBL
7440-23-5	Sodium	5130000		~~B~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	6.6	~~B~~	J	P	
7440-66-6	Zinc	22.3			P	

JAC 10/05

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW74-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-13

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1380		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.9	~~B~~	J	P	
7440-39-3	Barium	29.8	~~B~~	J	P	
7440-41-7	Beryllium	1.7	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	206000			P	
7440-47-3	Chromium	2.5	~~B~~	B	P	MBL
7440-48-4	Cobalt	0.86	~~B~~	J	P	
7440-50-8	Copper	2.0	~~B~~	J	P	
7439-89-6	Iron	2200		~~E~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	621000			P	
7439-96-5	Manganese	148			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	2.1	~~B~~	B	P	MBL
7440-09-7	Potassium	323000			P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	0.38	~~B~~	L	P	MBL
7440-23-5	Sodium	4880000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	7.6	~~B~~	J	P	
7440-66-6	Zinc	14.9	~~B~~	J	P	

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW74P-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-14

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	1240		~~W~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.9	~~B~~	J	P	
7440-39-3	Barium	29.2	~~B~~	J	P	
7440-41-7	Beryllium	1.9	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	203000			P	
7440-47-3	Chromium	2.2	~~B~~	B	P	MBL
7440-48-4	Cobalt	0.63	~~B~~	J	P	
7440-50-8	Copper	1.3	~~B~~	J	P	
7439-89-6	Iron	1870		~~E~~ J	P	SD
7439-92-1	Lead	2.2	~~B~~	B	P	MBL
7439-95-4	Magnesium	617000			P	
7439-96-5	Manganese	150			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	1.6	~~B~~	B	P	MBL
7440-09-7	Potassium	321000			P	
7782-49-2	Selenium	5.0	U	~~W~~	P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4730000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	7.0	~~B~~	J	P	
7440-66-6	Zinc	13.1	~~B~~	J	P	

JAC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW75-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-15

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	823		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.9	~~B~~	J	P	
7440-39-3	Barium	28.1	~~B~~	J	P	
7440-41-7	Beryllium	1.6	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	199000			P	
7440-47-3	Chromium	1.7	~~B~~	B	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	1.0	~~B~~	J	P	
7439-89-6	Iron	982		~~B~~ J	P	SD
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	604000			P	
7439-96-5	Manganese	139			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	311000			P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	0.47	~~B~~	L	P	MBL
7440-23-5	Sodium	4610000		~~B~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	5.4	~~B~~	J	P	
7440-66-6	Zinc	10.5	~~B~~	B	P	EBL

JC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW76-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-19

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	2280		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.9	~~B~~	J	P	
7440-39-3	Barium	30.4	~~B~~	J	P	
7440-41-7	Beryllium	1.7	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	195000			P	
7440-47-3	Chromium	3.8	~~B~~	J	P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	2.0	~~B~~	J	P	
7439-89-6	Iron	3020		~~E~~ J	P	SD
7439-92-1	Lead	3.5		B	P	MBL
7439-95-4	Magnesium	595000			P	
7439-96-5	Manganese	198			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	1.9	~~B~~	J	P	
7440-09-7	Potassium	303000			P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4500000		~~EB~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	8.3	~~B~~	J	P	
7440-66-6	Zinc	19.5	~~B~~	J	P	

JC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW77-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-20

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	806		~~H~~ K	P	MSH
7440-36-0	Antimony	2.5	~~B~~	B	P	MBL
7440-38-2	Arsenic	3.0	~~B~~	J	P	
7440-39-3	Barium	28.6	~~B~~	J	P	
7440-41-7	Beryllium	0.44	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	202000			P	
7440-47-3	Chromium	0.92	~~B~~	L	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	1.2	~~B~~	J	P	
7439-89-6	Iron	1410		~~H~~ J	P	SD
7439-92-1	Lead	4.2		B	P	MBL
7439-95-4	Magnesium	586000			P	
7439-96-5	Manganese	193			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	293000			P	
7782-49-2	Selenium	5.0	~~U~~	~~H~~ UL	P	OT
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4370000		~~ED~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	6.2	~~B~~	J	P	
7440-66-6	Zinc	10.9	~~B~~	J	P	

SMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW78-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-21

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	575		~~N~~ K	P	MSH
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	28.4	~~B~~	J	P	
7440-41-7	Beryllium	0.46	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	~~U~~	UL	P	MBL
7440-70-2	Calcium	190000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	787		~~E~~ J	P	SD
7439-92-1	Lead	2.2	~~B~~	B	P	MBL
7439-95-4	Magnesium	542000			P	
7439-96-5	Manganese	199			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	272000			P	
7782-49-2	Selenium	5.0	~~U~~	~~N~~ UL	P	OT
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	4130000		~~E~~ J	P	SD
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	6.4	~~B~~	J	P	
7440-66-6	Zinc	10.0	~~B~~	B	P	EBL

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-080409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-10

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U	~~N~~	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	2.8	~~B~~	J	P	
7440-41-7	Beryllium	1.1	~~B~~	J	P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	5000	U		P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	100	U	~~E~~	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	OT
7439-95-4	Magnesium	5000	U		P	
7439-96-5	Manganese	10.0	U		P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	5000	U		P	
7782-49-2	Selenium	5.0	U	~~N~~	P	
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	158	~~B~~	~~E~~ J	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	20.0	U		P	
7440-66-6	Zinc	1.9	~~B~~	J	P	

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-080504

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-16

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U	~~N~~	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	1.0	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U	~~B~~	P
7439-92-1	Lead	2.1	~~B~~	L	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U	~~N~~	P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	217	~~B~~	~~E~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	2.4	~~B~~	J	P

OT

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-080609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-22

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U	~~N~~	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	10.0	U		P	
7440-39-3	Barium	200	U		P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	5000	U		P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	100	U	~~E~~	P	
7439-92-1	Lead	2.9	~~B~~	L	P	OT
7439-95-4	Magnesium	5000	U		P	
7439-96-5	Manganese	10.0	U		P	
7439-97-6	Mercury	0.12	~~B~~	J	CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	5000	U		P	
7782-49-2	Selenium	5.0	~~U~~	~~N~~ UL	P	OT
7440-22-4	Silver	5.0	U		P	
7440-23-5	Sodium	486	~~B~~	~~E~~ J	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	20.0	U		P	
7440-66-6	Zinc	2.1	~~B~~	J	P	

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-080409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-09

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U	~~N~~	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.55	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	0.69	~~B~~	J	P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U	~~E~~	P
7439-92-1	Lead	3.0	~~U~~	UL	P OT
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U	~~N~~	P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	261	~~B~~	~~E~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	3.1	~~B~~	J	P

JC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-080509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Xlcam JMC 10909

Matrix (soil/water): WATER Lab Sample ID: 0908016-17

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U	~~N~~	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	1.0	~~B~~	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	0.64	~~B~~	J	P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U	~~B~~	P
7439-92-1	Lead	2.2	~~B~~	L	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U	~~N~~	P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	219	~~B~~	~~E~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	1.2	~~B~~	J	P

DT

JMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-FB01-080409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-07

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U	~~N~~	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U	~~E~~	P
7439-92-1	Lead	3.0	~~U~~	UL	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U	~~N~~	P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	353	~~B~~	~~E~~ J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	2.2	~~B~~	J	P

OT

JMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-FB02-080409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Lab Sample ID: 0908016-08

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U	N	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.41	B	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U	E	P
7439-92-1	Lead	1.9	B	L	P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U	N	P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	239	B	E J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	20.0	U		P

OT

10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW68-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-05

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	49.7	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	5.9	~~B~~	J	P	
7440-39-3	Barium	25.8	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	216000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	87.5	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	663000			P	
7439-96-5	Manganese	61.3		J	P	FD
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	323000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.55	~~B~~	BL	P	MBL
7440-23-5	Sodium	5280000		~~E~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.2	~~B~~	J	P	
7440-66-6	Zinc	1.5	~~B~~	J	P	

Xlcorr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW68P-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-06

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.9	~~B~~	J	P	
7440-39-3	Barium	25.5	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	55.9	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	662000			P	
7439-96-5	Manganese	47.2		J	P	FD
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	326000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5380000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.5	~~B~~	J	P	
7440-66-6	Zinc	2.1	~~B~~	J	P	

JMC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW69-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-04

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	2.8	~~B~~	J	P	
7440-39-3	Barium	24.1	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	37.0	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	668000			P	
7439-96-5	Manganese	5.7	~~B~~	J	P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	332000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5450000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.2	~~B~~	B	P	MBL
7440-66-6	Zinc	3.4	~~B~~	J	P	

JAC 10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW70-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-01

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.7	~~B~~	J	P	
7440-39-3	Barium	24.0	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	222000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	60.8	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	684000			P	
7439-96-5	Manganese	6.7	~~B~~	J	P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	333000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.83	~~B~~	~~B~~ L	P	MBL
7440-23-5	Sodium	5360000		~~U~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	2.2	~~B~~	B	P	MBL
7440-66-6	Zinc	1.5	~~B~~	J	P	

XLCorr JAC 101209

JAC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW71-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-02

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	5.7	~~B~~	J	P	
7440-39-3	Barium	25.3	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	209000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	0.68	~~B~~	J	P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	69.1	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	641000			P	
7439-96-5	Manganese	57.7			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	318000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.97	~~B~~	BL	P	MBL
7440-23-5	Sodium	5110000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.8	~~B~~	J	P	
7440-66-6	Zinc	1.2	~~B~~	J	P	

Xlcorr JAC 101209

JAC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-SW72-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-03

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.6	~~B~~	J	P	
7440-39-3	Barium	24.8	~~B~~	J	P	
7440-41-7	Beryllium	5.0	U		P	
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	215000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	54.6	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	658000			P	
7439-96-5	Manganese	24.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	322000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.69	~~B~~	~~B~~ L	P	MBL
7440-23-5	Sodium	5170000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.0	~~B~~	J	P	
7440-66-6	Zinc	20.0	U		P	

Xu corr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW73-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-08

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	66.6	~~B~~	B	P	MBL
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	6.9	~~B~~	J	P	
7440-39-3	Barium	25.8	~~B~~	J	P	
7440-41-7	Beryllium	0.92	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	220000			P	
7440-47-3	Chromium	10.0	U		P	
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	63.0	~~B~~	J	P	
7439-92-1	Lead	3.0	~~U~~	UL	P	MBL
7439-95-4	Magnesium	653000			P	
7439-96-5	Manganese	45.4			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	U		P	
7440-09-7	Potassium	318000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	5.0	~~U~~	UL	P	MBL
7440-23-5	Sodium	5270000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.8	~~B~~	J	P	
7440-66-6	Zinc	5.1	~~B~~	B	P	EBL

JC 10/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW74-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-09

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	34.2	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.7	~~B~~	J	P	
7440-39-3	Barium	26.4	~~B~~	J	P	
7440-41-7	Beryllium	0.41	~~B~~	B	P	MBL
7440-43-9	Cadmium	0.27	~~B~~	B	P	MBL
7440-70-2	Calcium	216000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	76.8	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	658000			P	
7439-96-5	Manganese	89.6			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	320000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	1.1	~~B~~	B L	P	MBL
7440-23-5	Sodium	5210000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.7	~~B~~	J	P	
7440-66-6	Zinc	2.5	~~B~~	B	P	EBL

X1 corr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW74P-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-10

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	57.4	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	5.8	~~B~~	J	P	
7440-39-3	Barium	26.7	~~B~~	J	P	
7440-41-7	Beryllium	0.45	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	217000			P	
7440-47-3	Chromium	10.0	~~B~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	86.7	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	661000			P	
7439-96-5	Manganese	95.5			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	325000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.98	~~B~~	B L	P	MBL
7440-23-5	Sodium	5540000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.8	~~B~~	J	P	
7440-66-6	Zinc	4.3	~~B~~	B	P	EBL

X4 corr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW75-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-11

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	38.6	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.8	~~B~~	J	P	
7440-39-3	Barium	26.0	~~B~~	J	P	
7440-41-7	Beryllium	0.45	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	214000			P	
7440-47-3	Chromium	10.0	~~B~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	66.1	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	661000			P	
7439-96-5	Manganese	73.2			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~B~~	UL	P	MBL
7440-09-7	Potassium	327000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.52	~~B~~	BL	P	MBL
7440-23-5	Sodium	5280000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.8	~~B~~	J	P	
7440-66-6	Zinc	6.9	~~B~~	B	P	EBL

Xu corr JAC 101259

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS
-1-

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW76-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-13

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	200	U		P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	3.4	~~B~~	J	P	
7440-39-3	Barium	26.6	~~B~~	J	P	
7440-41-7	Beryllium	0.48	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	207000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	56.2	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	632000			P	
7439-96-5	Manganese	122			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	316000		~~E~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.63	~~B~~	BL	P	MBL
7440-23-5	Sodium	5020000		~~D~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	3.8	~~B~~	J	P	
7440-66-6	Zinc	2.5	~~B~~	B	P	EBL

Xicorr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW77-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-14

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	72.7	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	5.5	~~B~~	J	P	
7440-39-3	Barium	26.2	~~B~~	J	P	
7440-41-7	Beryllium	0.48	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	198000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	99.0	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	592000			P	
7439-96-5	Manganese	135			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	295000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.97	~~B~~	BL	P	MBL
7440-23-5	Sodium	4750000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.4	~~B~~	J	P	
7440-66-6	Zinc	5.2	~~B~~	B	P	EBL

XICorr JAC 101209

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-SW78-0809

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-15

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M	
7429-90-5	Aluminum	96.0	~~B~~	J	P	
7440-36-0	Antimony	10.0	U		P	
7440-38-2	Arsenic	4.5	~~B~~	J	P	
7440-39-3	Barium	26.2	~~B~~	J	P	
7440-41-7	Beryllium	0.62	~~B~~	B	P	MBL
7440-43-9	Cadmium	5.0	U		P	
7440-70-2	Calcium	188000			P	
7440-47-3	Chromium	10.0	~~U~~	UL	P	MBL
7440-48-4	Cobalt	5.0	U		P	
7440-50-8	Copper	5.0	U		P	
7439-89-6	Iron	93.4	~~B~~	J	P	
7439-92-1	Lead	3.0	U		P	
7439-95-4	Magnesium	555000			P	
7439-96-5	Manganese	175			P	
7439-97-6	Mercury	0.20	U		CV	
7440-02-0	Nickel	40.0	~~U~~	UL	P	MBL
7440-09-7	Potassium	277000		~~B~~ J	P	SD
7782-49-2	Selenium	5.0	U		P	
7440-22-4	Silver	0.64	~~B~~	B L	P	MBL
7440-23-5	Sodium	4570000		~~B~~	P	
7440-28-0	Thallium	10.0	U		P	
7440-62-2	Vanadium	4.9	~~B~~	J	P	
7440-66-6	Zinc	3.0	~~B~~	B	P	EBL

X1 corr JAC 101209

JAC 10/9/09

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB01-080509

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-12

Level (low/med): LOW Date Received: 8/6/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	90.2	~~B~~	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	54.6	~~B~~	J	P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	20.2	~~B~~	J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	344	~~B~~	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	7.5	~~B~~	J	P

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB01-080609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-16

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	0.35	B	J	P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	44.0	B	J	P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U	E	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	171	B	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	1.2	B	J	P

SLC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.
YS06-EB02-080409

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Lab Sample ID: 0908017-07

Level (low/med): LOW Date Received: 8/5/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	200	U		P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	63.0	B	J	P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	52.0	B	J	P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	29.9	B	J	P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	525	B	J	P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	20.0	U		P

10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments: DISSOLVED

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW70-0809
0908016-01 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	24200	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JMC 10809

CompuChem
A Division Of
Liberty Analytical Corp

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW71-0809
0908016-02 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	22300	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JLC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW72-0809
0908016-03 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	22200	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JJC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW69-0809
0908016-04 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	23100	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-FB02-080409

0908016-08 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	
COMPUCHEM									
WET CHEMISTRY PARAMETERS									
Total Dissolved Solids	ND	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C	U

JMC 10809

CompuChem

A Division Of

Liberty Analytical Corp

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-EB02-080409

0908016-09 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	ND	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C U

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW73-0809

0908016-12 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	**22400**	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JJC 10809

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Joe Mohn For Cathy Dover, Project Manager

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW74-0809
0908016-13 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	**22200**	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW75-0809

0908016-15 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	20600	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-EB01-080504
0908016-16 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	
COMPUCHEM									
WET CHEMISTRY PARAMETERS									
Total Dissolved Solids	9	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C	J

DC 10809

CompuChem
A Division Of
Liberty Analytical Corp

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW76-0809
0908016-19 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	19800	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JJC 10809

CompuChem

A Division Of

Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW77-0809

0908016-20 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	19200	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JMC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	Reported:
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-SW78-0809

0908016-21 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
COMPUCHEM								
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	17700	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JAC 10809

CompuChem
A Division Of
Liberty Analytical Corp.

CH2M HILL, INC.	Project: CTO-166 NWSY/358315.FI.FS/N62470-02-D-3052	
5700 CLEVELAND STREET, SUITE 101	Project Number: CTO-166 NWSY/358315.FI.FS/N62470-02-D-30	**Reported:**
VIRGINIA BEACH VA, 23462	Project Manager: REBEKHA SHAW	08/13/2009 16:32

YS06-EB01-080609

0908016-22 (Water)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
			COMPUCHEM					
WET CHEMISTRY PARAMETERS								
Total Dissolved Solids	11	10	mg/L	1	9081113	08/11/2009 11:30	08/11/2009 16:26	SM 2540C

JAC 10809

CTO-1616

15611

Page 1 of 2

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CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M Hill	Project Name: CTO-1616
Address: 5700 Cleveland St Suite 101	Sampling Location: ~~Ft~~ Yorktown NWS Site 6
City: Va Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Rebekah Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3	Metals ILM05.3	FMetals ILM05.3	Exp/PETN/3,5-DNA 8330	TDS 160.1	Metals, pH, TOC, Alkal	AVS/SEM 7 metals	Gran SIZE D422	EXPL/PETN/3,5-DNA SUB AVS/SEM	pH / Sample Info (Lab Use)	Metals	Explosives
0908016-01	0908017-01 SO6-SW70-0809	8/4/09	0930	SW	8	3		2				3	1	1	2	1				0908036-01		<2	<2
0908015-01	0908033-01 SO6-SD70-0809		0940	SO	8							3			1		1	1	2	0908035-01		—	—
0908016-02	0908017-02 SO6-SW71-0809		0955	SW	8	3		2				3	1	1	2	1				0908036-02		<2	<2
0908015-02	0908033-02 SO6-SD71-0809		1000	SO	8							3			1		1	1	2	0908034-02		—	—
0908016-03	0908017-03 SO6-SW72-0809		1020	SW	8	3		2				3	1	1	2	1				0908036-03		<2	<2
0908015-03	0908033-03 SO6-SD72-0809		1025	SO	8							3			1		1	1	2	0908034-03		—	—
0908016-04	0908017-04 SO6-SW69-0809		1040	SW	8	3		2				3	1	1	2	1				0908036-04		<2	<2
0908015-04	0908033-04 SO6-SD69-0809		1045	SO	8							3			1		1	1	2	0908034-04		—	—
0908016-05	0908017-05 SO6-SW68-0809		1100	SW	8	3		2				3	1	1	2	1				0908036-05		<2	<2
0908016-06	0908017-06 SO6-SW68P-0809	↓	1105	SW	7	3		2				3	1	1	1					0908036-06		—	

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by:	Date/Time: 8/4/09 1900	Received by:	Date/Time: 8/5/09 1125
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or N If yes, where? EXPL+PETN+3,5-DNA TO EMPIRICA AVS/SEM to CTS GRAIN SIZE TO CT LABS	Custody Seal(s) intact? Y or N	On Ice? Y or N	Cooler Temp: 4.9, 5.7 °C

Samples st 0 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

1.1, 2.4
4.9°C

15612

CTO-166

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.
501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Page 2 of 2

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166
Address: 5700 Cleveland St. Ste. 101	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: PER CONTRACT
Project Contact: Rebeltha Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OL Mod 3	Metals ILM05.3	F Metals ILM05.3	Expl/PETN/1,3,5-TNB 8330	TDS 160.1	Metals, pH, TOC, Alkalinity	AVS/SEM 7 metals	Grain Size D422	Expl/AVS/SEM	pH / Sample Info (Lab Use): metals	filtered metals
0908015-05 0908034-05	YS06-SD68-0809	8/4/09	1110	SO	8							3			1		1	1	2	0908034-05 0908015-05		
0908015-06	YS06-SD68P-0809		1120	SO	6							3	1		1			1		0908034-06 0908015-06 Expl SVD		
0908016-07	YS06-FB01-080409		1400	AQ	6	3		1				3	1		2					0908016-07	2	1
0908016-08	YS06-FB02-080409		1405	AQ	7	3		1				3	1		2	1				0908016-08	2	1
0908016-09 0908017-01	YS06-EB02-080409		1445	AQ	8	3		2				3	1	1	2	1				0908016-09	2	1
0908016-10	YS06-EB01-080409		1450	AQ	6	3		1				3	1		2					0908016-10	2	1
0908016-11	YS06-TB01-080409	↓	1500	TB	3	3						3										1

Lab Use Only

Sample Unpacked By: R. Murphy
Sample Order Entry By: [illegible]
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments: FB01 = SD FB02 = SW EB02 = SW EB01 = SD

Sample Custody

Relinquished by: [signature]	Date/Time: 8/4/09 1900	Received by: R. Murphy	Date/Time: 8/5/09 1125
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 4.9, 5.7 = 5.4, 0.7 °C

Samples sv 9 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

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Page 1 of 2

CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Co

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

292 138

Company Name: CH2M Hill	Project Name: CTO-166
Address: 5700 Cleveland St	Sampling Location: Yorktown NWS Site 6
City: VA Beach State: VA Zip: 23462	Turnaround time: Per Contract
Project Contact: Rebekha Shaw	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: 757-671-8311	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: P. Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs ALMOST 40ml	Metals ILM05.3	Filt Metals ILM05.3	Expl/PETN/1,3,5-DNB 8330	TDS 160.1	Metals, pH, TOC, Alkalinity	AVS/SEM 7-metals	Grain Size D422	EXAL/[illegible]
090801[illegible]	YS06-SW73-0809	8/5/09	1035	SW	24	9		6				9	3	3	6	3				090803[illegible]
090801[illegible]	YS06-SD73-0809		1045	SO	24							9			3		3	3	6	090803[illegible]
090801[illegible]	YS06-SW74-0809		1135	SW	8	3		2				3	1	1	2	1				090803[illegible]
090801[illegible]	YS06-SW74P-0809		1140	SW	7	3		2				3	1	1	2					090803[illegible]
090801[illegible]	YS06-SD74-0809		1150	SO	8							3			1		1	1	2	090803[illegible]
090801[illegible]	YS06-SD74P-0809		1200	SO	6							3	1		1			1		090803[illegible]
090801[illegible]	YS06-SW75-0809		1215	SW	8	3		2				3	1	1	2	1				090803[illegible]
090801[illegible]	YS06-SD75-0809		1220	SD	8							3			1		1	1	2	090803[illegible]
090801[illegible]	YS06-EB01-090509		1615	AQ	8	3		2				3	1	1	2	1				090803[illegible]
090801[illegible]	YS06-EB02-090509	↓	1630	AQ	6	3		1				3	1		2					090803[illegible]

Sample Unpacked By: [illegible]
Sample Order Entry By: [illegible]
Samples Received in Good Condition? Y or N (recd)
If no, explain: SW73-AL Broken

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.07 Y or NA

Comments:
YS06-SW73 / SD73 Run MS/MSD
EB01-SW
EB02-SD
Residual Chlorine Present? Yes ✓

Relinquished by: [illegible]	Date/Time: 8/5/09 2000	Received by: [illegible]	Date/Time: 8/6/09 0900
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where? EXPL+PETN+1,3,5-DNB to EMPIRICAL AVS/SEM to CAS GRAIN SIZE to CT LABS

Custody Seal(s) intact? Y or N

On Ice? Y or N

Cooler Temp: 1.6, 1.3, 2.6, °C 0.7, 2°C

Samples stored [illegible] days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

CTO-166

CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

№ 03932

Page 1 of 1

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: (757) 671-8311
Sampler's Name: P. Murphy

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Site 6
Turnaround Time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

Lab ID	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3	Metals ILM05.3 100DM	FMetals ILM05.3 100DM	Explo / PETN / 3,5-DNA AL 8330	TDS 160.1	Metals, pH, TOC, Alkalinity 8270	AVS / SEM 7 Metals 402	Grain size D422 8082	EXPL AVS-SEM
09080116-09 / 09080117-13	YS06-SW76-0809	8/6/09	1020	SW	8	3		2				3	1	1	2	1				09080836-17 K2 K2
09080115-11 / 09080835-09	YS06-SO76-0809		1030	SO	8							3			1		1	1	2	09080834-11 / 09080835-11
09080116-20 / 09080117-14	YS06-SW77-0809		1045	SW	8	3		2				3	1	1	2	1				09080836-18 K2 K2
09080115-12 / 09080835-10	YS06-SO77-0809		1050	SO	8							3			1		1	1	2	09080834-12 / 09080835-12
09080116-21 / 09080117-15	YS06-SW78-0809		1145	SW	8	3		2				3	1	1	2	1				09080836-19 K2 K2
09080115-13 / 09080835-11	YS06-SO78-0809		1155	SO	8							3			1		1	1	2	09080834-13 / 09080835-13
09080116-22 / 09080117-16	YS06-EB01-080609		1400	AQ	8	3		2				3	1	1	2	1				09080836-20 K2 K2
09080534-01	YS06-EB02-080609		1430	AQ	6	3		1				3	1		2					09080842-01 K2
09080116-23	YS06-TB01-080609	↓	1445	TB	3	3														

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only

Sample Unpacked By:
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or N/A
625 & Phenol samples checked for chlorine? Y or N/A
608 samples checked for pH between 5.0-9.0? Y or N/A

Comments

EB01=SW EB02=SD

Sample Custody

Relinquished by:	Date/Time: 8/6/09 1730	Received by:	Date/Time: 8/7/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where? PETN / 3,5-DNAT EXPL to Empirical
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp 2.1, 2.1, 1.3 °C

Samples st days after date report mailed at no extra charge. GRAINSIZE to CT LABS
AVS/SEM to CAS

White & Yellow copy to lab • Pink copy for customer

SDG006 Explosives

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

JLW CRITERION "SDG6 (Start H_2O SDG6) S 13338 140

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS
TAT: 20 calendar days
Report style: level IV
Disk requirement: ChemHill LabSpec7

Samples shipped to: EMPIRICAL
Contact: JANICE SCHILLING
Address: 621 Mainstream Dr. Suite 270
Nashville, TN
Phone: (615) 345-1115 x223
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DONER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050
Sampling complete? (Y) or N (see Note 1)
Project-specific (PS) or Batch (B) QC? LCS/LCSDup for no (designated MS/MSD will con

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other field blank

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 S- CLP T- TCLP S - SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL, 8330 + PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-SW70-0809	8/4	0930	1	F	U			2		✓		0908035-01
YS06-SW71-0809		0955								✓		-02
YS06-SW72-0809		1020								✓		-03
YS06-SW69-0809		1040								✓		-04
YS06-SW68-0809		1100								✓		-05
YS06-SW68P-0809		1105	↓							✓		-06
YS06-FB01-080409		1400	9							✓		-07
YS06-FB02-080409		1405	9							✓		-08
YS06-EB02-080409		1445	4							✓		-09
YS06-EB01-080409	↓	1450	4	↓	↓			↓		✓		-10

Clients Special Instructions:

Temperature 3.1°C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) K. Sivils	Date: 8/5/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1550	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date 8/6/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

09:60

Revision 0 2-10-99

SDG006 Explosives

2120 W (H2O) continue

S 13340

141

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 Yorktown
TAT: 20 calender days
Report style: level IV
Disk requirement: CH2M HILL LabSpec7

Samples shipped to: EMPIRICAL
Contact: JANICE SCHILLING
Address: 621 Mainstream Drive, Suite 270
Nashville, TN 37228
Phone: (615) 345-1115 x232
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 x 4089
Fax: (919) 379-4050
Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC?

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP T- TCLP
S - SW-846
W- CWA 600-series
O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL 8330T PETNT 3,5-DNT	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-SW73-0809	8/5	1035	1	F	U			5	X	✓		USE FOR MS/MSD -01
YS06-SW74-0809		1135						2		✓		-02
YS06-SW74P-0809		1140						2		✓		-03
YS06-SW75-0809		1215						2		✓		-04
YS06-EB01-080509		1615						2		✓		-05
YS06-EB02-080509		1620						2		✓		0908056 -06

Down 8/6/09

Clients Special Instructions:

Temperature 5.9° °C

Lab: Received in good condition? Y or N **Describe any problems:**

#1 Relenquished by:(sig)	Date: 8/6/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1335	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 8/7/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 08:30

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

5.9°C

Revision 0 2-10-99

SDG0006 Explosives

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

SDG 6 Lab/s 13348

142

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 Yorktown
TAT: 20 Calendar day
Report style: level IV
Disk requirement: CH2M Hill LabSpec 7

Samples shipped to: Empirical
Contact: Janice Schilling
Address: 621 Mainstream Drive, Ste. 270
Nashville TN 37228
Phone: (615) 345 1115 x232
Project Locale (state) VA

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379- 4050
Sampling complete? (Y) or N (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP T- TCLP
S - SW-846
W- CWA 600-series
O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL 8330 + PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-SW76-0809	8/6	1020	1	F	U			2		✓		0908064-01
YS06-SW77-0809	"	1045	"	"	"			2		✓		-02
YS06-SW78-0809	"	1145	"	"	"			2		✓		-03
YS06-EB01-080609	8/6	1400	4	"	"			2		✓		-04

DB 8/7/09

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) R. Surles	Date: 8/7/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1415	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 8/8	#2 Received by:(sig)	Date: 8/8/09
Company Name:	Time:	Company Name: GLAB	Time: 8:3	Company Name:	Time: 08:3

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

3. 10(

Revision 0 2-10-99

143

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908035 Number of Coolers: 2 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: 08/06/09 ~~08:30~~ WS 09:00 Date cooler(s) opened: 08/06/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: ~~FedEx~~ WS (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9204

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No (N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.1°C

Dates samples were logged-in: 8/06/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... (Yes) No N/A
11. Did all bottles arrive unbroken? ..... WS ~~Yes~~ (No) N/A
12. Was all required bottle label information complete? ..... (Yes) No N/A
13. Did all bottle labels agree with custody papers? ..... (Yes) No N/A
14. Were correct containers used for the analyses indicated? ..... (Yes) No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No (N/A)
16. Was residual chlorine present in any applicable sample containers? ..... Yes No (N/A)
17. Was sufficient amount of sample sent for the analyses required? ..... (Yes) No N/A
18. Was headspace present in any included VOA vials? ..... Yes No (N/A)

If Non-Conformance issues were present, list by sample ID: _____

1 1L Amber broken in Shipment CAR#: _____

for YS 06-EB01-080409

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EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: 08/06/09 08:30 WS 09:00 Date cooler(s) opened: 08/06/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: ~~FedEx~~ WS (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9218

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No (N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 0.1°C

Dates samples were logged-in: 8/06/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was residual chlorine present in any applicable sample containers? ..... Yes No N/A
17. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
18. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

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EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 3 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: 08/06/09 ~~08:30~~ WS 09:00 Date cooler(s) opened: 08/06/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: ~~FedEx~~ WS (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 4824

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 6.0°C

Dates samples were logged-in: 8/06/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

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0908056 EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908055 WS Number of Coolers: 1 of 2

Client: Compuchem Project: CTO-166

Date/Time Received: 8/07/09 09:00 Date cooler(s) opened: 8/07/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 3023

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival? ..... Yes No (N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 5.9oC

Dates samples were logged-in: 8/07/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): WS
10. Were all bottle lids intact and sealed tightly? ..... (Yes) No N/A
11. Did all bottles arrive unbroken? ..... Yes (No) N/A
12. Was all required bottle label information complete? ..... (Yes) No N/A
13. Did all bottle labels agree with custody papers? ..... (Yes) No N/A
14. Were correct containers used for the analyses indicated? ..... (Yes) No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No (N/A)
16. Was residual chlorine present in any applicable sample containers? ..... Yes No (N/A)
17. Was sufficient amount of sample sent for the analyses required? ..... (Yes) No N/A
18. Was headspace present in any included VOA vials? ..... Yes (No) N/A

If Non-Conformance issues were present, list by sample ID: _____

1/L amber bottle for 9306-SD73-0809 CAR#: _____

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EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908055 Number of Coolers: 2 of 2

Client: Compuchem Project: CTO-166

Date/Time Received: 8/07/09 09:00 Date cooler(s) opened: 8/07/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 5410

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 2-3°C

Dates samples were logged-in: 8/07/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was residual chlorine present in any applicable sample containers?	Yes	No	N/A
17. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

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EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908064 Number of Coolers: 1 of 1

Client: Cornerstone Project: Yard Tank

Date/Time Received: 8/8/09 8:30 Date cooler(s) opened: 8/8/09

Opened By (print): [signature] (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: (FedEx) UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8422

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: _____ Seal date: _____ Seal Initials: _____

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 5.1

Dates samples were logged-in: 8/10/09

9. Initial this form to acknowledge login of sample(s): (Name): WILLIAM SCHWAB (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 8/4-6/09
Received Date: 8/5-7/09
Analysis Dates: 8/7-11/09

Cooler Temps: 0.9-5.7°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks- qualifications were required. The associated QC blanks for these samples were: YS06-TB01-080409 (no positive results), YS06-TB01-080509 and YS06-TB01-080609 (no positive results)- trip blanks; YS06-FB02-080409 - field blank; YS06-EB02-080409, YS06-EB01-080509 and YS06-EB01-080609- equipment blanks.

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKGM	methylene chloride	0.24J ug/L	0.50 ug/L	2.4 ug/L
YS06-TB01-080509	methylene chloride	0.11J ug/L	0.5 ug/L	1.1 ug/L
YS06-FB02-080409	methylene chloride	0.56	0.5	5.6
	2-butanone	1.5J	2.5	15
	1,2-dichloroethane	0.33J	0.5	1.65
YS06-EB02-080409	acetone	3.1	2.5	31
	methylene chloride	0.52	0.5	5.2
	2-butanone	1.8J	2.5	18
	1,2-dichloroethane	0.3J	0.5	1.5
YS06-EB01-080509	acetone	8.4	2.5	84
	methylene chloride	1.4	0.5	14
	2-butanone	2.4J	2.5	24
	toluene	0.13J	2.5	0.65
YS06-EB01-080609	acetone	14	2.5	140
	methylene chloride	0.8	0.5	8
	2-butanone	8.8	2.5	88
	toluene	0.12J	2.5	0.6

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	acetone	B	BL
YS06-SW74-0809, YS06-SW74P-0809	2-butanone	B	BL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW70-0809, YS06-SW76-0809	toluene	B	BL
YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	methylene chloride	B	BL

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was submitted for sample YS06-SW73-0809- no qualifications were required.

Field Duplicate Sample

A field duplicate was submitted for samples YS06-SW68-0809 and YS06-SW74-0809—no positive results above the CRQL, no qualifications were required.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Masciotta **Date:** 10,5,09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Lab File ID: 9H07004-TUN169 BFB Injection Date: 08/07/09

Instrument ID: 5972HP69 BFB Injection Time: 1039

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.2
75	30.0 - 60.0% of mass 95	49.1
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	93.3
175	5.0 - 9.0% of mass 174	6.8 (7.3)1
176	95.0 - 101.0% of mass 174	91.9 (98.4)1
177	5.0 - 9.0% of mass 176	6.2 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9H07003-CAL	9H07004-CAL369	08/07/09	1108
02	VSTD0.5	9H07003-CAL	9H07004-CAL169	08/07/09	1219
03	VSTD040	9H07003-CAL	9H07004-CAL669	08/07/09	1318
04	VSTD020	9H07003-CAL	9H07004-CAL569	08/07/09	1409
05	VSTD010	9H07003-CAL	9H07004-CAL469	08/07/09	1438
06	VSTD001	9H07003-CAL	9H07004-CAL2R6	08/07/09	1636
07	VBLKGI	9080717-BLK	9080717-BLK169	08/07/09	1814
08	VGILCS	9080717-BS1	9080717-BS169	08/07/09	1856
09	VGILCSD	9080717-BSD	9080717-BSD169	08/07/09	1925
10	YS06-SW70-0809	0908016-01	0908016-0169	08/07/09	2010
11	YS06-SW71-0809	0908016-02	0908016-0269	08/07/09	2039
12	YS06-SW72-0809	0908016-03	0908016-0369	08/07/09	2108
13	YS06-SW69-0809	0908016-04	0908016-0469	08/07/09	2136
14					
15					
16					
17					
18					
19					
20					
21					
22					

FORM V VOA

FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Instrument ID: 5972HP69 Calibration Date(s): 08/07/09 08/07/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1108 1636

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.64747347	6.805	15.000	
Chloromethane	AVRG		0.38123055	8.308	15.000	
Vinyl Chloride	AVRG		0.33449181	6.508	30.000	
Bromomethane	LINR	0.16247346	5.68132425	0.9974500	0.9900000	
Chloroethane	LINR	-0.0654442	7.83852194	0.9985733	0.9900000	
Trichlorofluoromethane	AVRG		0.81499512	10.103	15.000	
1,1-Dichloroethene	AVRG		0.30701733	10.185	30.000	
Carbon disulfide	AVRG		1.12772242	4.771	15.000	
1,1,2-trichloro-1,2,2-triflu	LINR	-0.0653874	4.88131446	0.9979583	0.9900000	
Acetone	LINR	-0.3851359	35.8643961	0.9982527	0.9900000	
Methyl acetate	AVRG		0.18613636	14.112	15.000	
Methylene Chloride	AVRG		0.27447569	10.953	15.000	
trans-1,2-Dichloroethene	AVRG		0.31377967	5.264	15.000	
Methyl-tert-butyl ether	AVRG		0.53055921	3.052	15.000	
1,1-Dichloroethane	AVRG		0.59126653	6.383	15.000	
cis-1,2-Dichloroethene	AVRG		0.32126426	3.075	15.000	
2-butanone	AVRG		0.04343801	9.721	15.000	L/R
Chloroform	AVRG		0.63906423	4.215	30.000	
1,1,1-Trichloroethane	AVRG		0.62511497	9.684	15.000	
Carbon Tetrachloride	AVRG		0.54574432	11.416	15.000	
Benzene	AVRG		1.17306034	3.175	15.000	
1,2-Dichloroethane	AVRG		0.35422496	8.356	15.000	
Trichloroethene	AVRG		0.34152971	8.425	15.000	
1,2-Dichloropropane	AVRG		0.24466108	6.792	30.000	
Bromodichloromethane	AVRG		0.41212992	2.673	15.000	
cis-1,3-Dichloropropene	AVRG		0.33646802	13.387	15.000	
4-Methyl-2-pentanone	AVRG		0.15786154	9.459	15.000	
Toluene	AVRG		1.03796763	7.528	30.000	
trans-1,3-Dichloropropene	AVRG		0.43415829	11.619	15.000	
1,1,2-Trichloroethane	AVRG		0.20921658	5.653	15.000	
Tetrachloroethene	LINR	-0.0346616	2.46944906	0.9989356	0.9900000	
2-hexanone	AVRG		0.10389853	10.729	15.000	
Dibromochloromethane	AVRG		0.34831156	4.804	15.000	
1,2-Dibromoethane	AVRG		0.20592242	5.416	15.000	
Chlorobenzene	AVRG		1.05928794	6.805	15.000	
Ethylbenzene	AVRG		0.56948431	12.297	30.000	
m,p-Xylene	AVRG		0.72810829	14.430	15.000	
o-Xylene	AVRG		0.68099136	13.173	15.000	
Styrene	AVRG		0.98900786	9.819	15.000	
Bromoform	AVRG		0.19389748	6.564	15.000	
Isopropyl Benzene	LINR	-0.0462514	0.55718944	0.9983887	0.9900000	
1,1,2,2-Tetrachloroethane	AVRG		0.47107774	7.230	15.000	
1,3-Dichlorobenzene	AVRG		1.76082383	13.133	15.000	
1,4-Dichlorobenzene	AVRG		1.73029206	12.037	15.000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Lab File ID: 9H10006-TUN169 BFB Injection Date: 08/10/09

Instrument ID: 5972HP69 BFB Injection Time: 1255

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.2
75	30.0 - 60.0% of mass 95	49.4
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	95.8
175	5.0 - 9.0% of mass 174	6.7 (7.0)1
176	95.0 - 101.0% of mass 174	95.0 (99.1)1
177	5.0 - 9.0% of mass 176	6.6 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9H10006-CCV	9H10006-CCV169	08/10/09	1320
02	VBLKGL	9081008-BLK	9081008-BLK169	08/10/09	1425
03	VGLLCS	9081008-BS1	9081008-BS169	08/10/09	1549
04	VGLLCSD	9081008-BSD	9081008-BSD169	08/10/09	1700
05	YS06-SW68-0809	0908016-05	0908016-0569	08/10/09	1852
06	YS06-SW68P-0809	0908016-06	0908016-0669	08/10/09	1921
07	YS06-FB01-080409	0908016-07	0908016-0769	08/10/09	1950
08	YS06-FB02-080409	0908016-08	0908016-0869	08/10/09	2019
09	YS06-EB02-080409	0908016-09	0908016-0969	08/10/09	2048
10	YS06-EB01-080409	0908016-10	0908016-1069	08/10/09	2117
11	YS06-TB01-080409	0908016-11	0908016-1169	08/10/09	2146
12	YS06-SW73-0809	0908016-12	0908016-1269	08/10/09	2214
13	YS06-SW74-0809	0908016-13	0908016-1369	08/10/09	2243
14	YS06-SW74P-0809	0908016-14	0908016-1469	08/10/09	2312
15	YS06-SW75-0809	0908016-15	0908016-1569	08/10/09	2341
16	YS06-EB01-080504	0908016-16	0908016-1669	08/11/09	0010
17	YS06-EB02-080504	0908016-17	0908016-1769	08/11/09	0039
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FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

ab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Instrument ID: 5972HP69 Calibration Date: 08/10/09 Time: 1320

Lab File ID: 9H10006-CCV169 Init. Calib. Date(s): 08/07/09 08/07/09

Init. Calib. Times: 1108 1636

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.6474700	0.5511754	0.5511754	0.001	-14.87	90.00	AVRG	
Chloromethane	0.3812300	0.3147550	0.3147550	0.1	-17.44	90.00	AVRG	
Vinyl Chloride	0.3344900	0.2949442	0.2949442	0.001	-11.82	20.00	AVRG	
Bromomethane	95.943140	125.00000	0.1065019	0.001	-23.24	90.00	LINR	
Chloroethane	133.03646	125.00000	0.1441261	0.001	6.43	90.00	LINR	
Trichlorofluoromethane	0.8150000	0.7907923	0.7907923	0.001	-2.97	90.00	AVRG	
1,1-Dichloroethene	0.3070200	0.2760149	0.2760149	0.001	-10.10	20.00	AVRG	
Carbon disulfide	1.1277200	1.2218884	1.2218884	0.001	8.35	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	109.91845	125.00000	0.1935411	0.001	-12.06	90.00	LINR	
Acetone	338.95256	625.00000	0.0172693	0.001	-45.77	90.00	LINR	4R
Methyl acetate	0.1861400	0.2114004	0.2114004	0.001	13.57	90.00	AVRG	
Methylene Chloride	0.2744800	0.2890421	0.2890421	0.001	5.30	90.00	AVRG	
ns-1,2-Dichloroethene	0.3137800	0.3284514	0.3284514	0.001	4.68	90.00	AVRG	
Methyl-tert-butyl ether	0.5305600	0.5987527	0.5987527	0.001	12.85	90.00	AVRG	
1,1-Dichloroethane	0.5912700	0.6197728	0.6197728	0.1	4.82	90.00	AVRG	
cis-1,2-Dichloroethene	0.3212600	0.3271860	0.3271860	0.001	1.84	90.00	AVRG	
2-butanone	0.0434400	0.0478874	0.0478874	0.001	10.24	90.00	AVRG	4R
Chloroform	0.6390600	0.6509191	0.6509191	0.001	1.86	20.00	AVRG	
1,1,1-Trichloroethane	0.6251100	0.6621578	0.6621578	0.001	5.93	90.00	AVRG	
Carbon Tetrachloride	0.5457400	0.5634621	0.5634621	0.001	3.25	90.00	AVRG	
Benzene	1.1730600	1.1708701	1.1708701	0.001	-0.19	90.00	AVRG	
1,2-Dichloroethane	0.3542200	0.3542680	0.3542680	0.001	0.01	90.00	AVRG	
Trichloroethene	0.3415300	0.3551733	0.3551733	0.001	3.99	90.00	AVRG	
1,2-Dichloropropane	0.2446600	0.2397460	0.2397460	0.001	-2.01	20.00	AVRG	
Bromodichloromethane	0.4121300	0.4156961	0.4156961	0.001	0.86	90.00	AVRG	
cis-1,3-Dichloropropene	0.3364700	0.3539673	0.3539673	0.001	5.20	90.00	AVRG	
4-Methyl-2-pentanone	0.1578600	0.1718366	0.1718366	0.001	8.85	90.00	AVRG	
Toluene	1.0379700	1.0465041	1.0465041	0.001	0.82	20.00	AVRG	
trans-1,3-Dichloropropene	0.4341600	0.4634693	0.4634693	0.001	6.75	90.00	AVRG	
1,1,2-Trichloroethane	0.2092200	0.2232572	0.2232572	0.001	6.71	90.00	AVRG	
Tetrachloroethene	136.14007	125.00000	0.4550740	0.001	8.91	90.00	LINR	
2-hexanone	0.1039000	0.1169639	0.1169639	0.001	12.57	90.00	AVRG	
Dibromochloromethane	0.3483100	0.3787639	0.3787639	0.001	8.74	90.00	AVRG	
1,2-Dibromoethane	0.2059200	0.2306329	0.2306329	0.001	12.00	90.00	AVRG	
Chlorobenzene	1.0592900	1.1095009	1.1095009	0.3	4.74	90.00	AVRG	
Ethylbenzene	0.5694800	0.5983898	0.5983898	0.001	5.08	20.00	AVRG	
m,p-Xylene	0.7281100	0.7465567	0.7465567	0.001	2.53	90.00	AVRG	
o-Xylene	0.6809900	0.6991050	0.6991050	0.001	2.66	90.00	AVRG	
Styrene	0.9890100	1.0321327	1.0321327	0.001	4.36	90.00	AVRG	
Bromoform	0.1939000	0.2111766	0.2111766	0.1	8.91	90.00	AVRG	
Isopropyl Benzene	133.45136	125.00000	1.9990729	0.001	6.76	90.00	LINR	
,2,2-Tetrachloroethane	0.4710800	0.4999408	0.4999408	0.3	6.13	90.00	AVRG	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Lab File ID: 9H11004-TUN169 BFB Injection Date: 08/11/09

Instrument ID: 5972HP69 BFB Injection Time: 1005

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.2
75	30.0 - 60.0% of mass 95	51.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	93.5
175	5.0 - 9.0% of mass 174	6.8 (7.2)1
176	95.0 - 101.0% of mass 174	92.3 (98.7)1
177	5.0 - 9.0% of mass 176	6.1 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9H11004-CCV	9H11004-CCV169	08/11/09	1031
02	VBLKGM	9081111-BLK	9081111-BLK169	08/11/09	1111
03	VGMLCS	9081111-BS1	9081111-BS169	08/11/09	1154
04	VGMLCSD	9081111-BSD	9081111-BSD169	08/11/09	1223
05	YS06-TB01-080504	0908016-18	0908016-1869	08/11/09	1329
06	YS06-SW73-0809MS	9081111-MS1	9081111-MS169	08/11/09	1415
07	YS06-SW73-0809MSD	9081111-MSD	9081111-MSD169	08/11/09	1444
08	YS06-SW76-0809	0908016-19	0908016-1969	08/11/09	1513
09	YS06-SW77-0809	0908016-20	0908016-2069	08/11/09	1542
10	YS06-SW78-0809	0908016-21	0908016-2169	08/11/09	1611
11	YS06-EB01-080609	0908016-22	0908016-2269	08/11/09	1640
12	YS06-TB01-080609	0908016-23	0908016-2369	08/11/09	1709
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Instrument ID: 5972HP69 Calibration Date: 08/11/09 Time: 1031

Lab File ID: 9H11004-CCV169 Init. Calib. Date(s): 08/07/09 08/07/09

Init. Calib. Times: 1108 1636

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.6474700	0.6109015	0.6109015	0.001	-5.65	90.00	AVRG	
Chloromethane	0.3812300	0.3572808	0.3572808	0.1	-6.28	90.00	AVRG	
Vinyl Chloride	0.3344900	0.3413719	0.3413719	0.001	2.06	20.00	AVRG	
Bromomethane	98.990337	125.00000	0.1107927	0.001	-20.81	90.00	LINR	
Chloroethane	146.66435	125.00000	0.1580348	0.001	17.33	90.00	LINR	
Trichlorofluoromethane	0.8150000	0.8424097	0.8424097	0.001	3.36	90.00	AVRG	
1,1-Dichloroethene	0.3070200	0.2900588	0.2900588	0.001	-5.52	20.00	AVRG	
Carbon disulfide	1.1277200	1.4665302	1.4665302	0.001	30.04	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	117.20346	125.00000	0.2054805	0.001	-6.24	90.00	LINR	
Acetone	332.56954	625.00000	0.0169845	0.001	-46.79	90.00	LINR	L/R
Methyl acetate	0.1861400	0.1375889	0.1375889	0.001	-26.08	90.00	AVRG	
Methylene Chloride	0.2744800	0.3251034	0.3251034	0.001	18.44	90.00	AVRG	
ns-1,2-Dichloroethene	0.3137800	0.3748177	0.3748177	0.001	19.45	90.00	AVRG	
Methyl-tert-butyl ether	0.5305600	0.6183984	0.6183984	0.001	16.56	90.00	AVRG	
1,1-Dichloroethane	0.5912700	0.7006341	0.7006341	0.1	18.50	90.00	AVRG	
cis-1,2-Dichloroethene	0.3212600	0.3498194	0.3498194	0.001	8.89	90.00	AVRG	
2-butanone	0.0434400	0.0481146	0.0481146	0.001	10.76	90.00	AVRG	L/R
Chloroform	0.6390600	0.7138192	0.7138192	0.001	11.70	20.00	AVRG	
1,1,1-Trichloroethane	0.6251100	0.6923425	0.6923425	0.001	10.76	90.00	AVRG	
Carbon Tetrachloride	0.5457400	0.6100234	0.6100234	0.001	11.78	90.00	AVRG	
Benzene	1.1730600	1.3105742	1.3105742	0.001	11.72	90.00	AVRG	
1,2-Dichloroethane	0.3542200	0.3922358	0.3922358	0.001	10.73	90.00	AVRG	
Trichloroethene	0.3415300	0.3705754	0.3705754	0.001	8.50	90.00	AVRG	
1,2-Dichloropropane	0.2446600	0.2757209	0.2757209	0.001	12.70	20.00	AVRG	
Bromodichloromethane	0.4121300	0.4615395	0.4615395	0.001	11.99	90.00	AVRG	
cis-1,3-Dichloropropene	0.3364700	0.3726140	0.3726140	0.001	10.74	90.00	AVRG	
4-Methyl-2-pentanone	0.1578600	0.1744947	0.1744947	0.001	10.54	90.00	AVRG	
Toluene	1.0379700	1.1201317	1.1201317	0.001	7.92	20.00	AVRG	
trans-1,3-Dichloropropene	0.4341600	0.4685218	0.4685218	0.001	7.91	90.00	AVRG	
1,1,2-Trichloroethane	0.2092200	0.2369256	0.2369256	0.001	13.24	90.00	AVRG	
Tetrachloroethene	140.23707	125.00000	0.4683466	0.001	12.19	90.00	LINR	
2-hexanone	0.1039000	0.1157852	0.1157852	0.001	11.44	90.00	AVRG	
Dibromochloromethane	0.3483100	0.3807258	0.3807258	0.001	9.31	90.00	AVRG	
1,2-Dibromoethane	0.2059200	0.2308194	0.2308194	0.001	12.09	90.00	AVRG	
Chlorobenzene	1.0592900	1.1635663	1.1635663	0.3	9.84	90.00	AVRG	
Ethylbenzene	0.5694800	0.6249424	0.6249424	0.001	9.74	20.00	AVRG	
m,p-Xylene	0.7281100	0.7892302	0.7892302	0.001	8.39	90.00	AVRG	
o-Xylene	0.6809900	0.7252411	0.7252411	0.001	6.50	90.00	AVRG	
Styrene	0.9890100	1.1286328	1.1286328	0.001	14.12	90.00	AVRG	
Bromoform	0.1939000	0.2061389	0.2061389	0.1	6.31	90.00	AVRG	
Isopropyl Benzene	136.98051	125.00000	2.0497437	0.001	9.58	90.00	LINR	
,2,2-Tetrachloroethane	0.4710800	0.5167846	0.5167846	0.3	9.70	90.00	AVRG	

FORM VII VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Instrument ID: 5972HP69 Calibration Date: 08/11/09 Time: 1031

Lab File ID: 9H11004-CCV169 Init. Calib. Date(s): 08/07/09 08/07/09

Init. Calib. Times: 1108 1636

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.7608200	1.9353939	1.9353939	0.001	9.91	90.00	AVRG
1,4-Dichlorobenzene	1.7302900	1.8437252	1.8437252	0.001	6.56	90.00	AVRG
1,2-Dichlorobenzene	1.4187600	1.5238216	1.5238216	0.001	7.40	90.00	AVRG
1,2-Dibromo-3-Chloropropane	130.94828	125.00000	0.0816633	0.001	4.76	90.00	LINR
1,2,4-Trichlorobenzene	129.29523	125.00000	1.1373543	0.001	3.44	90.00	LINR
1,2-Dichloroethene (total)	0.3175200	0.3623185	0.3623185	0.001	14.11	90.00	AVRG
Xylene (total)	0.6809900	0.7252411	0.7252411	0.001	6.50	90.00	AVRG
Cyclohexane	146.32587	125.00000	0.4757061	0.001	17.06	90.00	LINR
Methylcyclohexane	150.56432	125.00000	0.5352738	0.001	20.45	90.00	LINR
Dibromofluoromethane	0.3215300	0.2852394	0.2852394	0.001	-11.29	90.00	AVRG
2-Dichloroethane-d4	118.76461	125.00000	0.2515961	0.001	-4.99	90.00	LINR
uene-d8	111.90047	125.00000	1.3770377	0.001	-10.48	90.00	LINR
Bromofluorobenzene	115.45385	125.00000	0.9783787	0.001	-7.64	90.00	LINR

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKGM

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Lab File ID: 9081111-BLK169 Lab Sample ID: 9081111-BLK1

Date Analyzed: 08/11/09 Time Analyzed: 1111

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP69

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VGMLCS	9081111-BS1	9081111-BS16	1154
02	VGMLCSD	9081111-BSD1	9081111-BSD1	1223
03	YS06-TB01-080504	0908016-18	0908016-1869	1329
04	YS06-SW73-0809MS	9081111-MS1	9081111-MS16	1415
05	YS06-SW73-0809MSD	9081111-MSD1	9081111-MSD1	1444
B-06	YS06-SW76-0809	0908016-19	0908016-1969	1513
B-07	YS06-SW77-0809	0908016-20	0908016-2069	1542
B-08	YS06-SW78-0809	0908016-21	0908016-2169	1611
09	YS06-EB01-080609	0908016-22	0908016-2269	1640
10	YS06-TB01-080609	0908016-23	0908016-2369	1709
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COMMENTS: Methylene Chl 0.24J ug/L (0.50)

FORM IV VOA

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0908016
PROTOCOL: SW-846

SAMPLE IDENTIFICATIONS: YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW69-0809, YS06-SW68-0809, YS06-SW68P-0809, YS01-FB01-080409, YS06-FB02-080409, YS06-EB02-080409, YS06-EB01-080409, YS06-TB01-080409, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-EB01-080504, YS06-EB02-080504, YS06-TB01-080504, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809, YS06-EB01-080609, and YS06-TB01-080609

The 23 aqueous samples listed above were received intact, refrigerated between 0.9C and 5.7C, with proper documentation, in sealed shipping containers, on August 5, 6, and 7, 2009. The samples were scheduled for the requested analysis of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0908016 are included in the sample data sections.

Analysis holding time requirements were met for the samples. The pH values of the samples were equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) identified in three/23 of the samples. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration file 9H07004-CAL2R69.d and sample files 0908016-0569.d and 0908016-0969.d. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (VGILCS/VGILCSD) failed Percent RPDs for Dichlorodifluoromethane and Methyl Acetate; (VGLLCS/VGLLCSD) failed Percent RPD for 1,2-Dibromo-3-Chloropropane; and (VGMLCS/VGMLCSD) failed Percent RPD for Acetone. Sample YS06-SW73-0809 was request for matrix spike/matrix spike duplicate (MS/MSD) for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
August 13, 2009

Holding Times

Sampling Date: 8/4-8/6
Received Date: 8/6-8/8
Extraction Dates: 8/7, 8/10
Analysis Dates: 8/11-8/13

Sample receipt documentation was in order. Cooler temps were acceptable.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

Contamination was reported in the associated field QC blanks.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
YS06-FB02-080409	2,4,6-trinitrotoluene	0.25J ug/L	1.25 ug/L	B	FBL
	RDX	0.73P ug/L	3.65 ug/L	B	FBL
	4-nitrotoluene	0.25JP ug/L	1.25 ug/L	B	FBL
	nitrobenzene	0.64P ug/L	1.32 ug/L	B	FBL

Sample ID	Compound	Q Flag	Q Code
YS06-SW70-0809, YS06-SW72-0809, YS06-SW69-0809, YS06-SW74-0809	2,4,6-trinitrotoluene	B	FBL
YS06-SW73-0809, YS06-SW74-0809, YS06-SW78-0809, YS06-SW69-0809, YS06-SW72-0809	RDX	B	FBL
YS06-SW71-0809, YS06-SW72-0809, YS06-SW68-0809, YS06-SW73-0809	4-nitrotoluene	B	FBL
YS06-SW71-0809, YS06-SW74P-0809, YS06-SW75-0809, YS06-SW74-0809	nitrobenzene	B	FBL

SURROGATE RECOVERIES

All surrogate recovery criteria were met on column 1. Many sample recoveries on C2 were high. The only positive results were quanted from column 1 so the sample data was not qualified due to high surrogate recoveries.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-SW73-0809 exhibited acceptable recoveries (within QAPP limits) in the MS and/or the MSD for all compounds except HMX, 1,3,5-TNB & 3-NT. RPDs were OK. The LCS sample provided with this SDG exhibited acceptable recoveries for the target compounds in the LCS and/or the LCSD. RPDs were OK. No qualifications were required

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-SW68-0809 **Duplicate ID:** YS06-SW68P-0809

Compound	Sample Conc.	Duplicate Conc.	RPD
nitrobenzene			#DIV/0!
1,3-dinitrobenzene			#DIV/0!
4-nitrotoluene			#DIV/0!

Comments: No qualifications were required. No + results except those attributed to blank contamination.

Sample ID: YS06-SW74-0809 **Duplicate ID:** YS06-SW74P-0809

Compound	Sample Conc.	Duplicate Conc.	RPD
nitrobenzene			#DIV/0!
1,3-dinitrobenzene			#DIV/0!
4-nitrotoluene			#DIV/0!

Comments: No qualifications were required. No + results except those attributed to blank contamination.

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J.

Reviewer: JCleveland **Date:** 10-14-09

Initial Calibration Date: 8/7/09, HPLC2, ultra c-18 column
RRF and %RSD Calculations: RF10, FILE ID 002V0201
Compound Name: 2-nitrotoluene
Lab Value: 311.8000

Area of Compound	3118
Conc. Of Compund	10
Calculated CF	311.8000

Compound Name: 2-nitrotoluene
Lab Value: 5.6

CF 1	311.8000
CF 2	325.7600
CF 3	337.3500
CF 4	366.7580
CF 5	356.3880
CF 6	352.7260
CF7	350.9220
Calculated % RSD	5.59

Continuing Calibration File ID: 8/12/09, 18:49, file id 001V0102.d
RRF and %D Calculations:
Compound Name: 2,4,6-TNT
Lab Value: 24.601

Area of Compound	24601
Conc. Of Compund	1000
Calculated CF	24.6010

Compound Name: 2,4,6-TNT
Lab Value: 8.6

Average RRF	22.64534
Calibration Check RRF	24.60100
Calculated % D	-8.6

SAMPLE CALCULATION

Sample ID: YS06-SW70-0809
Standard ID: ICAL 8/7/09
Compound: 2,4,6-trinitrotoluene
Concentration: 0.075 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	229		
CF of Compound	22.6453429		
Dilution Factor	1		
Weight of Sample	NA		
Extract Volume	8		
Volume of Sample	1080	NA	
% Moisture	NA		
injection volume	100	NA	
Conversion Factor	100		
Concentration	0.0700	#DIV/0!	#REF!

ORGANIC CASE NARRATIVE – Explosives
CH2M Hill, Inc. - YORKTOWN_NWS
SDG: SDG006/ CTO166
Workorder: 0908035, 0908056 and 0908064

Sampled	Rec'd	Lab ID	Client ID
8/4/2009	8/6/2009	0908035-01	YS06-SW70-0809
8/4/2009	8/6/2009	0908035-02	YS06-SW71-0809
8/4/2009	8/6/2009	0908035-03	YS06-SW72-0809
8/4/2009	8/6/2009	0908035-04	YS06-SW69-0809
8/4/2009	8/6/2009	0908035-05	YS06-SW68-0809
8/4/2009	8/6/2009	0908035-06	YS06-SW68P-0809
8/4/2009	8/6/2009	0908035-07	YS06-FB01-080409
8/4/2009	8/6/2009	0908035-08	YS06-FB02-080409
8/4/2009	8/6/2009	0908035-09	YS06-EB02-080409
8/4/2009	8/6/2009	0908035-10	YS06-EB01-080409
8/5/2009	8/7/2009	0908056-01	YS06-SW73-0809
8/5/2009	8/7/2009	0908056-02	YS06-SW74-0809
8/5/2009	8/7/2009	0908056-03	YS06-SW74P-0809
8/5/2009	8/7/2009	0908056-04	YS06-SW75-0809
8/5/2009	8/7/2009	0908056-05	YS06-EB01-080509
8/5/2009	8/7/2009	0908056-06	YS06-EB02-080509
8/6/2009	8/8/2009	0908064-01	YS06-SW76-0809
8/6/2009	8/8/2009	0908064-02	YS06-SW77-0809
8/6/2009	8/8/2009	0908064-03	YS06-SW78-0809
8/6/2009	8/8/2009	0908064-04	YS06-EB01-080609

Method: The samples were analyzed by USEPA SW-846 Method 8330A (solid phase extraction followed by packed column HPLC) for waters upon receipt to the laboratory in satisfactory condition.
Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: All CCVs were within 20% difference.
- Blank Results: No target analytes were detected in the method blanks.
- Surrogate Recoveries: All C-18 column recoveries were within limits. Recoveries on the RP column exceeded limits with a positive bias in most analyses. Most results are reported from the C-18 analysis. Results qualified with "M" indicate they are being reported from the RP column due to matrix interference and may be considered further estimated due to the surrogate recoveries.
- LCS Results: All recoveries were within limits.
- MS/MSD Results: Of 32 recoveries, 6 were below the limits. See form 3.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

FORM 8
EXPL ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Column: ULTRA C-18 ID: 4.60 (mm) Cont. Calib. Date(s): 08/12/09-08/13/09

Instrument ID: HPLC2

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

	SURROGATE RT FROM CONTINUING CALIBRATION S1 : 21.22					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	RT #
01		SEQ-CCV	08/12/09	1849	21.22	6.88
02		SEQ-CCV	08/12/09	1934		
03	9H10009-BLK1	9H10009-BLK1	08/12/09	2009	21.22	
04	9H10009-BS1	9H10009-BS1	08/12/09	2043	21.21	
05	9H10009-BS2	9H10009-BS2	08/12/09	2118	21.19	
06	YS06-SW73-08	0908056-01	08/12/09	2152	21.34	
07	9H10009-MS1	9H10009-MS1	08/12/09	2226	21.18	
08	9H10009-MSD1	9H10009-MSD1	08/12/09	2301	21.13	
09	9H10009-MS2	9H10009-MS2	08/12/09	2335	21.13	
10	9H10009-MSD2	9H10009-MSD2	08/13/09	0009	21.13	
11	YS06-SW74-08	0908056-02	08/13/09	0044	21.13	
12	YS06-SW74P-0	0908056-03	08/13/09	0118	21.16	
13	YS06-SW75-08	0908056-04	08/13/09	0152	21.15	
14	YS06-EB01-08	0908056-05	08/13/09	0227	21.19	
15	YS06-EB02-08	0908056-06	08/13/09	0301	21.19	
16		SEQ-CCV	08/13/09	0335	21.17	6.88
17		SEQ-CCV	08/13/09	0410		
18	YS06-SW76-08	0908064-01	08/13/09	0444	21.20	
19	YS06-SW77-08	0908064-02	08/13/09	0519	21.23	
20	YS06-SW78-08	0908064-03	08/13/09	0553	21.27	
21	YS06-EB01-08	0908064-04	08/13/09	0627	21.09	
22		SEQ-CCV	08/13/09	0736	21.05	6.85
23		SEQ-CCV	08/13/09	0810		
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS
S1 = 1-Chloro-3-Nitrobenzen (+/- 0.50 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\016V1601.D
Report Date: 17-Aug-2009 14:48

Empirical Laboratories, LLC

JLS 8.17.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i
Lab File ID: 016V1601.D
Analysis Type:
Lab Sample ID: SEQ-CCV
Method: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\8330.m

Injection Date: 13-AUG-2009 03:35
Init. Cal. Date(s): 14-MAY-2009 07-AUG-2009
Init. Cal. Times: 13:47 16:30
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	57.75906	60.41100	0.010	4.6	15.0	
	2 RDX	338	330	0.010	-2.2	15.0	
$	30 1,2-Dinitrobenzene	1000	1099	0.010	-9.9	15.0	
	3 1,3,5-Trinitrobenzene	1000	1018	0.010	-1.8	15.0	
	4 1,3-Dinitrobenzene	302	359	0.010	18.9	15.0	<-H
	5 Tetryl	374	302	0.010	-19.2	15.0	<-L
	6 Nitrobenzene	314	334	0.010	6.3	15.0	
	9 2,4,6-Trinitrotoluene	22.64534	24.46100	0.010	8.0	15.0	
	10 4-Amino-2,6-dinitrotoluene	22.67709	24.90900	0.010	9.8	15.0	
	11 2-Amino-4,6-dinitrotoluene	435	444	0.010	2.2	15.0	
	12 2,6-Dinitrotoluene	342	364	0.010	6.6	15.0	
	13 2,4-Dinitrotoluene	16.44444	16.71300	0.010	1.6	15.0	
	14 2-Nitrotoluene	343	350	0.010	1.9	15.0	
	15 4-Nitrotoluene	273	275	0.010	0.6	15.0	
	16 3-Nitrotoluene	430	432	0.010	0.4	15.0	
$	18 1-Chloro-3-Nitrobenzene	597	604	0.010	1.2	15.0	

J+ ✓
J/UJ - all assoc

4209.D

SW73
74
74P
75
76
77
78

EB01-080509 ✓ WC
EB02-080509 ✓ 8/17/09
EB01-080609 ✓

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\023V2301.D
Report Date: 17-Aug-2009 14:49

Empirical Laboratories, LLC

JLB 8-17-09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i
Lab File ID: 023V2301.D
Analysis Type:
Lab Sample ID: SEQ-CCV
Method: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\8330.m

Injection Date: 13-AUG-2009 07:36
Init. Cal. Date(s): 14-MAY-2009 07-AUG-2009
Init. Cal. Times: 13:47 16:30
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	57.75906	61.08000	0.010	5.7	15.0	
	2 RDX	338	320	0.010	-5.3	15.0	
$	30 1,2-Dinitrobenzene	1000	1082	0.010	-8.2	15.0	
	3 1,3,5-Trinitrobenzene	1000	1026	0.010	-2.6	15.0	
	4 1,3-Dinitrobenzene	302	340	0.010	12.8	15.0	
	5 Tetryl	374	308	0.010	-17.7	15.0	<- J/UJ
	6 Nitrobenzene	314	328	0.010	4.3	15.0	
	9 2,4,6-Trinitrotoluene	22.64534	25.34900	0.010	11.9	15.0	
	10 4-Amino-2,6-dinitrotoluene	22.67709	26.17100	0.010	15.4	15.0	<- J+ - ND not
	11 2-Amino-4,6-dinitrotoluene	435	446	0.010	2.6	15.0	
	12 2,6-Dinitrotoluene	342	350	0.010	2.4	15.0	
	13 2,4-Dinitrotoluene	16.44444	16.96700	0.010	3.2	15.0	
	14 2-Nitrotoluene	343	351	0.010	2.3	15.0	
	15 4-Nitrotoluene	273	281	0.010	2.8	15.0	
	16 3-Nitrotoluene	430	432	0.010	0.4	15.0	
$	18 1-Chloro-3-Nitrobenzene	597	611	0.010	2.4	15.0	

L2090D

SW76
77
78
E301-080609

8/17/09

FORM 8
EXPL ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Column: PINNACLE2 BIPHENYL ID: 4.60 (mm) Cont. Calib. Date(s): 08/25/09

Instrument ID: HPLC1

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

SURROGATE RT FROM CONTINUING CALIBRATION
S1 : 14.01

	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	RT #
01		SEQ-CCV	08/25/09	0142	14.01	
02		SEQ-CCV	08/25/09	0219		
03	9H07003-BLK1	9H07003-BLK1	08/25/09	0256	14.07	
04	YS06-SW70-08	0908035-01	08/25/09	0333	14.04	
05	YS06-SW71-08	0908035-02	08/25/09	0410	14.08	
06	YS06-SW72-08	0908035-03	08/25/09	0447	14.06	
07	YS06-SW69-08	0908035-04	08/25/09	0525	14.10	
08	YS06-SW68-08	0908035-05	08/25/09	0602	14.05	
09	YS06-SW68P-0	0908035-06	08/25/09	0639	13.96	
10	YS06-FB01-08	0908035-07	08/25/09	0716	13.92	
11	YS06-FB02-08	0908035-08	08/25/09	0753	13.91	
12	YS06-EB02-08	0908035-09	08/25/09	0830	13.87	
13	YS06-EB01-08	0908035-10	08/25/09	0907	13.95	
14		SEQ-CCV	08/25/09	0944	13.80	
15		SEQ-CCV	08/25/09	1022		
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

QC LIMITS
S1 = 1-Chloro-3-Nitrobenzen (+/- 1.21 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\082409.b\133V3301.D
Report Date: 26-Aug-2009 10:44

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i
Lab File ID: 133V3301.D
Analysis Type:
Lab Sample ID: SEQ-CCV
Method: \\ELABNSH05\TARGET\chem\hplc1.i\082409.b\8330PII.m

Injection Date: 25-AUG-2009 09:44
Init. Cal. Date(s): 09-APR-2009 25-AUG-2009
Init. Cal. Times: 17:34 00:27
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
1	HMX	43.25491	46.32800	0.010	7.1	15.0	
2	RDX	258	271	0.010	4.8	15.0	
4	3,5-Dinitroaniline	478	475	0.010	-0.8	15.0	
5	Nitrobenzene	1000	1004	0.010	-0.4	15.0	
6	4-Amino-2,6-dinitrotoluene	334	366	0.010	9.5	15.0	
8	2-Amino-4,6-dinitrotoluene	17.93017	19.22100	0.010	7.2	15.0	
9	1,3-Dinitrobenzene	10.37277	11.00400	0.010	6.1	15.0	
10	2-Nitrotoluene	294	314	0.010	6.7	15.0	
12	3-NT/4-NT	301	306	0.010	1.6	15.0	
$ 13	1-Chloro-3-Nitrobenzene	502	531	0.010	5.7	15.0	
14	2,6-Dinitrotoluene	316	304	0.010	-3.8	15.0	
15	1,3,5-Trinitrobenzene	433	462	0.010	6.6	15.0	
16	2,4-Dinitrotoluene	8.04654	8.14600	0.010	1.2	15.0	
17	Tetryl	337	281	0.010	-16.7	15.0	<-L
18	2,4,6-Trinitrotoluene	7.17051	7.85200	0.010	9.5	15.0	

NQ quanted from Cl

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	9H07003-BLK1	116	239*					1
02	9H07003-BS1	118						0
03	9H07003-BSD1	115						0
04	9H07003-BS2	136						0
05	9H07003-BSD2	141						0
06	YS06-SW70-08	109	220*					1
07	YS06-SW71-08	114	226*					1
08	YS06-SW72-08	112	253*					1
09	YS06-SW69-08	110	212*					1
10	YS06-SW68-08	113	234*					1
11	YS06-SW68P-0	114	236*					1
12	YS06-FB01-08	111	278*					1
13	YS06-FB02-08	115	286*					1
14	YS06-EB02-08	102	257*					1
15	YS06-EB01-08	109	269*					1
16	9H10009-BLK1	99	201*					1
17	9H10009-BS1	110						0
18	9H10009-BS2	142						0
19	YS06-SW73-08	119	172*					1
20	9H10009-MS1	73						0
21	9H10009-MSD1	55						0
22	9H10009-MS2	88						0
23	9H10009-MSD2	92						0
24	YS06-SW74-08	105	208*					1
25	YS06-SW74P-0	99	85					0
26	YS06-SW75-08	105	194*					1
27	YS06-EB01-08	100	200*					1
28	YS06-EB02-08	97	1181*					1
29	YS06-SW76-08	121	149*					1
30	YS06-SW77-08	111						0

NQ

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1-Chloro-3-Nitrobenzen	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

K+ in all of quanted on the Pinnacle2 byphenyl column

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	YS06-SW78-08	103	218*					1
02	YS06-EB01-08	102	240*					1
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								

NQ

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1-Chloro-3-Nitrobenzen	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

K+ in all if granted on the Pinnacle 2 biphenyl column

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix Spike - Client Sample No.: YS06-SW73-0809 Lab Sample ID: 0908056-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
HMX	10.00	0.0000	7.702	77*	80-115
RDX	10.00	0.4784	7.594	71	50-160
Nitrobenzene	10.00	0.0000	6.666	67	50-140
1,3-Dinitrobenzene	10.00	0.0000	7.523	75	45-160
1,3,5-Trinitrobenzene	10.00	0.0000	6.933	69	65-140
2,4-Dinitrotoluene	10.00	0.0000	7.530	75	60-135
2,6-Dinitrotoluene	10.00	0.0000	7.300	73	60-135
2,4,6-Trinitrotoluene	10.00	0.0000	8.041	80	50-145
2-Amino-4,6-dinitrotolu	10.00	0.0000	6.441	64	50-155
Tetryl	10.00	0.0000	7.168	72	20-175
4-Amino-2,6-dinitrotolu	10.00	0.0000	7.334	73	55-155
2-Nitrotoluene	10.00	0.0000	6.258	62	45-135
4-Nitrotoluene	10.00	0.2785	6.361	61	50-130
3-Nitrotoluene	10.00	0.0000	5.941	59	50-130

NO

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix Spike - Client Sample No.: YS06-SW73-0809 Lab Sample ID: 0908056-01

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	6.749	67*	13	30	80-115
RDX	10.00	6.522	60	15	30	50-160
Nitrobenzene	10.00	5.429	54	20	30	50-140
1,3-Dinitrobenzene	10.00	6.272	63	18	30	45-160
1,3,5-Trinitrobenzene	10.00	5.833	58*	17	30	65-140
2,4-Dinitrotoluene	10.00	6.252	62	18	30	60-135
2,6-Dinitrotoluene	10.00	6.104	61	18	30	60-135
2,4,6-Trinitrotoluene	10.00	6.822	68	16	30	50-145
2-Amino-4,6-dinitrotolu	10.00	5.406	54	17	30	50-155
Tetryl	10.00	6.241	62	14	30	20-175
4-Amino-2,6-dinitrotolu	10.00	6.141	61	18	30	55-155
2-Nitrotoluene	10.00	5.025	50	22	30	45-135
4-Nitrotoluene	10.00	5.125	51	22	30	50-130
3-Nitrotoluene	10.00	4.670	47*	24	30	50-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 14 outside limits
Spike Recovery: 6 out of 28 outside limits

COMMENTS: _____

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Matrix Spike - Client Sample No.: YS06-SW73-0809 Lab Sample ID: 0908056-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
PETN	100.0	0.0000	73.72	74	60-120
3,5-Dinitroaniline	10.00	0.0000	5.858	58*	60-120

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
PETN	100.0	71.35	71	3	40	60-120
3,5-Dinitroaniline	10.00	5.870	59*	0	40	60-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 3 outside limits
Spike Recovery: 2 out of 6 outside limits

COMMENTS: _____

FORM III EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW70-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-01 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4,6-Trinitrotoluene	1	11.37	10.90	12.16	0.07491	
	2	24.43	22.05	27.01	0.1477	65.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW71-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-02 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Nitrobenzene	1	10.33	9.30	10.34	0.3521	
	2	7.09	6.68	7.84	0.2120	49.7 J
4-Nitrotoluene	1	16.42	16.28	17.60	0.09961	
3-NT/4-NT	2	13.25	11.95	14.63	0.6592	147.5 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW72-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-03 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
HMX	1	3.47	3.18	3.74	0.3587		
	2	2.92	2.78	3.02	0.3392	5.6	
RDX	1	5.39	4.98	5.70	3.097		
	2	3.46	3.25	3.61	3.252	4.9	
2,4,6-Trinitrotoluene	1	11.53	10.90	12.16	0.1079		
	2	24.45	22.05	27.01	0.2644	84.1	J
4-Nitrotoluene	1	16.45	16.28	17.60	0.09500		
3-NT/4-NT	2	13.24	11.95	14.63	0.8961	161.6	J
	1						
	2						
	1						
	2						
	1						
	2						
	1						
	2						

EXPL

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FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW69-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-04 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.18	3.74	0.3251	
	2	2.92	2.78	3.02	0.3329	2.4
RDX	1	5.38	4.98	5.70	3.370	
	2	3.47	3.25	3.61	3.601	6.6
2,4,6-Trinitrotoluene	1	11.57	10.90	12.16	0.4899	
	2	24.65	22.05	27.01	0.5473	11.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

page 1 of 1

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW68-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-05 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4-Nitrotoluene	1	16.45	16.28	17.60	0.09624	
3-NT/4-NT	2	13.23	11.95	14.63	0.7097	152.2 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
1-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-07 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
RDX	1	5.50	4.98	5.70	0.5833		
	2	3.31	3.25	3.61	24.91	190.8	J
Nitrobenzene	1	9.85	9.30	10.34	0.5087		
	2	7.05	6.68	7.84	3.051	142.8	J
1,3-Dinitrobenzene	1	8.61	8.19	9.19	3.258		
	2	10.75	10.39	11.63	0.5554	141.7	J
1,3,5-Trinitrobenzene	1	7.22	6.89	7.73	0.4180		
	2	17.70	16.37	19.11	0.4618	10.0	
2,4-Dinitrotoluene	1	13.87	12.76	14.04	0.3373		
	2	19.67	17.20	21.00	0.3107	8.2	
2,6-Dinitrotoluene	1	13.11	12.38	13.76	0.1672		
	2	14.91	13.38	16.40	0.1563	6.7	
2,4,6-Trinitrotoluene	1	11.51	10.90	12.16	0.2330		
	2	24.16	22.05	27.01	0.3465	39.2	J
2-Nitrotoluene	1	16.44	15.13	16.45	0.2557		
	2	11.59	10.50	12.74	0.5022	65.0	J

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
1-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-07 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
4-Nitrotoluene	1	17.25	16.28	17.60	0.3036	
3-NT/4-NT	2	13.14	11.95	14.63	1.308	124.6 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

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FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
2-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-08 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
RDX	1	5.49	4.98	5.70	0.7284		
	2	3.31	3.25	3.61	27.18	189.6	J
Nitrobenzene	1	9.84	9.30	10.34	0.6370		
	2	7.05	6.68	7.84	3.097	131.8	J
1,3-Dinitrobenzene	1	8.60	8.19	9.19	3.658		
	2	10.67	10.39	11.63	1.029	112.2	J
1,3,5-Trinitrobenzene	1	7.21	6.89	7.73	0.4773		
	2	17.70	16.37	19.11	0.4391	8.3	
2,4-Dinitrotoluene	1	13.87	12.76	14.04	0.4021		
	2	19.34	17.20	21.00	0.1277	103.6	J
2,6-Dinitrotoluene	1	13.12	12.38	13.76	0.2314		
	2	14.90	13.38	16.40	0.1780	26.1	J
2,4,6-Trinitrotoluene	1	11.48	10.90	12.16	0.2508		
	2	24.17	22.05	27.01	0.3916	43.8	J
2-Amino-4,6-dinitrotoluen	1	12.82	11.54	13.06	0.2115		
	2	8.57	7.35	8.83	0.4208	66.2	J

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
2-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-08 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Tetryl	1	9.11	8.96	9.98	0.2440	
	2	19.68	17.40	21.72	0.2197	10.5
3,5-Dinitroaniline	1	9.51	9.00	10.00	0.1073	
	2	6.17	5.57	6.67	0.7249	148.4 J
4-Nitrotoluene	1	17.21	16.28	17.60	0.2522	
3-NT/4-NT	2	13.13	11.95	14.63	1.330	136.2 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-09 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
RDX	1	5.48	4.98	5.70	0.5004		
	2	3.31	3.25	3.61	19.78	190.1	J
Nitrobenzene	1	9.86	9.30	10.34	0.4735		
	2	7.03	6.68	7.84	2.478	135.8	J
1,3-Dinitrobenzene	1	8.62	8.19	9.19	3.017		
	2	10.92	10.39	11.63	0.4620	146.9	J
1,3,5-Trinitrobenzene	1	7.23	6.89	7.73	0.4367		
	2	17.58	16.37	19.11	0.4276	2.1	
2,4-Dinitrotoluene	1	13.89	12.76	14.04	0.3663		
	2	19.28	17.20	21.00	0.1094	108.0	J
2,6-Dinitrotoluene	1	13.15	12.38	13.76	0.2119		
	2	14.87	13.38	16.40	0.1156	58.8	J
2,4,6-Trinitrotoluene	1	11.50	10.90	12.16	0.1957		
	2	24.10	22.05	27.01	0.4585	80.3	J
2-Amino-4,6-dinitrotoluen	1	12.83	11.54	13.06	0.1486		
	2	7.94	7.35	8.83	0.2307	43.3	J

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-09 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Tetryl	1	8.97	8.96	9.98	0.1361	
	2	19.60	17.40	21.72	0.1656	19.6
4-Nitrotoluene	1	17.25	16.28	17.60	0.3913	
3-Nitrotoluene	1	17.82	17.44	18.88	0.1525	
					TOTAL 0.5438	
3-NT/4-NT	2	13.10	11.95	14.63	1.294	81.6 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-10 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.48	4.98	5.70	0.7177	
	2	3.33	3.25	3.61	21.10	186.8 J
Nitrobenzene	1	9.90	9.30	10.34	0.1829	
	2	7.07	6.68	7.84	1.083	142.2 J
1,3-Dinitrobenzene	1	8.61	8.19	9.19	1.324	
	2	11.14	10.39	11.63	0.3604	114.4 J
1,3,5-Trinitrobenzene	1	7.21	6.89	7.73	0.3719	
	2	17.58	16.37	19.11	1.224	106.8 J
2,4-Dinitrotoluene	1	13.86	12.76	14.04	0.2161	
	2	18.30	17.20	21.00	0.1013	72.3 J
2,6-Dinitrotoluene	1	12.98	12.38	13.76	0.1084	
	2	14.93	13.38	16.40	0.1097	1.2
2,4,6-Trinitrotoluene	1	11.50	10.90	12.16	0.1678	
	2	24.23	22.05	27.01	0.3819	77.9 J
2-Amino-4,6-dinitrotoluen	1	12.83	11.54	13.06	0.1238	
	2	8.28	7.35	8.83	0.1253	1.2

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-080409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908035-10 Date(s) Analyzed: 08/11/09 08/25/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Tetryl	1	9.09	8.96	9.98	0.1159	
	2	19.70	17.40	21.72	0.1571	30.2 J
3,5-Dinitroaniline	1	9.55	9.00	10.00	0.2689	
	2	6.19	5.57	6.67	0.6869	87.5 J
4-Nitrotoluene	1	17.21	16.28	17.60	0.2516	
3-Nitrotoluene	1	18.60	17.44	18.88	0.4010	
					TOTAL 0.6526	
3-NT/4-NT	2	13.17	11.95	14.63	1.157	55.7 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW73-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908056-01 Date(s) Analyzed: 08/12/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.33	4.94	5.66	0.4784	
	2	3.48	3.29	3.65	0.3639	27.2 J
4-Nitrotoluene	1	16.06	16.00	17.32	1.966	
3-NT/4-NT	2	13.41	12.17	14.85	0.2785	150.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW74-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908056-02 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.31	4.94	5.66	0.3285	
	2	3.48	3.29	3.65	0.1742	61.4 J
Nitrobenzene	1	10.13	9.17	10.21	0.1739	
	2	7.16	6.79	7.95	0.1469	16.8
2,4,6-Trinitrotoluene	1	11.28	10.74	12.00	0.1030	
	2	24.93	22.36	27.32	0.1374	28.6 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW74P-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908056-03 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Nitrobenzene	1	10.13	9.17	10.21	0.1632	
	2	7.30	6.79	7.95	0.5274	105.5 J
	1					
	2					
	1					
	2					
	1					
	2					
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page 1 of 1

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW75-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908056-04 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
Nitrobenzene	1	10.07	9.17	10.21	0.08690	
	2	7.26	6.79	7.95	0.2622	100.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-080509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908056-05 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.42	4.94	5.66	0.5735	
	2	3.44	3.29	3.65	8.261	174.0 J
Nitrobenzene	1	9.65	9.17	10.21	0.2858	
	2	7.24	6.79	7.95	1.042	113.9 J
1,3-Dinitrobenzene	1	8.45	8.10	9.10	1.036	
	2	10.79	10.53	11.77	0.2923	112.0 J
1,3,5-Trinitrobenzene	1	7.10	6.81	7.65	0.2604	
	2	18.00	16.57	19.31	1.236	130.4 J
2,4-Dinitrotoluene	1	13.51	12.57	13.85	0.1408	
	2	20.36	17.43	21.23	0.2045	36.9 J
2-Nitrotoluene	1	15.96	14.87	16.19	1.306	
	2	11.93	10.70	12.94	0.3393	117.5 J
3,5-Dinitroaniline	1	9.36	8.88	9.88	0.1693	
	2	6.31	5.67	6.77	0.5724	108.7 J
4-Nitrotoluene	1	16.69	16.00	17.32	0.1412	
3-Nitrotoluene	1	18.00	17.13	18.57	0.3627	
					TOTAL 0.5039	
3-NT/4-NT	2	13.50	12.17	14.85	0.8375	49.7 J

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-080509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908056-06 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
RDX	1	5.42	4.94	5.66	0.5404		
	2	3.43	3.29	3.65	7.352	172.6	J
Nitrobenzene	1	9.65	9.17	10.21	0.2527		
	2	7.22	6.79	7.95	0.9905	118.7	J
1,3-Dinitrobenzene	1	8.45	8.10	9.10	0.8529		
	2	11.34	10.53	11.77	0.1464	141.4	J
2,4-Dinitrotoluene	1	13.51	12.57	13.85	0.1563		
	2	19.15	17.43	21.23	0.6343	120.9	J
2,4,6-Trinitrotoluene	1	11.23	10.74	12.00	0.1200		
	2	24.57	22.36	27.32	0.9648	155.8	J
Tetryl	1	9.35	8.83	9.85	0.2079		
	2	21.53	17.75	22.07	0.1188	54.5	J
	1						
	2						
	1						
	2						

EXPL

194

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-SW78-0809

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG006

Lab Sample ID: 0908064-03 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.34	4.94	5.66	0.4538	
	2	3.47	3.29	3.65	0.2047	75.6 J
2-Nitrotoluene	1	16.01	14.87	16.19	1.853	
	2	11.86	10.70	12.94	0.3650	134.2 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

This SDG contains total and dissolved metals and mercury using SW-846 methods and total dissolved solids using standard methods.

HOLDING TIMES

Sampling Date: 8/4, 8/5, 8/6
Received Date: 8/5, 8/6, 8/7
Prep. Dates: no prep – dissolved; 8/27 ICP total; 8/12 dissolved, 8/12 total Hg
Analysis Dates: 8/19-8/25 dissolved, 8/28, 8/31 total ICP; 8/13 dissolved, 8/13 total Hg

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria with the exception of lead and thallium associated with the total metals run dated 8/28 and selenium in the total metals analysis dated 8/31. All Pb results in the 8/28 run required qualification as L/UL up to 2X RL due to low recoveries. All selenium results in the 8/31 run required qualification as L/UL up to 2X RL due to low recoveries. No samples were qualified for Tl due to high CRI recoveries. Please note that some positive results for lead in the total metals analysis were flagged B due to lab blank contamination. ICSA/ICSAB results were acceptable. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

  L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

Blank Contamination and Qualification Summaries

Total Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – total metals	lead	2.351B ug/L	11.755 ug/L	B	MBL
	cadmium	-0.429B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	silver	-0.332B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
ICB/CCB – total metals 8/28 run	nickel	1.9B ug/L	9.5 ug/L	B	MBL
	beryllium	1.5B ug/L	7.5 ug/L	B	MBL
	chromium	0.8B ug/L	4.0 ug/L	B	MBL
ICB/CCB-total metals 8/31 run	chromium	-1.0B ug/L	≤ 10X MDL (6 ug/L)	L/UL	MBL
	beryllium	0.4B ug/L	2.0 ug/L	B	MBL
	antimony	2.0B ug/L	10 ug/L	B	MBL
YS06-FB02-080409	beryllium	0.41B ug/L	2.05 ug/L	B	FBL
YS06-EB02-080409	chromium	0.69B ug/L	3.45 ug/L	B	EBL
	zinc	3.1B ug/L	15.5 ug/L	B	EBL
YS06-EB01-080509	zinc	2.4B ug/L	12 ug/L	B	EBL
YS06-EB01-080609	zinc	2.1b u/gl	10.5 ug/L	B	EBL

Total Metals

Sample ID	analyte	Q Flag	Q Code
YS06-SW74P-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	lead	B	MBL
all field samples	cadmium	L/UL	MBL
all field samples	silver	L/UL	MBL
YS06-SW68P-0809, YS06-SW70-0809, YS06-SW73-0809, YS06-SW74-0809, YS06-SW74P-0809	nickel	B	MBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	beryllium	B	MBL
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW75-0809	chromium	B	MBL
YS06-SW77-0809, YS06-SW78-0809	chromium	L/UL	MBL
YS06- SW77-0809, YS06-SW78-0809	beryllium	B	MBL
YS06- SW77-0809	antimony	B	MBL
YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW76-0809	beryllium	B	FBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809	chromium	B	EBL
YS06-SW68-0809, YS06-SW68P-0809, YS06-SW69-0809, YS06-SW70-0809, YS06-SW71-0809, YS06-SW72-0809, YS06-SW75-0809, YS06-SW78-0809	zinc	B	EBL

Dissolved Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
PBW – dissolved metals	beryllium	0.825B ug/L	4.125 ug/L	B	MBL
	vanadium	0.546B ug/L	2.73 ug/L	B	MBL
ICB/CCB – dissolved metals 8/21 run	chromium	-1.1B ug/L	≤ 10X MDL (6 ug/L)	L/UL	MBL
	nickel	-3.8B ug/L	≤ 10X MDL (11 ug/L)	L/UL	MBL
	silver	-0.4B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	cadmium	0.3B ug/L	1.5 ug/L	B	MBL
ICB/CCB – dissolved metals 8/25 run	lead	-3.1B ug/L	≤ 10X MDL (18 ug/L)	L/UL	MBL
	silver	-0.6B ug/L	≤ 10X MDL (3 ug/L)	L/UL	MBL
	aluminum	69.2B ug/L	346 ug/L	B	MBL
YS06-EB01-080509	zinc	7.5B ug/L	37.5 ug/L	B	EBL
YS06-EB01-080609	zinc	1.2B ug/L	6.0 ug/L	B	EBL

Dissolved Metals

Sample ID	analyte	Q Flag	Q Code
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW73-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	beryllium	B	MBL
YS06-SW69-0809, YS06-SW70-0809	vanadium	B	MBL
all samples except YS06-SW73-0809	nickel	L/UL	MBL
all samples except YS06-SW73-0809	silver	L/UL	MBL
YS06-SW74-0809	cadmium	B	MBL
YS06-SW73-0809	lead	L/UL	MBL
YS06-SW73-0809	silver	L/UL	MBL

Sample ID	analyte	Q Flag	Q Code
YS06-SW73-0809	aluminum	B	MBL
YS06-SW74-0809, YS06-SW74P-0809, YS06-SW73-0809, YS06-SW75-0809, YS06-SW76-0809, YS06-SW77-0809, YS06-SW78-0809	zinc	B	EBL

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MSD pairs analyzed for this SDG exhibited acceptable recoveries for all analytes except aluminum and selenium in the total metals analysis. Therefore, positive results for aluminum and selenium were qualified as biased high K in the total metals field samples. All matrix duplicate reproducibility was acceptable. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

The serial dilution analyses for both the total and dissolved fractions exhibited acceptable %Ds for all analytes except potassium in both and sodium in the total metals analysis. Therefore, potassium was flagged as estimated J/UJ in both the total and dissolved metals field samples and sodium was flagged as estimated J/UJ in all total metals field samples.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Total Metals

Sample ID: YS06-SW68-0809 Duplicate Sample ID: YS06-SW68P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	699	732	5%
calcium	216000	215000	0%
iron	972	1050	8%
magnesium	646000	644000	0%
manganese	116	116	0%
potassium	332000	330000	1%
sodium	4970000	5100000	3%

Comments: no qualifications

Dissolved Metals

Sample ID: YS06-SW68-0809 Duplicate Sample ID: YS06-SW68P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	216000	215000	0%
magnesium	663000	662000	0%
manganese	61.3	47.2	26%
selenium	323000	326000	1%
sodium	5280000	5380000	2%

Comments: J manganese in both

Total Metals

Sample ID: YS06-SW74-0809 Duplicate Sample ID: YS06-SW74P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
aluminum	1380	1240	11%
calcium	206000	203000	1%
iron	2200	1870	16%
magnesium	621000	617000	1%
manganese	148	150	1%
potassium	323000	321000	1%
sodium	4880000	4730000	3%

Comments: no qualifications

Dissolved Metals

Sample ID: YS06-SW74-0809 Duplicate Sample ID: YS06-SW74P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
calcium	216000	217000	0%
magnesium	658000	661000	0%
manganese	89.6	95.5	6%
selenium	320000	325000	2%
sodium	5210000	5540000	6%

Comments: no qualifications

SAMPLE CALCULATION

Dissolved Metals

EPA SAMPLE ID: YS06-SW68-0809
ANALYTE: manganese
CONCENTRATION: 116 ug/L
%Solids – na
50 ml

Raw Data result: 116.2982 ug/L
116.2982 ug/L * 0.05L/0.05L * 1 = 116.3 ug/L

Total Metals

EPA SAMPLE ID: YS06-SW71-0809
ANALYTE: iron
CONCENTRATION: 69.1B ug/L
%Solids – na
50 ml

Raw Data result: 69.11573 ug/L
69.11573 ug/L * 0.05L/0.05L * 1 = 69.12 ug/L

EPA SAMPLE ID: YS06-SW70-0809
PARAMETER: TDS
CONCENTRATION: 242000 mg/L
%Solids – na
10 ul

Raw Data result: 2.4231 g
2.4231g / 0.100ml * 1000mg/1g = 24231 mg/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer J Cleveland **Date:** 10/14/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0908016

The indicated Sample Delivery Group (SDG) consisting of twenty (20) water samples was received into the laboratory information management system (LIMS) on August 5, 6, and 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.2 to 12.9°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared and analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0908016-12 ID YS06-SW73-0809S and YS06-SW73-0809SD were inside control limits for the requested analytes except aluminum and selenium.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0908016-12 ID YS06-SW73-0809D was inside control limits for the requested analytes except lead.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0908016-12 ID YS06-SW73-0809L was performed in accordance with requirements for ICP analysis.

The adjusted sample concentration was inside control limits for the requested analytes except iron and sodium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

Susan W. Bass
Senior Chemist
September 1, 2009

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

8/28 Run

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	228.91	114.5		
Antimony				60.0	61.63	102.7		
Arsenic				10.0	12.16	121.6		
Barium				200.0	203.09	101.5		
Beryllium				5.0	5.49	109.8		
Cadmium				5.0	5.50	110.0		
Calcium				2000.0	2168.62	108.4		
Chromium				10.0	10.67	106.7		
Cobalt				50.0	52.62	105.2		
Copper				25.0	25.45	101.8		
Iron				100.0	111.33	111.3		
Lead				3.0	1.36	0.0		
Magnesium				2000.0	2130.64	106.5		
Manganese				15.0	15.36	102.4		
Mercury	0.2	0.17	85.0					
Nickel				40.0	42.39	106.0		
Potassium				2000.0	1802.11	90.1		
Selenium				5.0	6.11	122.2		
Silver				10.0	10.26	102.6		
Sodium				2000.0	1778.69	88.9		
Thallium				10.0	14.62	146.2		
Vanadium				50.0	52.25	104.5		
Zinc				20.0	19.07	95.4		

45% L/UL up to 20

K+ up to 20

Control Limits: no limits have been established by EPA at this time

YS06-SW73-0809
70
71
72
69
68
68P
FB01-080409
FB02-080409
EB02-080409
EB01-080409

YS06-SW74-0809
74P
75
EB01 080509
EB02 080509
SW76

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

8/31 Run

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Aluminum				200.0	190.00	95.0		
Antimony				60.0	63.55	105.9		
Arsenic				10.0	9.17	91.7		
Barium				200.0	201.84	100.9		
Beryllium				5.0	5.15	103.0		
Cadmium				5.0	5.00	100.0		
Calcium				2000.0	2128.63	106.4		
Chromium				10.0	9.52	95.2		
Cobalt				50.0	50.18	100.4		
Copper				25.0	25.04	100.2		
Iron				100.0	89.76	89.8		
Lead				3.0	3.54	118.0		
Magnesium				2000.0	2049.97	102.5		
Manganese				15.0	14.64	97.6		
Nickel				40.0	40.76	101.9		
Potassium				2000.0	1742.88	87.1		
Selenium				5.0	2.88	0.0		
Silver				10.0	9.59	95.9		
Sodium				2000.0	1925.50	96.3		
Thallium				10.0	9.05	90.5		
Vanadium				50.0	50.52	101.0		
Zinc				20.0	18.61	93.0		

59.8% L/UL up to 10

Control Limits: no limits have been established by EPA at this time

YS06-SW77-0809
SW78
EB01-080609

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	200.0	U	200.000	U	P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Barium	-0.5	B	-0.5	B	200.0	U	200.0	U	-0.482	B	P
Beryllium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	-0.429	B	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	3.0	U	3.0	U	3.0	U	3.0	U	2.351	B	P
Magnesium	5000.0	U	5000.0	U	34.9	B	26.7	B	5000.000	U	P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV
Nickel	40.0	U	40.0	U	40.0	U	1.9	B	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	5.0	U	5.0	U	5.0	U	5.0	U	-0.332	B	P
Sodium	5000.0	U	-161.4	B	5000.0	U	5000.0	U	373.784	B	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P

Y506-SW73-0809 SW73 SW70 71 72 SW69 68 68P

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			200.0	U	200.0	U					P
Antimony			10.0	U	10.0	U					P
Arsenic			10.0	U	10.0	U					P
Barium			200.0	U	200.0	U					P
Beryllium			1.1	B	1.5	B					P
Cadmium			5.0	U	0.4	B					P
Calcium			5000.0	U	50.6	B					P
Chromium			10.0	U	0.8	B					P
Cobalt			5.0	U	5.0	U					P
Copper			5.0	U	5.0	U					P
Iron			100.0	U	100.0	U					P
Lead			3.0	U	3.0	U					P
Magnesium			5000.0	U	29.5	B					P
Manganese			10.0	U	10.0	U					P
Mercury			0.200	U							CV
Nickel			2.7	B	3.1	B					P
Potassium			5000.0	U	5000.0	U					P
Selenium			5.0	U	5.0	U					P
Silver			5.0	U	5.0	U					P
Sodium			-193.0	B	5000.0	U					P
Thallium			10.0	U	10.0	U					P
Vanadium			20.0	U	20.0	U					P
Zinc			20.0	U	20.0	U					P

SW69 68 68P

SW74 74P 75

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U					P
Antimony	10.0	U	2.0	B	10.0	U					P
Arsenic	10.0	U	10.0	U	10.0	U					P
Barium	-0.6	B	200.0	U	200.0	U					P
Beryllium	5.0	U	5.0	U	0.4	B					P
Cadmium	5.0	U	5.0	U	5.0	U					P
Calcium	5000.0	U	5000.0	U	5000.0	U					P
Chromium	-1.0	B	10.0	U	10.0	U					P
Cobalt	5.0	U	5.0	U	5.0	U					P
Copper	5.0	U	5.0	U	5.0	U					P
Iron	100.0	U	100.0	U	100.0	U					P
Lead	3.0	U	3.0	U	3.0	U					P
Magnesium	24.4	B	30.6	B	5000.0	U					P
Manganese	-0.4	B	10.0	U	10.0	U					P
Nickel	40.0	U	40.0	U	40.0	U					P
Potassium	5000.0	U	5000.0	U	5000.0	U					P
Selenium	5.0	U	5.0	U	5.0	U					P
Silver	-0.6	B	-0.5	B	5.0	U					P
Sodium	5000.0	U	5000.0	U	5000.0	U					P
Thallium	10.0	U	10.0	U	10.0	U					P
Vanadium	20.0	U	20.0	U	20.0	U					P
Zinc	20.0	U	20.0	U	20.0	U					P

YS06-SW77
78

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-SW73-0809S

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	4087.2720		1280.6330		2000.00	140.3	N	P
Antimony	75 - 125	574.6269		10.0000	U	500.00	114.9		P
Arsenic	75 - 125	47.6669		5.0497	B	40.00	106.5		P
Barium	75 - 125	2116.6040		30.0466	B	2000.00	104.3		P
Beryllium	75 - 125	49.3367		5.0000	U	50.00	98.7		P
Cadmium	75 - 125	49.4680		5.0000	U	50.00	98.9		P
Chromium	75 - 125	206.9488		2.8093	B	200.00	102.1		P
Cobalt	75 - 125	510.3496		0.9630	B	500.00	101.9		P
Copper	75 - 125	261.2015		2.1342	B	250.00	103.6		P
Iron	75 - 125	2679.8020		1677.4950		1000.00	100.2		P
Lead	75 - 125	21.1799		3.0000	U	20.00	105.9		P
Manganese	75 - 125	645.0754		137.9703		500.00	101.4		P
Mercury	75 - 125	0.9700		0.2000	U	1.00	97.0		CV
Nickel	75 - 125	494.4785		1.9671	B	500.00	98.5		P
Selenium	75 - 125	13.0244		5.0000	U	10.00	130.2	N	P
Silver	75 - 125	53.1050		1.1005	B	50.00	104.0		P
Thallium	75 - 125	50.3927		10.0000	U	50.00	100.8		P
Vanadium	75 - 125	524.9342		6.6224	B	500.00	103.7		P
Zinc	75 - 125	570.7282		22.2944		500.00	109.7		P

K+

NO - MSD OF K+

xlcom JAC 101209

Comments:

SW846 - METALS

5A

SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-SW73-0809SD

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75 - 125	3964.8670		1280.6330		2000.00	134.2	N	P
Antimony	75 - 125	570.2300		10.0000	U	500.00	114.0		P
Arsenic	75 - 125	48.7272		5.0497	B	40.00	109.2		P
Barium	75 - 125	2095.5910		30.0466	B	2000.00	103.3		P
Beryllium	75 - 125	48.8519		5.0000	U	50.00	97.7		P
Cadmium	75 - 125	49.2049		5.0000	U	50.00	98.4		P
Chromium	75 - 125	205.0354		2.8093	B	200.00	101.1		P
Cobalt	75 - 125	504.8925		0.9630	B	500.00	100.8		P
Copper	75 - 125	259.3802		2.1342	B	250.00	102.9		P
Iron	75 - 125	2637.1500		1677.4950		1000.00	96.0		P
Lead	75 - 125	21.2960		3.0000	U	20.00	106.5		P
Manganese	75 - 125	639.0743		137.9703		500.00	100.2		P
Mercury	75 - 125	0.9090		0.2000	U	1.00	90.9		CV
Nickel	75 - 125	488.8685		1.9671	B	500.00	97.4		P
Selenium	75 - 125	12.3649		5.0000	U	10.00	123.6		P
Silver	75 - 125	52.9614		1.1005	B	50.00	103.7		P
Thallium	75 - 125	47.6643		10.0000	U	50.00	95.3		P
Vanadium	75 - 125	519.5053		6.6224	B	500.00	102.6		P
Zinc	75 - 125	564.1310		22.2944		500.00	108.4		P

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS06-SW73-0809A

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		1835.23		1280.63		400.0	138.6		P
Selenium		12.06		5.00	U	10.0	120.6		P

Comments:

SW846 - METALS

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS06-SW73-0809L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908016

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	1280.63		1271.21		0.7		P
Antimony	10.00	U	50.00	U			P
Arsenic	5.05	B	50.00	U	100.0		P
Barium	30.05	B	28.23	B	6.1		P
Beryllium	5.00	U	1.94	B	100.0		P
Cadmium	5.00	U	25.00	U			P
Calcium	218384.80		218888.00		0.2		P
Chromium	2.81	B	50.00	U	100.0		P
Cobalt	0.96	B	25.00	U	100.0		P
Copper	2.13	B	25.00	U	100.0		P
Iron	1677.50		1377.88		17.9	E	P
Lead	3.00	U	15.00	U			P
Magnesium	647328.12		683584.50		5.6		P
Manganese	137.97		134.71		2.4		P
Mercury	0.20	U	1.00	U			CV
Nickel	1.97	B	200.00	U	100.0		P
Potassium	326621.18		295413.50		9.6		P
Selenium	5.00	U	25.00	U			P
Silver	1.10	B	25.00	U	100.0		P
Sodium	5127427.84		3003716.00		41.4	E	P
Thallium	10.00	U	50.00	U			P
Vanadium	6.62	B	4.49	B	32.2		P
Zinc	22.29		24.02	B	7.8		P

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0908017

The indicated Sample Delivery Group (SDG) consisting of sixteen (16) dissolved water samples was received into the laboratory information management system (LIMS) on August 5, 6, and 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the samples upon receipt was 0.2 to 12.9°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The samples were prepared and analyzed in accordance with SW846 methodology for the requested TAL dissolved metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW & LCSW) was found to be within acceptable ranges and the field samples were analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

The sample matrix spikes, CCN = 0908017-08 ID YS06-SW73-0809S and YS06-SW73-0809SD were inside control limits for the requested analytes.

Control limits for matrix spikes recoveries are set at 75% to 125% of the analyte quantity added unless original sample concentrations exceed the true values of these "spikes" by a factor of four or more. In this case, affected analytes are not flagged even if recoveries are outside percentage recovery control limits.

The sample matrix duplicate, CCN = 0908017-08 ID YS06-SW73-0809D was inside control limits for the requested analytes.

CLP control limits for duplicate determinations are +/- 20% Relative Percent Difference (RPD) for concentrations greater than or equal to five times the CRDL in both the original and duplicate samples, and +/- the CRDL for concentrations less than five times the CRDL. The RPD is not calculated if both the original and duplicate values fall below the IDL.

A five-fold serial dilution of sample, CCN = 0908017-08 ID YS06-SW73-0809L was performed in accordance with requirements for ICP analysis.

The adjusted sample concentration was inside control limits for the requested analytes except potassium.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

Susan W. Bass
Senior Chemist
August 27, 2009

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Preparation Blank Matrix (soil/water): WATER 8/19-8/2

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	49.1	B	44.4	B	200.000	U	P
Antimony	10.0	U	10.0	U	2.7	B	2.2	B	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Barium	200.0	U	200.0	U	200.0	U	200.0	U	-0.459	B	P
Beryllium	5.0	U	5.0	U	0.6	B	1.2	B	0.825	B	P
Cadmium	5.0	U	0.3	B	0.5	B	0.5	B	5.000	U	P
Calcium	5000.0	U	5000.0	U	70.0	B	5000.0	U	5000.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	0.7	B	0.6	B	5.000	U	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Magnesium	5000.0	U	5000.0	U	58.7	B	30.4	B	5000.000	U	P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U	-0.397	B	P
Mercury	0.200	U	0.200	U	0.200	U	0.200	U	0.200	U	CV
Nickel	40.0	U	40.0	U	40.0	U	40.0	U	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	0.6	B	5.0	U	0.4	B	5.0	U	5.000	U	P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	0.6	B	0.6	B	0.546	B	P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P

NQ

NQ

no Silver flags

none assoc. Sodium only for ICBs CCBs

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L 8/21 Run

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	200.0	U			P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U			P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U			P
Barium	-0.4	B	-0.4	B	200.0	U	-0.4	B			P
Beryllium	5.0	U	5.0	U	5.0	U	5.0	U			P
Cadmium	5.0	U	5.0	U	0.3	B	5.0	U			P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Chromium	10.0	U	-1.1	B	-0.6	B	-0.8	B			P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U			P
Copper	5.0	U	5.0	U	5.0	U	5.0	U			P
Iron	100.0	U	100.0	U	100.0	U	100.0	U			P
Lead	3.0	U	3.0	U	3.0	U	3.0	U			P
Magnesium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Manganese	10.0	U	-0.4	B	10.0	U	-0.4	B			P
Nickel	40.0	U	-3.8	B	-3.2	B	-3.8	B			P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U			P
Silver	5.0	U	-0.4	B	5.0	U	-0.4	B			P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Thallium	10.0	U	10.0	U	10.0	U	3.8	B			P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U			P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U			P

SW 70 71 72 — 69 68 68P 74 74P 75 76 77 — 78

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum			200.0	U							P
Antimony			10.0	U							P
Arsenic			10.0	U							P
Barium			200.0	U							P
Beryllium			0.7	B							P
Cadmium			0.3	B							P
Calcium			5000.0	U							P
Chromium			-0.7	B							P
Cobalt			5.0	U							P
Copper			5.0	U							P
Iron			100.0	U							P
Lead			3.0	U							P
Magnesium			24.8	B							P
Manganese			10.0	U							P
Nickel			-3.7	B							P
Potassium			5000.0	U							P
Selenium			5.0	U							P
Silver			5.0	U							P
Sodium			5000.0	U							P
Thallium			10.0	U							P
Vanadium			20.0	U							P
Zinc			20.0	U							P

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SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

8/25 Run

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	52.0	B	69.2	B			P
Antimony	10.0	U	10.0	U	10.0	U	10.0	U			P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U			P
Barium	-0.4	B	-0.6	B	200.0	U	200.0	U			P
Beryllium	5.0	U	5.0	U	0.7	B	1.1	B	See MBL		P
Cadmium	5.0	U	5.0	U	5.0	U	0.3	B	NQ		P
Calcium	44.3	B	5000.0	U	60.5	B	70.6	B	NQ		P
Chromium	0.9	B	10.0	U	10.0	U	0.8	B	NQ		P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U			P
Copper	5.0	U	5.0	U	5.0	U	5.0	U			P
Iron	100.0	U	100.0	U	100.0	U	100.0	U			P
Lead	3.0	U	3.0	U	-2.9	B	-3.1		UL		P
Magnesium	5000.0	U	5000.0	U	36.8	B	46.8	B	NQ		P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U			P
Nickel	2.8	B	40.0	U	1.5	B	1.3	B	NQ		P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U			P
Silver	5.0	U	-0.5	B	5.0	U	-0.6	B	UL		P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U			P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U			P
Vanadium	20.0	U	20.0	U	20.0	U	0.7	B	NQ		P
Zinc	20.0	U	20.0	U	20.0	U	20.0	U			P

SW7B

9

ICP SERIAL DILUTIONS

SAMPLE NO.

YS06-SW73-0809L

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908017

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Difference	Q	M
Aluminum	66.63	B	258.70	B	288.3		P
Antimony	10.00	U	50.00	U			P
Arsenic	6.89	B	50.00	U	100.0		P
Barium	25.78	B	24.54	B	4.8		P
Beryllium	0.92	B	4.39	B	377.2		P
Cadmium	5.00	U	25.00	U			P
Calcium	219565.80		221159.80		0.7		P
Chromium	10.00	U	50.00	U			P
Cobalt	5.00	U	25.00	U			P
Copper	5.00	U	25.00	U			P
Iron	63.01	B	500.00	U	100.0		P
Lead	3.00	U	15.00	U			P
Magnesium	652503.88		667343.00		2.3		P
Manganese	45.44		44.84	B	1.3		P
Mercury	0.20	U	1.00	U			CV
Nickel	40.00	U	7.78	B	100.0		P
Potassium	318066.82		277418.70		12.8	E	P
Selenium	5.00	U	25.00	U			P
Silver	5.00	U	25.00	U			P
Sodium	5274057.92		5436577.00		3.1		P
Thallium	10.00	U	50.00	U			P
Vanadium	3.81	B	6.17	B	61.9		P
Zinc	5.13	B	23.04	B	349.1		P

CompuChem
A Division Of
Liberty Analytical Corp.

SDG NARRATIVE
SDG # 0908016

The 15 water samples were received intact, refrigerated with proper documentation, in sealed shipping containers, on August 5th, 6th and 7th, 2009. The samples were scheduled for the requested analysis of the Wet Chemistry fraction. The samples were analyzed, in accordance with current EPA methods, for the analytes requested as per the COC, with the exceptions and/or additions requested by the client.

SAMPLE IDs:
The cover page contained in this package lists the client ID's and the associated CompuChem numbers which are part of this SDG.

SAMPLE PREPARATION QUALITY CONTROL:
The sample preparation procedure verifications (LCS & Blank) were found to be within acceptable ranges and all field samples were prepared and analyzed within the contract specified holding times.

MATRIX RELATED QUALITY CONTROL:
YS06-SW73-0809 (0908016-12) was used as the original to prepare the duplicate. The associated duplicate was found to be inside control limits.

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the electronic data deliverable has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Joseph Mohn
Wet Chemistry Supervisor
August 13th, 2009

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 13, 2009
SDG # 0908039 & SDG007, CompuChem & Empirical
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0908039 & SDG007. The data validation was performed in accordance with the SW-846 methods 8260B for volatiles, 8330 for explosives plus PETN & 3, 5-dinitroaniline, 6010B & 7470A for total metals and the Lloyd Kahn method for TOC. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, and to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	VOA	TMetals	EXP
YS06-EB02-080609	0908039-01	water	X	X	X

This SDG consisted of one equipment blank.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- GC/MS Tuning *
- HPCL Performance *
- Initial/Continuing Calibrations
- CRI Standards *
- Interference Check Sample *
- Blanks *
- Internal Standards *

- Surrogates *
- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Post Digestion Spike Recoveries NA
- Serial Dilutions NA
- Field Duplicates NA
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

The initial and continuing calibrations exhibited low RRF values that required some non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

The initial and continuing calibrations exhibited low RRF values that required positive values be estimated.

Explosives

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

All results reported with a P flag to indicate high column quantitation RPDs were flagged as estimated J.

Total Metals

All results reported with a B flag to indicate a result between the MDL and the reporting limit were flagged as estimated J.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 8/6/09 and samples were received at the laboratory 8/7/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 8/07/09	2-butanone	0.0434	all samples	L/R	ICL
CC 08/11/09	acetone	0.0169	all samples	L/R	CCL

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D or %Drift	Samples	Q Flag	Q Code
8/13/09, 03:35	tetryl*	-19.2	YS06-EB02-080609	J/UJ	CCL
	1,3-dinitrobenzene*	18.9		J	CCH

*tetryl & 1, 3-dinitrobenzene in this sample was flagged J due to high column quantitation %Ds with a 2C qualification code

Identification/Quantitation

Explosives

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Total Metals

Positive results reported with a B flag were qualified as estimated J because the results are between the MDL and the RL. This qualification doesn't require as qualification code.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff
President

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

VOA

Sample ID	Compound	Results	Q Flag	Q code
all samples	2-butanone	+/-	L/R	ICL
all samples	acetone	+/-	LR	CCL

Explosives

Sample ID	Compound	Results	Q Flag	Q code
YS06-EB02-080609	tetryl*	+/-	J/UJ	CCL
	1,3-dinitrobenzene*	+	J	CCH
all samples	all compounds	+P	J	2C

*these compounds were flagged J due to column quantitation %Ds greater than 40% with a 2C qualifier code

Metals

Sample ID	Analyte	Results	Q Flag	Q code
all samples	all analytes	+B	J	

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-080609

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Matrix: (soil/water) WATER Lab Sample ID: 0908039-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908039-0169

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	5.2	LCCL
79-20-9	Methyl acetate	0.25	J
75-09-2	Methylene Chloride	0.89	
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	27	LICL
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.50	U
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

WM 100609

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-080609

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Matrix: (soil/water) WATER Lab Sample ID: 0908039-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0908039-0169

Level: (low/med) LOW Date Received: 08/07/09

% Moisture: not dec. _____ Date Analyzed: 08/11/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	U
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-080609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG007

Matrix: (soil/water) WATER Lab Sample ID: 0908065-01

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 022V2201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 08/06/09 14:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:08/10/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 08/13/09 07:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.38		U
121-82-4	RDX	0.077	0.38	0.34	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.085	0.38	0.10	~~JP~~ J 2C
99-65-0	1,3-Dinitrobenzene	0.077	0.38	1.2	~~P~~ J 2C
99-35-4	1,3,5-Trinitrobenzene	0.077	0.38		U
121-14-2	2,4-Dinitrotoluene	0.10	0.38	0.17	~~JP~~ J 2C
606-20-2	2,6-Dinitrotoluene	0.10	0.38		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.38		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.38	0.13	~~JP~~ J 2
479-45-8	Tetryl	0.077	0.38	0.15	~~JPM~~ J 2C
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.38		U
88-72-2	2-Nitrotoluene	0.077	0.38	0.29	J
99-99-0	4-Nitrotoluene	0.077	0.38	0.13	~~JP~~ J 2C
99-08-1	3-Nitrotoluene	0.12	0.38	0.25	~~JP~~ J 2C
78-11-5	PETN	1.2	1.9		U
618-87-1	3,5-Dinitroaniline	0.077	0.38		U

JAC 10809

SW846 - METALS

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

YS06-EB02-080609

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Matrix (soil/water): WATER Lab Sample ID: 0908039-01

Level (low/med): LOW Date Received: 8/7/2009

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	36.6	~~B~~	J	P
7440-36-0	Antimony	10.0	U		P
7440-38-2	Arsenic	10.0	U		P
7440-39-3	Barium	200	U		P
7440-41-7	Beryllium	5.0	U		P
7440-43-9	Cadmium	5.0	U		P
7440-70-2	Calcium	5000	U		P
7440-47-3	Chromium	10.0	U		P
7440-48-4	Cobalt	5.0	U		P
7440-50-8	Copper	5.0	U		P
7439-89-6	Iron	100	U		P
7439-92-1	Lead	3.0	U		P
7439-95-4	Magnesium	5000	U		P
7439-96-5	Manganese	10.0	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	40.0	U		P
7440-09-7	Potassium	5000	U		P
7782-49-2	Selenium	5.0	U		P
7440-22-4	Silver	5.0	U		P
7440-23-5	Sodium	5000	U		P
7440-28-0	Thallium	10.0	U		P
7440-62-2	Vanadium	20.0	U		P
7440-66-6	Zinc	6.1	~~B~~	J	P

JAC 10909

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

CTO-166

CompuChem
a division of Liberty Analytical Corp.

CHAIN OF CUSTODY

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

№ 03932

Page 1 of 1

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information

Company Name: CH2M HILL
Address: 5700 Cleveland St. Ste 101
City: VA Beach State: VA Zip: 23462
Project Contact: Rebekka Shaw
Phone #: (757) 671-8311
Sampler's Name: P. Murphy

Project Information

Project Name: CTO-166
Sampling Location: Yorktown NWS Site 6
Turnaround Time: PER CONTRACT
Batch QC or Project Specific? If Specific, which Sample ID?
Are aqueous samples field filtered for metals? Y or N
Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices
GW - Ground water
WW - Waste water
SW - Surface water
SO - Soil/Sediment
TB - Trip Blank
RI - Rinsate
WP - Wipe
O - Other

Lab ID	Field ID	Collection Date	Collection Time	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3	Metals ILM05.3 100DM	FMetals ILM05.3 100DM	Explo / PETN / 3,5 DNA 8330 AL	TDS 160.1	Metals, pH, TOC, Alkalinity 8272	AVS / SEM 7 Metals 4072	Grain size D422 8072	EXPL / AVS-SEM	
0908016-01 0908017-13	YS06-SW76-0809	8/6/09	1120	SW	8	3		2				3	1	1	2	1				0908036-17	<2 <2
0908015-11 0908035-09	YS06-SD76-0809		1030	SO	8							3			1		1	1	2	0908034-11 0908035-11	
0908016-20 0908017-14	YS06-SW77-0809		1045	SW	8	3		2				3	1	1	2	1				0908036-18	<2 <2
0908015-12 0908033-10	YS06-SD77-0809		1050	SO	8							3			1		1	1	2	0908034-12 0908035-12	
0908016-21 0908017-15	YS06-SW78-0809		1145	SW	8	3		2				3	1	1	2	1				0908036-19	<2 <2
0908015-13 0908033-11	YS06-SD78-0809		1155	SO	8							3			1		1	1	2	0908034-13 0908035-13	
0908016-22 0908017-16	YS06-EB01-080609		1400	AQ	8	3		2				3	1	1	2	1				0908036-20	<2 <2
0908039-01 0908040-01	YS06-EB02-080609		1430	AQ	6	3		1				3	1		2					0908042-01	<2
0908016-23	YS06-TB01-080609	↓	1445	TB	3	3															

Residual Chlorine Present?
Yes ____ No ✓

Lab Use Only

Sample Unpacked By: [signature]
Sample Order Entry By: [signature]
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or N/A
625 & Phenol samples checked for chlorine? Y or N/A
608 samples checked for pH between 5.0-9.0? Y or N/A

Comments

EB01=SW EB02=SD

Sample Custody

Relinquished by: [signature]	Date/Time: 8/6/09 1730	Received by: [signature]	Date/Time: 8/7/09 0915
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? (Y) or N If yes, where? PETN + 3,5-DNA + EXPL to Empirical
Custody Seal(s) intact? (Y) or N
On Ice? (Y) or N
Cooler Temp: 2.1, 2.1, 1.3 °C

GRAINSIZE to CT LABS
AVS/SEM to CAS

Samples stored 30 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

012

DOD CRITERIA "SDG '1" (H2O)s 0908042 13349 013

please leave open

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 Yorktown	Samples shipped to: Empirical	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 Calendar day	Contact: Janice Schilling	Phone: (919) 379-4100 X 4089
Report style: level IV	Address: 621 Mainstream Drive, ste 270	Fax: (919) 379-4050
Disk requirement:	Nashville TN 37228	Sampling complete? Y or (N) (see Note 1)
	Phone: (615) 345 1115 x 232	Project-specific (PS) or Batch (B) QC?
	Project Locale (state) VA	

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_4 + Ice
E. Unpreserved
F. Ice Only
G. Other
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP T- TCLP
S - SW-846
W- CWA 600-series
O- Other

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL 8330+PETN 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-EB02-080609	8/6	1430	4	F	U			2		✓	0908065-01	

DB 8/7/09

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) DK-Surbs	Date: 8/7/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1445	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 8/8	#2 Received by:(sig)	Date: 8/8/09
Company Name:	Time:	Company Name:	Time: 8:30	Company Name:	Time: 08:30

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

3,1°C

Revision 0 2-10-99

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0908065 Number of Coolers: 1 of 1

Client: Cornerstone Project: Yard town

Date/Time Received: 8/8/09 8:30 Date cooler(s) opened: 8/8/09

Opened By (print): [illegible] (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: (FedEx) UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8422

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.1

Dates samples were logged-in: 8/10/09

9. Initial this form to acknowledge login of sample(s): (Name): **WILLIAM SCHWAB** (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was residual chlorine present in any applicable sample containers?	Yes	No	(N/A)
17. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
18. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____ CAR#: _____

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 8/6/09
Received Date: 8/7/09
Analysis Dates: 8/11/09

Cooler Temps: 1.2-2.1°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF values, see attached Form VI and Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks-no qualifications were required as only associated sample was QC blank.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

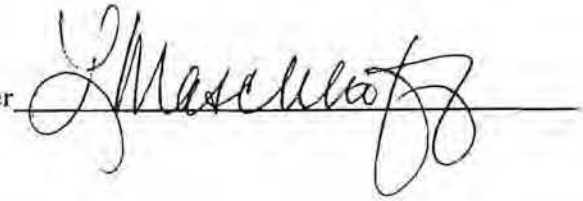
A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer  **Date:** 10/6/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Lab File ID: 9H11004-TUN169 BFB Injection Date: 08/11/09

Instrument ID: 5972HP69 BFB Injection Time: 1005

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.2
75	30.0 - 60.0% of mass 95	51.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	93.5
175	5.0 - 9.0% of mass 174	6.8 (7.2)1
176	95.0 - 101.0% of mass 174	92.3 (98.7)1
177	5.0 - 9.0% of mass 176	6.1 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9H11004-CCV	9H11004-CCV169	08/11/09	1031
02	VBLKGM	9081111-BLK	9081111-BLK169	08/11/09	1111
03	VGMLCS	9081111-BS1	9081111-BS169	08/11/09	1154
04	VGMLCSD	9081111-BSD	9081111-BSD169	08/11/09	1223
05	YS06-EB02-080609	0908039-01	0908039-0169	08/11/09	1738
06					
07					
08					
09					
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12					
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14					
15					
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17					
18					
19					
20					
21					
22					

FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Instrument ID: 5972HP69 Calibration Date: 08/11/09 Time: 1031

Lab File ID: 9H11004-CCV169 Init. Calib. Date(s): 08/07/09 08/07/09

Init. Calib. Times: 1108 1636

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.6474700	0.6109015	0.6109015	0.001	-5.65	90.00	AVRG	
Chloromethane	0.3812300	0.3572808	0.3572808	0.1	-6.28	90.00	AVRG	
Vinyl Chloride	0.3344900	0.3413719	0.3413719	0.001	2.06	20.00	AVRG	
Bromomethane	98.990337	125.00000	0.1107927	0.001	-20.81	90.00	LINR	
Chloroethane	146.66435	125.00000	0.1580348	0.001	17.33	90.00	LINR	
Trichlorofluoromethane	0.8150000	0.8424097	0.8424097	0.001	3.36	90.00	AVRG	
1,1-Dichloroethene	0.3070200	0.2900588	0.2900588	0.001	-5.52	20.00	AVRG	
Carbon disulfide	1.1277200	1.4665302	1.4665302	0.001	30.04	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	117.20346	125.00000	0.2054805	0.001	-6.24	90.00	LINR	
Acetone	332.56954	625.00000	0.0169845	0.001	-46.79	90.00	LINR	L/R
Methyl acetate	0.1861400	0.1375889	0.1375889	0.001	-26.08	90.00	AVRG	
Methylene Chloride	0.2744800	0.3251034	0.3251034	0.001	18.44	90.00	AVRG	
ans-1,2-Dichloroethene	0.3137800	0.3748177	0.3748177	0.001	19.45	90.00	AVRG	
hyl-tert-butyl ether	0.5305600	0.6183984	0.6183984	0.001	16.56	90.00	AVRG	
1,1-Dichloroethane	0.5912700	0.7006341	0.7006341	0.1	18.50	90.00	AVRG	
cis-1,2-Dichloroethene	0.3212600	0.3498194	0.3498194	0.001	8.89	90.00	AVRG	
2-butanone	0.0434400	0.0481146	0.0481146	0.001	10.76	90.00	AVRG	L/R
Chloroform	0.6390600	0.7138192	0.7138192	0.001	11.70	20.00	AVRG	
1,1,1-Trichloroethane	0.6251100	0.6923425	0.6923425	0.001	10.76	90.00	AVRG	
Carbon Tetrachloride	0.5457400	0.6100234	0.6100234	0.001	11.78	90.00	AVRG	
Benzene	1.1730600	1.3105742	1.3105742	0.001	11.72	90.00	AVRG	
1,2-Dichloroethane	0.3542200	0.3922358	0.3922358	0.001	10.73	90.00	AVRG	
Trichloroethene	0.3415300	0.3705754	0.3705754	0.001	8.50	90.00	AVRG	
1,2-Dichloropropane	0.2446600	0.2757209	0.2757209	0.001	12.70	20.00	AVRG	
Bromodichloromethane	0.4121300	0.4615395	0.4615395	0.001	11.99	90.00	AVRG	
cis-1,3-Dichloropropene	0.3364700	0.3726140	0.3726140	0.001	10.74	90.00	AVRG	
4-Methyl-2-pentanone	0.1578600	0.1744947	0.1744947	0.001	10.54	90.00	AVRG	
Toluene	1.0379700	1.1201317	1.1201317	0.001	7.92	20.00	AVRG	
trans-1,3-Dichloropropene	0.4341600	0.4685218	0.4685218	0.001	7.91	90.00	AVRG	
1,1,2-Trichloroethane	0.2092200	0.2369256	0.2369256	0.001	13.24	90.00	AVRG	
Tetrachloroethene	140.23707	125.00000	0.4683466	0.001	12.19	90.00	LINR	
2-hexanone	0.1039000	0.1157852	0.1157852	0.001	11.44	90.00	AVRG	
Dibromochloromethane	0.3483100	0.3807258	0.3807258	0.001	9.31	90.00	AVRG	
1,2-Dibromoethane	0.2059200	0.2308194	0.2308194	0.001	12.09	90.00	AVRG	
Chlorobenzene	1.0592900	1.1635663	1.1635663	0.3	9.84	90.00	AVRG	
Ethylbenzene	0.5694800	0.6249424	0.6249424	0.001	9.74	20.00	AVRG	
m,p-Xylene	0.7281100	0.7892302	0.7892302	0.001	8.39	90.00	AVRG	
o-Xylene	0.6809900	0.7252411	0.7252411	0.001	6.50	90.00	AVRG	
Styrene	0.9890100	1.1286328	1.1286328	0.001	14.12	90.00	AVRG	
Bromoform	0.1939000	0.2061389	0.2061389	0.1	6.31	90.00	AVRG	
Isopropyl Benzene	136.98051	125.00000	2.0497437	0.001	9.58	90.00	LINR	
1,1,2,2-Tetrachloroethane	0.4710800	0.5167846	0.5167846	0.3	9.70	90.00	AVRG	

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Instrument ID: 5972HP69 Calibration Date: 08/11/09 Time: 1031

Lab File ID: 9H11004-CCV169 Init. Calib. Date(s): 08/07/09 08/07/09

Init. Calib. Times: 1108 1636

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
1,3-Dichlorobenzene	1.7608200	1.9353939	1.9353939	0.001	9.91	90.00	AVRG
1,4-Dichlorobenzene	1.7302900	1.8437252	1.8437252	0.001	6.56	90.00	AVRG
1,2-Dichlorobenzene	1.4187600	1.5238216	1.5238216	0.001	7.40	90.00	AVRG
1,2-Dibromo-3-Chloropropane	130.94828	125.00000	0.0816633	0.001	4.76	90.00	LINR
1,2,4-Trichlorobenzene	129.29523	125.00000	1.1373543	0.001	3.44	90.00	LINR
1,2-Dichloroethene (total)	0.3175200	0.3623185	0.3623185	0.001	14.11	90.00	AVRG
Xylene (total)	0.6809900	0.7252411	0.7252411	0.001	6.50	90.00	AVRG
Cyclohexane	146.32587	125.00000	0.4757061	0.001	17.06	90.00	LINR
Methylcyclohexane	150.56432	125.00000	0.5352738	0.001	20.45	90.00	LINR
Dibromofluoromethane	0.3215300	0.2852394	0.2852394	0.001	-11.29	90.00	AVRG
1,2-Dichloroethane-d4	118.76461	125.00000	0.2515961	0.001	-4.99	90.00	LINR
ıene-d8	111.90047	125.00000	1.3770377	0.001	-10.48	90.00	LINR
.nofluorobenzene	115.45385	125.00000	0.9783787	0.001	-7.64	90.00	LINR

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0908039
PROTOCOL: SW-846

SAMPLE IDENTIFICATION: YS06-EB02-080609

The 1 aqueous sample listed above was received intact, refrigerated at 1.2C, 1.3C, and 2.1C, with proper documentation, in sealed shipping containers, on August 7, 2009. The sample was scheduled for the requested analysis of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0908039 are included in the sample data sections.

Analysis holding time requirements were met for the sample. The pH value of the sample was equal to 1. There were volatile Project/Target Compound List (TCL) analytes above the Contract Required Quantitation Limit (CRQL) identified in the sample. All of the system monitoring compounds met recovery criteria in the analysis of the sample. All of the internal standards met response and retention time criteria in the analysis of the sample.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on initial calibration file 9H07004-CAL2R69. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blank met all quality control criteria. The associated Laboratory Control Sample (VGMLCS/VGMLCSD) failed percent RPD for Acetone, but met the percent recovery criteria for all compounds. No matrix spike/matrix spike duplicate (MS/MSD) sample was requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Preeti Khare
Analyst II
August 18, 2009

Holding Times

Sampling Date: 8/6
Received Date: 8/8
Extraction Dates: 8/10
Analysis Dates: 8/13

Sample receipt documentation was in order. Cooler temps were acceptable.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

This SDG consisted of one rinse blank.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code

Sample ID	Compound	Q Flag	Q Code

SURROGATE RECOVERIES

All surrogate recovery criteria were met on column 1. The sample recoveries on C2 were high. The only positive results were quanted from column 1 so the sample data was not qualified due to high surrogate recoveries.

MATRIX SPIKE PAIR SUMMARY

There was no MS/MSD pair. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compounds in the LCS and/or the LCSD. RPDs were OK. No qualifications were required

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: none Duplicate ID:

Compound	Sample Conc.	Duplicate Conc.	RPD
nitrobenzene			#DIV/0!
1,3-dinitrobenzene			#DIV/0!
4-nitrotoluene			#DIV/0!

Comments: No qualifications were required.

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J.

Reviewer: A Cleveland Date: 10 10 09

ORGANIC CASE NARRATIVE – Explosives
CH2M Hill, Inc. - YORKTOWN_NWS
SDG: SDG007/ CTO166
Workorder: 0908065

Sampled	Rec'd	Lab ID	Client ID
8/6/2009	8/8/2009	0908065-01	YS06-EB02-080609

Method: The samples were analyzed by USEPA SW-846 Method 8330A (solid phase extraction followed by packed column HPLC) for waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: All CCVs were within 20% difference.
- Blank Results: No target analytes were detected in the method blanks.
- Surrogate Recoveries: All C-18 column recoveries were within limits. Recoveries on the RP column exceeded limits with a positive bias. With the exception of 1,3-dinitrobenzene, reported concentrations were less than the quantitation limit and qualified as estimated.
- LCS Results: All recoveries were within limits.
- MS/MSD Results: Not applicable
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

FORM 8
EXPL ANALYTICAL SEQUENCE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG007

Column: ULTRA C-18 ID: 4.60 (mm) Cont. Calib. Date(s): 08/12/09-08/13/09

Instrument ID: HPLC2

THE ANALYTICAL SEQUENCE OF PERFORMANCE BLANKS, AND SAMPLES GIVEN BELOW:

	SURROGATE RT FROM CONTINUING CALIBRATION S1 : 21.22					
	CLIENT SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	RT #
01		SEQ-CCV	08/12/09	1849	21.22	6.88
02		SEQ-CCV	08/12/09	1934		
03	9H10009-BLK1	9H10009-BLK1	08/12/09	2009	21.22	
04	9H10009-BS1	9H10009-BS1	08/12/09	2043	21.21	
05	9H10009-BS2	9H10009-BS2	08/12/09	2118	21.19	
06		SEQ-CCV	08/13/09	0335	21.17	6.88
07		SEQ-CCV	08/13/09	0410		
08	YS06-EB02-08	0908065-01	08/13/09	0702	21.07	
09		SEQ-CCV	08/13/09	0736	21.05	6.85
10		SEQ-CCV	08/13/09	0810		
11						
12						
13						
14						
15						
16						
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18						
19						
20						
21						
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32						

QC LIMITS
S1 = 1-Chloro-3-Nitrobenzen (+/- 0.50 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits.

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\016V1601.D
Report Date: 17-Aug-2009 14:48

JLS 8.17.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 13-AUG-2009 03:35
Lab File ID: 016V1601.D Init. Cal. Date(s): 14-MAY-2009 07-AUG-2009
Analysis Type: Init. Cal. Times: 13:47 16:30
Lab Sample ID: SEQ-CCV Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	57.75906	Φ 60.41100	0.010	4.6	15.0	
	2 RDX	338	O 330	0.010	-2.2	15.0	
$	30 1,2-Dinitrobenzene	1000	1099	0.010	-9.9	15.0	
	3 1,3,5-Trinitrobenzene	1000	1018	0.010	-1.8	15.0	
	4 1,3-Dinitrobenzene	302	359	0.010	18.9	15.0	<-H J+
	5 Tetryl	374	302	0.010	-19.2	15.0	<-L J/UJ
	6 Nitrobenzene	314	334	0.010	6.3	15.0	
	9 2,4,6-Trinitrotoluene	22.64534	24.46100	0.010	8.0	15.0	
	10 4-Amino-2,6-dinitrotoluene	22.67709	24.90900	0.010	9.8	15.0	
	11 2-Amino-4,6-dinitrotoluene	435	444	0.010	2.2	15.0	
	12 2,6-Dinitrotoluene	342	364	0.010	6.6	15.0	
	13 2,4-Dinitrotoluene	16.44444	16.71300	0.010	1.6	15.0	
	14 2-Nitrotoluene	343	350	0.010	1.9	15.0	
	15 4-Nitrotoluene	273	275	0.010	0.6	15.0	
	16 3-Nitrotoluene	430	432	0.010	0.4	15.0	
$	18 1-Chloro-3-Nitrobenzene	597	604	0.010	1.2	15.0	

4209D

WL 8/17/14

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\023V2301.D
Report Date: 17-Aug-2009 14:49

Empirical Laboratories, LLC

JLB 8-17-09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i
Lab File ID: 023V2301.D
Analysis Type:
Lab Sample ID: SEQ-CCV
Method: \\ELABNSH05\TARGET\chem\hplc2.i\081209.b\8330.m

Injection Date: 13-AUG-2009 07:36
Init. Cal. Date(s): 14-MAY-2009 07-AUG-2009
Init. Cal. Times: 13:47 16:30
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	57.75906	61.08000	0.010	5.7	15.0	
	2 RDX	338	320	0.010	-5.3	15.0	
$	30 1,2-Dinitrobenzene	1000	1082	0.010	-8.2	15.0	
	3 1,3,5-Trinitrobenzene	1000	1026	0.010	-2.6	15.0	
	4 1,3-Dinitrobenzene	302	340	0.010	12.8	15.0	
	5 Tetryl	374	308	0.010	-17.7	15.0	<- L J/UJ
	6 Nitrobenzene	314	328	0.010	4.3	15.0	
	9 2,4,6-Trinitrotoluene	22.64534	25.34900	0.010	11.9	15.0	
	10 4-Amino-2,6-dinitrotoluene	22.67709	26.17100	0.010	15.4	15.0	<- H NQ
	11 2-Amino-4,6-dinitrotoluene	435	446	0.010	2.6	15.0	
	12 2,6-Dinitrotoluene	342	350	0.010	2.4	15.0	
	13 2,4-Dinitrotoluene	16.44444	16.96700	0.010	3.2	15.0	
	14 2-Nitrotoluene	343	351	0.010	2.3	15.0	
	15 4-Nitrotoluene	273	281	0.010	2.8	15.0	
	16 3-Nitrotoluene	430	432	0.010	0.4	15.0	
$	18 1-Chloro-3-Nitrobenzene	597	611	0.010	2.4	15.0	

L2090D

8/17/09

026

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG007

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT	
01	9H10009-BLK1	99	201*					1	NQ
02	9H10009-BS1	110						0	
03	9H10009-BS2	142						0	
04	YS06-EB02-08	99	240*					1	NQ - grab from C1
05									
06									
07									
08									
09									
10									
11									
12									
13									
14									
15									
16									
17									
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24									
25									
26									
27									
28									
29									
30									

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1-Chloro-3-Nitrobenzen	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-080609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG007

Lab Sample ID: 0908065-01 Date(s) Analyzed: 08/13/09 08/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
RDX	1	5.40	4.94	5.66	0.3376		
	2	3.35	3.29	3.65	16.24	191.8	J
Nitrobenzene	1	9.65	9.17	10.21	0.1050		
	2	7.19	6.79	7.95	1.199	167.8	J
1,3-Dinitrobenzene	1	8.42	8.10	9.10	1.201		
	2	10.63	10.53	11.77	0.7260	49.3	J
2,4-Dinitrotoluene	1	13.44	12.57	13.85	0.1679		
	2	18.66	17.43	21.23	0.3021	57.1	J
2-Amino-4,6-dinitrotoluen	1	12.47	11.37	12.89	0.1269		
	2	8.73	7.50	8.98	0.3462	92.7	J
Tetryl	1	9.32	8.83	9.85	0.4721		
	2	18.84	17.75	22.07	0.1533	102.0	J
2-Nitrotoluene	1	15.92	14.87	16.19	0.2882		
	2	11.82	10.70	12.94	0.3269	12.6	
4-Nitrotoluene	1	16.58	16.00	17.32	0.1278		
3-Nitrotoluene	1	17.94	17.13	18.57	0.2485		
					TOTAL 0.3763		
3-NT/4-NT	2	13.40	12.17	14.85	1.301	110.3	J

EXPL

028

Initial Calibration Date: 8/7/09, HPLC2, ultra c-18 column
RRF and %RSD Calculations: RF10, FILE ID 002V0201
Compound Name: 2-nitrotoluene
Lab Value: 311.8000

Area of Compound	3118
Conc. Of Compund	10
Calculated CF	311.8000

Compound Name: 2-nitrotoluene
Lab Value: 5.6

CF 1	311.8000
CF 2	325.7600
CF 3	337.3500
CF 4	366.7580
CF 5	356.3880
CF 6	352.7260
CF7	350.9220
Calculated % RSD	5.59

Continuing Calibration File ID: 8/12/09, 18:49, file id 001V0102.d
RRF and %D Calculations:
Compound Name: 2,4,6-TNT
Lab Value: 24.601

Area of Compound	24601
Conc. Of Compund	1000
Calculated CF	24.6010

Compound Name: 2,4,6-TNT
Lab Value: 8.6

Average RRF	22.64534
Calibration Check RRF	24.60100
Calculated % D	-8.6

SAMPLE CALCULATION

Sample ID: YS06-EB02-080609
Standard ID: ICAL 8/7/09
Compound: RDX
Concentration: 0.34 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	14814		
CF of Compound	337.557086		
Dilution Factor	1		
Weight of Sample	NA		
Extract Volume	8		
Volume of Sample	1040	NA	
% Moisture	NA		
injection volume	100	NA	
Conversion Factor	100		
Concentration	0.3400	#DIV/0!	#REF!

This SDG contains total and dissolved metals and mercury using SW-846 methods.

HOLDING TIMES

Sampling Date: 8/6
Received Date: 8/7
Prep. Dates: ICP 8/19; Hg 8/19
Analysis Dates: ICP 8/27; Hg 8/20

All holding time requirements were met. Cooler temps were acceptable.

CALIBRATIONS

All calibration criteria were met for the methods. CRI standards met method criteria with the exception of thallium. However, the analyte was recovered above the QC limit of 1305 and there were no positive results for Tl reported. ICSA/ICSAB results were acceptable. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.

  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

  L/UL - The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low.

This SDG contained 1 rinse blank only. Per request from CH2M – field QC blanks are not flagged for lab Blank contamination.

Blank Contamination and Qualification Summaries

Metals

Blank ID	Analyte	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code

Metals

Sample ID	analyte	Q Flag	Q Code

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for CCB contamination. Negative contamination in a prep blank or CCB, if less than the analyte RL, is qualified based on professional judgment (concentrations up to 10X the analyte MDL are flagged potentially biased low L/UL). Field QC blank associations are made based on the tracking information provided by the client.

MATRIX SPIKE/DUPLICATE SUMMARY

There was no spike pair. The submitted LCS samples were acceptable.

SERIAL DILUTIONS

There was no serial dilution.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the CRDL. (25% RPD criteria)

Sample ID: NONE Duplicate Sample ID:

Analyte	Sample Conc.	Duplicate Conc.	RPD
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!
			#DIV/0!

Comments:

SAMPLE CALCULATION

EPA SAMPLE ID: YS06-EB02-080609
COMPOUND: ZINC
CONCENTRATION: 6.1 ug/L
%Solids – na
50 ml

Raw Data result: 6.139313 ug/L

6.139313 ug/L * 0.05L/0.05L = 6.139313 ug/L

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified. All positive results reported at concentrations between the MDL and the RL were qualified with a B flag by the laboratory. The reviewer has flagged these results as estimated J.

Reviewer J Cleveland **Date:** 10/10/09

CompuChem
a Division of Liberty Analytical Corp.
501 Madison Avenue
Cary, NC 27513

SDG NARRATIVE
SDG # 0908039

The indicated Sample Delivery Group (SDG) consisting of one (1) water sample was received into the laboratory information management system (LIMS) on August 7, 2009 intact and in good condition with Chain of Custody (COC) Records in order, unless otherwise noted in any attachments or Quality Assurance Notices. The temperature of the sample upon receipt was 1.2 to 2.1°C. Sample ID's reported in this data package are noted by the receiving department on the COC if they differ from those listed by the samplers on the COC.

The sample was prepared and analyzed in accordance with SW846 methodology for the requested TAL metals and mercury.

INSTRUMENTAL QUALITY CONTROL:

All calibration verification solutions (ICV & CCV) and blanks (ICB & CCB) associated with this data were confirmed to be within allowable limits.

SAMPLE PREPARATION QUALITY CONTROL:

The sample preparation procedure verification (PBW, LCSW, & LCSWD) was found to be within acceptable ranges and the field sample was analyzed within the specified holding times.

MATRIX RELATED QUALITY CONTROL:

No matrix spikes were requested for this SDG.

The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice.

2. Sowter for Susan Bass

Susan W. Bass
Senior Chemist
August 27, 2009

SW846 - METALS

2B-IN

CRDL STANDARD FOR AA AND ICP

Lab Name: COMPUCHEM Contract: _____

Lab Code: LIBRTY Case No.: _____ SAS No.: _____ SDG No.: 0908039

AA CRDL Standard Source: HP617816

ICP CRDL Standard Source: HIPUR

Concentration Units: ug/L

Analyte	True	Found	%R	CRDL Standard for ICP Initial True	Initial Found	Initial %R	Final Found	Final %R
Aluminum				200.0	227.05	113.5		
Antimony				60.0	63.00	105.0		
Arsenic				10.0	9.22	92.2		
Barium				200.0	199.41	99.7		
Beryllium				5.0	5.41	108.2		
Cadmium				5.0	5.25	105.0		
Calcium				2000.0	2096.86	104.8		
Chromium				10.0	9.77	97.7		
Cobalt				50.0	50.78	101.6		
Copper				25.0	24.69	98.8		
Iron				100.0	100.78	100.8		
Lead				3.0	2.73	91.0		
Magnesium				2000.0	2077.69	103.9		
Manganese				15.0	14.86	99.1		
Mercury	0.2	0.19	95.0					
Nickel				40.0	40.39	101.0		
Potassium				2000.0	1754.69	87.7		
Selenium				5.0	3.67	73.4		
Silver				10.0	9.67	96.7		
Sodium				2000.0	1840.86	92.0		
Thallium				10.0	13.24	132.4		
Vanadium				50.0	50.60	101.2		
Zinc				20.0	18.01	90.0		

Kt up to 2X PQL NQ

Control Limits: no limits have been established by EPA at this time

SW846 - METALS

3

BLANKS

Lab Name: COMPUCHEM Contract:

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0908039

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Preparation Blank	C	M
Aluminum	200.0	U	200.0	U	200.0	U	200.0	U	200.000	U	P
Antimony	2.1	B	10.0	U	10.0	U	10.0	U	10.000	U	P
Arsenic	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Barium	-0.5	B	200.0	U	200.0	U	200.0	U	-0.436	B	P
Beryllium	5.0	U	5.0	U	0.4	B	0.4	B	0.686	B	P
Cadmium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Calcium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Chromium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Cobalt	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Copper	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Iron	100.0	U	100.0	U	100.0	U	100.0	U	100.000	U	P
Lead	3.0	U	3.0	U	3.0	U	3.0	U	3.000	U	P
Magnesium	5000.0	U	5000.0	U	26.1	B	5000.0	U	5000.000	U	P
Manganese	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Mercury	0.200	U	0.200	U	0.200	U			0.200	U	CV
Nickel	40.0	U	1.7	B	1.7	B	40.0	U	40.000	U	P
Potassium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Selenium	5.0	U	5.0	U	5.0	U	5.0	U	5.000	U	P
Silver	5.0	U	5.0	U	-0.5	B	-0.4	B	-0.484	B	P
Sodium	5000.0	U	5000.0	U	5000.0	U	5000.0	U	5000.000	U	P
Thallium	10.0	U	10.0	U	10.0	U	10.0	U	10.000	U	P
Vanadium	20.0	U	20.0	U	20.0	U	20.0	U	20.000	U	P
Zinc	20.0	U	20.0	U	1.3	B	20.0	U	20.000	U	P

No Quals
I rinse blank
only assoc.

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # 72278, CT Laboratories
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameter noted in the table below for SDG #s 72278. The data validation was performed in accordance with the SW-846 8330 for nitroguanidine only. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site.

Sample ID	Lab ID	Matrix	NG
YS06-GW12-0409	660758	water	X
YS06-GW12P-0409	660759	water	X
YS06-GW12-0409MS	660758MS	water	X
YS06-GW12-0409MSD	660758MSD	water	X
YS06-FB01-040109	660760	water	X
YS06-EB01-040209	660761	water	X

NG – nitroguanidine

The following quality control samples were provided with this SDG: sample YS06-EB01-040209-equipment blank; sample YS06-FB01-040109-field blank; and sample YS06-GW12P-0409-field duplicate of sample YS06-GW12-0409.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times
- Sample Condition *
- HPLC Performance *
- Initial/Continuing Calibrations *
- Blanks *
- Surrogates *
- Laboratory Control Samples *

- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates *
- Identification/Quantitation *
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No issues requiring the rejection of analytical data were noted in this data package.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

Nitroguanidine by 8330

The field blank sample was extracted one day outside the extraction holding time of seven days from sampling. The reported non-detect result in the sample was qualified as estimated UJ.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 4/1-2/09 and samples were received at the sub-contracting laboratory 4/7/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements with the following exception.

Holding Time

Nitroguanidine by 8330

Sample YS06-FB01-040109 was extracted one day outside the extraction holding time of seven days from sampling. The reported non-detect result in the sample was qualified as biased low UL with an HT qualifier code.

Reporting Limits

Nitroguanidine by 8330

The target compound did not meet the QAPP established method detection limits (MDLs) as noted on page 96 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. No validation action was required.

Compound	QAPP MDL (ug/L)	Lab MDL (ug/L)
nitroguanidine	25	26

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Nitroguanidine by 8330

Sample ID	Compound	Results	Q Flag	Q code
YS06-FB01-040109	nitroguanidine	-	UL	HT

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS06-GW12-0409

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660758
% Solids:		Date Received	04/07/2009
Conc. Extract Vol:	5.0 (mL)	Date Extracted	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 11:57	84	U	26	84

6409

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description:

YS06-GW12P-0409

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660759
% Solids:		Date Received:	04/07/2009
Conc. Extract Vol.	5.0 (mL)	Date Extracted:	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 12:25	84	U	26	84

JAC 6409

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: YS06-FB01-040109

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660760
% Solids:		Date Received:	04/07/2009
Conc. Extract Vol:	5.0 (mL)	Date Extracted:	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 12:34	84	J UL HT	26	84

JAC 6409

CT Laboratories

1B

SEMIVOLATILE ORGANICS ANALYSIS

Sample Description: **YS06-EB01-040209**

Lab Name:	CT Laboratories	Contract:	COMPUCHEM-CTO-166NWSY SITE 6
Matrix:	GROUND WATER	SDG No.:	72278
Sample wt/vol:	0.005 (g/L)	CTL Sample ID:	660761
% Solids:		Date Received:	04/07/2009
Conc. Extract Vol:	5.0 (mL)	Date Extracted:	04/09/2009
Analytical Method:	EPA 8330	Dilution Factor:	1.00

Concentration Units: ug/L

CAS NO.	Analyte	Analysis Date/Time	Concentration	Qualifiers	LOD	RL
556-88-7	Nitroguanidine	04/13/2009 12:43	84	U	26	84

JAC 04/09

COMPUCHEM

Project Name: CTO-166NWSY SITE 6

SDG #: 0

CTLabs Folder #: 72278

Project Number:

Matrix Spike Water

Analytical Run #:	56839	Analysis Date:	4/13/2009	Prep Batch #:	28620	Matrix:	GROUND WATER
CTLab #:	661464	Analysis Time:	12:06	Prep Date:	4/9/2009	Method:	SW8330B
Parent Sample #:	660758	Analyst:	RED	Prep Analyst:	RED		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,2-Dinitrobenzene	93.6	% Recovery				93.6	50 --- 150		
Nitroguanidine	964	ug/L	0		1000	96	50 --- 150		

JAC 4/09

COMPUCHEM

Project Name: CTO-166NWSY SITE 6

SDG #: 0

CTLabs Folder #: 72278

Project Number:

Matrix Spike Duplicate Water

Analytical Run #:	56839	Analysis Date:	4/13/2009	Prep Batch #:	28620	Matrix:	GROUND WATER
CTLab #:	661465	Analysis Time:	12:15	Prep Date:	4/9/2009	Method:	SW8330B
Parent Sample #:	661464	Analyst:	RED	Prep Analyst:	RED		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
1,2-Dinitrobenzene	93.8	% Recovery				93.8	50 --- 150		
Nitroguanidine	952	ug/L	0		1000	95	50 --- 150	1	30

JAC 6409

Holding Times

Sampling Date: 4/1-2/09
Received Date: 4/6/09 at compuchem
4/7/09 at subcontractor (CT Laboratories)
Extraction Dates: 4/9/09
Analysis Dates: 4/13/09

Sample receipt documentation was in order. Extraction holding time was exceeded for YS06-FB01-040109 by one day. Results reported in this sample were qualified as estimated UJ.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard six-point curve for the target compound and surrogate. Linear regression curves were plotted. Correlation coefficients were within QC limits. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. Peak quality for nitroguanidine was not great but integration appeared consistent throughout the sequence. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met. Raw data was verified. No qualifications were required due to unmet initial or continuing calibration criteria.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

No contamination was reported in the associated laboratory or field blanks.

SURROGATE RECOVERIES

All surrogate recovery criteria were met. No qualifications were required.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-GW12-0409 exhibited acceptable recoveries for nitroguanidine in both the MS & MSD. The RPD was also good. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compound. No qualifications were required.

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW12-0409 **Duplicate ID:** YS06-GW12P-0409
Comments: No positive results for the target compound were reported in the samples.

SAMPLE RESULT VERIFICATION

No positive results above the reporting limits were reported in the field samples analyzed in this SDG. Raw data was verified.

Reviewer JCleveland **Date:** 6409

LR Curve		HPLC2
	4/7/2009	
INTERCEPT	144.7064289	
SLOPE	451632.7041	
correlation coefficient	0.999924142	

CCV 4/7/09 at 1052

Y-	227295
x = (227295 - 144.7064289)/451632.7041	
x =	0.5030
Lab Value	0.504
%D =	-0.59%
Lab Value	0.78%

SLIGHT ROUNDING DIFFERENCES NOTED

Sample Calculation: 56839, 661464, msw

Compound:	nitroguanidine
Lab Value:	0.482 ug/ml
y =	217481
x = (217481 - 144.7064289)/451632.7041	
x in ug/ml	0.48122
Reported value in ug/L	964.00

rounding differences noted (0.2%D) - no impact - likely due to differences in curve plot

Case Narrative

Client: CompuChem
Project: CTO-166NWSY Site 6
Sample Receipt Date: 04/07/2008
SDG #: 69246

Four water samples were received for Nitroguanidine analysis. The assigned sample ID number, date sampled, and date received are indicated in the attached Project Summary. The samples were received intact and at a temperature within method specified acceptance limits. A breakdown of sample receipt information can be found on the Sample Condition Report located in the last section of the data package and any exceptions are noted below.

Two coolers were received with project samples. The "large" cooler had an intact custody seal present upon receipt. The "small" cooler had no custody seals present upon receipt but the tape on the cooler was intact.

Sample Analysis and Quality Control

Explosives Analysis:

The samples were analyzed using US EPA Method 8330. All samples were analyzed within the holding time. The following summaries of quality control procedures are included:

Surrogate Recovery Data
Matrix Spike/Matrix Spike Duplicate Recovery Data
Laboratory Control Spike Data
Method Blank Data
Initial Calibration Summary
Calibration Check Summary
Analysis Run Log
Prep Log
Chromatograms

All analysis results met the method specified quality control criteria.

Notes regarding entire Chain of Custody:

Notes:
^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.
This report has been specifically prepared to satisfy project or program requirements. The test results in this report meet NELAP requirements for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report.

Submitted by: PML

Pat M. Letterer
Project Manager
608-356-2760

Current CT Laboratories Certifications

Illinois NELAP ID# 200046

Kansas NELAP ID# E-10368

Kentucky ID# 0023

Pennsylvania NELAP ID# 68-04201

New Jersey NELAP ID# WI001

North Dakota ID# R-171

Wisconsin Chemistry ID# 157066030

Wisconsin Bacteriology ID# 105-289

ship Mon., NDA for Tues. "SDG 1" S 12976

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6	Samples shipped to: CT LABS	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: David Berwanger	Phone: (919) 379-4100 X ~~4050~~ 4089
Report style: Level III	Address: 1239 Lange Ct. Baraboo, WI 53913	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: ( )	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC2:

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other field blk

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other _____

DOD criteria

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Nitroguanidine 8330	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-GW12-0409	4/2	1325	2	F	U		S	4	X	✓	660358 / 0904014-02	USE FOR MS/MSD
YS06-GW12R-0409	4/2	1400	2	F	U		S	2		✓	660359 -03	
YS06-EB01-0409	4/1	1940	9	F	U		S	2		✓	660360 ✓ -~~04~~ 09	
YS06-EB01-0402	4/2	1510	4	F	U		S	2		✓	660361 ✓ -04	

4/3/09

Folder #: 72278
Company: COMPUCHEM
Project: CTO-166NWSY SITE 6
Logged By: JLS PM PM
°C

Clients Special Instructions:

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date: 4/6/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1340	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 4/7/09
Company Name:	Time:	Company Name:	Time:	Company Name: CT Laboratories	Time: 1026

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

012

Naval Weapons Station Yorktown

PREPARED FOR:	NWS Yorktown / Sites 1, 3, and 6 / Sampling, 2009
REVIEWER:	Megan Morrison/ Project Chemist/ CH2M HILL
COPIES:	Bill Friedmann /Activity Manager/ CH2M HILL Rebekah Ives/ Project Manager/ CH2M HILL
DATE:	January 8, 2010
SUBJECT:	Quality Assessment for Pore Samples Collected September 1-2, 2009

This quality assurance memorandum is based upon a review of analytical data generated for the pore water samples collected on September 1-2, 2009 at the Naval Weapons Station (NWS) Yorktown in Yorktown, Virginia. Data was split into two Sample Delivery Groups (SDGs) by the analytical laboratory; SDG's 0909013 and 0909012 were internally validated. Tables 1-2 present a summary of the sample identification numbers, laboratory sample identification numbers, dates of collection, and the analyses performed for each SDG. Attachment A lists the data qualification codes for this project.

CompuChem of Cary, North Carolina served as the laboratory for this sampling event. The samples were submitted for Volatile Organic Compound (VOC) analysis by SW-846 8260B.

Data for the analyses were reviewed for adherence to the specified analytical protocols in the laboratory's QC criteria and the Region III Modifications to the National Functional Guidelines were used for guidance on flagging conventions.

The analyses were performed acceptably, but required several qualifying statements; it is recommended that the analytical data be used only with the qualifying statements provided below. This report also includes a narrative of QA/QC deficiencies that did not warrant qualification. Any aspects of the data, which are not discussed in this report, should be considered qualitatively and quantitatively valid as reported, based on the deliverables reviewed. The validated and qualified results are presented in the data summary tables. Attachment A contains a copy of the chain of custody and the validated sample results.

1. SDG 0909012

Table 1

Summary Sample Data

Field Sample ID	Lab ID	Date Sampled	Date Analyses Performed
YS06-WN03-0909, -DL	0909012-01, -RE1	9/1/09	9/4/09, 9/11/09
YS06-WN01-0909	0909012-02		9/4/09
YS06-WN02-0909	0909012-03		
YS06-WN04-0909	0909012-04		
YS06-WN04P-0909	0909012-05		9/11/09
YS06-TB01-090109	0909012-06		9/4/09
YS06-FB02-090109	0909012-07		

General Data Qualifiers

As required by U.S. EPA protocols, all compounds, which were qualitatively identified at concentrations below their respective, reporting limits (RL) but above the method detection limit (MDL) have been qualified with "J" qualifiers on the data summary reports to indicate that they are quantitative estimates.

Organic Data Qualifiers

Laboratory Control Sample

The laboratory control sample (LCS) VIDLCS exhibited a recovery for chloromethane of 131%, which is higher than the 40-125% control limits. Chloromethane was not detected in any of the associated samples; therefore, no qualification is necessary.

Blanks

Target analytes were detected in several blank samples and qualified as noted in the table below.

Sample ID	Detected Constituent	Concentration (µg/L)	Action Level (µg/L)	Associated Samples	Qualification
YS06-FB02-090109	Acetone	99	990	All field samples	B, BL
	Methylene chloride	0.2 J	2	See YS06-TB01-090109	n/a
	2-Butanone	44	440	All field samples	B, BL
	2-Hexanone	3.4	17	None; all non-detect	n/a
YS06-TB01-090109	Acetone	3.4	34	See YS06-FB02-090109	n/a
	Methylene chloride	13	130	All field samples	B, BL
	Chloroform	14	70	None; all non-detect	n/a
	Bromodichloromethane	8	40		
	Dibromochloromethane	2.5	10		
	Bromoform	0.15 J	0.75		
VBLKID	Acetone	1.7 J	17	See YS06-FB02-090109	n/a
	Methylene chloride	0.29 J	2.9	See YS06-TB01-090109	n/a

VBLKIS	Methylene chloride	0.31 J	3.1	See YS06-TB01-090109	n/a

Dilutions

Sample YS06-WN03-0909 RA was diluted due to concentrations of target analytes that were over the calibration range in the original run. Dilutions have been resolved using the "Exclude" qualifier so that only one reportable result exists for each analyte per sample. Carbon disulfide was detected in the diluted run but not in the original run. Therefore this result was reported, but was J-qualified as estimated.

2. SDG 0909013

Table 2

Summary Sample Data

Field Sample ID	Lab ID	Date Sampled	Date Analyses Performed
YS03-WN01-0909	0909013-01	9/1/09	9/15/09
YS01-WN03-0909	0909013-02		
YS03-WN04-0909	0909013-03		
YS01-WN02-0909	0909013-04		
YS01-WN02P-0909	0909013-05		
YS01-FB01-090109	0909013-06		
YS03-TB01-090209	0909013-07	9/2/09	9/16/09
YS03-WN02-0909	0909013-08		9/15/09
YS03-WN03-0909	0909013-09		

General Data Qualifiers

As required by U.S. EPA protocols, all compounds, which were qualitatively identified at concentrations below their respective, reporting limits (RL) but above the method detection limit (MDL) have been qualified with "J" qualifiers on the data summary reports to indicate that they are quantitative estimates.

Organic Data Qualifiers

Laboratory Control Sample

The laboratory control sample (LCS) VJALCS exhibited a recovery for toluene of 122%, which is higher than the 75-120% control limits. However, toluene was not detected in any of the associated samples. Therefore, no qualification is necessary.

Blanks

Target analytes were detected in several blank samples and qualified as noted in the table below.

Sample ID	Detected Constituent	Concentration (µg/L)	Action Level (µg/L)	Associated Samples	Qualification
YS01-FB01-090109	Acetone	140	1400	YS01-WN02-0909 YS01-WN02P-0909 YS01-WN03-0909 YS03-WN04-0909	B, BL
	~~Methylene chloride~~	~~0.12 J~~	~~1.2~~	~~See YS03-TB01-~~	~~n/a~~

				090209	
	2-Butanone	31	310	YS01-WN02-0909 YS01-WN02P-0909 YS01-WN03-0909 YS03-WN01-0909 YS03-WN03-0909 YS03-WN04-0909	B, BL
	2-Hexanone	3.2	16	YS03-WN01-0909	B, BL
YS06-TB01-090109	Acetone	3.4	34	See YS01-FB01-090109	n/a
	Methylene chloride	13	130	None; all non-detect	n/a
	Chloroform	14	70		
	Bromodichloromethane	8	40		
	Dibromochloromethane	2.5	10		
	Bromoform	0.15 J	0.75		
YS03-TB01-090209	Methylene chloride	13	130	YS03-WN02-0909 YS03-WN03-0909	B, BL
VBLKIV	Methylene chloride	0.11 J	1.1	None; all non-detect	n/a
	2-Hexanone	0.91 J	4.55	See YS01-FB01-090109	
VBLKIX	Methylene chloride	0.18 J	1.8	See YS03-TB01-090209	n/a
	2-Butanone	1.4 J	14	See YS01-FB01-090109	
VBLKJA	Methylene chloride	0.26 J	2.6	None; all non-detect	n/a
	2-Hexanone	0.53 J	2.65		

Field Duplicates

YS01-WN02-0909 and its field duplicate YS01-WN02P-0909 exhibited acceptable relative percent differences (RPDs) except for Cyclohexane. Cyclohexane had a RPD of 54%, which is greater than the criteria of ≤ 25%. Cyclohexane has been qualified in both samples as J, FD.

Summary

This analytical quality assurance report has identified the aspects of the data that required qualification. These qualifiers are noted on the attached analytical sample summary reports.

Attachment A

Data Qualification Reference Information

VALID QUALIFIERS

Value	Description
	Confirmed Identification
B	Not detected substantially above the level reported in laboratory or field blanks
I	Interferences present which may cause the results to be biased high
Exclude	Result should be excluded for reporting purposes
J	Analyte present. Reported value may or may not be accurate or precise
J-	Analyte present. Reported value may be biased low. Actual value is expected to be higher
J+	Analyte present. Reported value may be biased high. Actual value is expected to be lower
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher
N	Tentative Identification. Consider Present. Special methods may be needed to confirm its presence or absence in future sampling efforts
NJ	Qualitative identification questionable due to poor resolution. Presumptively present at approximate quantity
Q	Estimated dioxin/furan concentration
R	Unreliable result
U	Not Detected
UJ	Not detected, quantitation limit may be inaccurate or imprecise
UL	Not detected, quantitation limit is probably higher
X	Dioxins only: Estimated Maximum Possible Concentration

QUALIFICATION CODE REFERENCE

Value	Description
%SOL	High Moisture content
2C	Second Column – Poor Dual Column Reproducibility
2S	Second Source – Bad reproducibility between tandem detectors
BD	Blank Spike/Blank Spike Duplicate(LCS/LCSD) Precision
BRL	Below Reporting Limit
BSH	Blank Spike/LCS – High Recovery
BSL	Blank Spike/LCS – Low Recovery
CC	Continuing Calibration
CCH	Continuing Calibration Verification – High Recovery
CCL	Continuing Calibration Verification – Low Recovery
DL	Redundant Result – due to Dilution
EBL	Equipment Blank Contamination
EMPC	Estimated Possible Maximum Concentration
ESH	Extraction Standard - High Recovery
ESL	Extraction Standard - Low Recovery
FBL	Field Blank Contamination
FD	Field Duplicate
HT	Holding Time
ICB	Initial Calibration – Bad Linearity or Curve Function
ICH	Initial Calibration – High Relative Response Factors
ICL	Initial Calibration – Low Relative Response Factors
ISH	Internal Standard – High Recovery
ISL	Internal Standard – Low Recovery
LD	Lab Duplicate Reproducibility
LR	Concentration Exceeds Linear Range
MBL	Method Blank Contamination
MDP	Matrix Spike/Matrix Spike Duplicate Precision
MI	Matrix interference obscuring the raw data
MSH	Matrix Spike and/or Matrix Spike Duplicate – High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate – Low Recovery
OT	Other
PD	Pesticide Degradation
RE	Redundant Result - due to Reanalysis or Re-extraction
SD	Serial Dilution Reproducibility
SSH	Spiked Surrogate – High Recovery
SSL	Spiked Surrogate – Low Recovery
TBL	Trip Blank Contamination
TN	Tune

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 10, 2009
SDG #s 0901126, 0902009, 0901127, 0902008 and 0901129, CompuChem
NAB Little Creek

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG #s 0901126, 0902009, 0901127, 0902008 and 0901129. The data validation was performed in accordance with the SW-846 8260B for volatiles. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94 (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3 review), as applicable.

Sample ID	Lab ID	Matrix	VOA
SDG# 0901126			
YS01-DW001-0109	0901126-01	water	X
YS01-DW002-0109	0901126-02	water	X
SDG# 0902009			
YS01-DW004-0209	0902009-01	water	X
YS03-DW001-0209	0902009-02	water	X
YS03-DW002-0209	0902009-03	water	X
YS03-DW003-0209	0902009-04	water	X
YS03-DW004-0209	0902009-05	water	X
SDG#0901127			
YS01-SO01-0109	0901127-01	water	X
SDG# 0902008			
YS01-SO01-0209	0902008-01	water	X
SDG# 0901129			
YS01-DW003-0109	0901129-01	water	X

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- GC/MS Tuning *
- Initial/Continuing Calibrations
- Blanks
- Internal Standards *
- Surrogates *

- Laboratory Control Samples *
- Matrix Spike Recoveries NA
- Matrix Duplicate RPDs NA
- Field Duplicates NA
- Identification/Quantitation
- Reporting Limits *
- Tentatively Identified Compounds NA

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

Issues requiring rejection of the analytical data were found in the validation of this SDG.

VOA

SDG#s 0901126, 0902009 and 0901129

The continuing calibrations exhibited low RRF values that required non-detected values be rejected.

SDG#s 0901127

The initial and continuing calibrations exhibited low RRF values that required non-detected values be rejected.

SDG#s 0902008

The initial calibration exhibited low RRF values that required non-detected values be rejected.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

VOA

SDG# 0901126

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

One of the samples required a dilution to obtain results within the calibration range.

SDG# 0902009

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

SDG# 0901127

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

SDG# 0901129

Blank contamination was noted in the method blank associated with samples in this batch. Qualifications were added to the data.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 01/29/09 through 02/02/09 and samples were received at the laboratory 01/30/09 through 02/03/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

VOA

Calibration standards exhibited RRFs and %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

SDG# 0901126

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 02/03/09	acetone	0.0379	YS01-DW002-0109, YS01-DW001-0109DL	L/R	CCL
	trichloroethene	22.95		J	CCH

SDG# 0902009

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 02/03/09	acetone	0.0379	all samples	L/R	CCL
	chloromethane chloroethane	-23.99 -28.45		J	CCL
	trichloroethene	22.95		J	CCH

SDG# 0901127

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 01/24/09	acetone	0.0447	YS01-SO01-0109	L/R	ICL
CC 01/30/09	acetone	0.0476	YS01-SO01-0109	L/R	CCL

SDG# 0902008

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
IC 02/06/09	acetone	0.0394	YS01-SO01-0209	L/R	ICL

SDG# 0901129

Standard ID	Compound(s)	RRF, %RSD, %D	Samples	Q Flag	Q Code
CC 02/03/09	acetone	0.0379	YS01-DW003-01-09	L/R	CCL

Blanks

VOA

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

SDG# 0901126

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-DW002-0109	methylene chloride	B	BL

SDG# 0902009

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
all samples	methylene chloride	B	BL

SDG# 0901127

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKIV	acetone	1.0J ug/L	5.0 ug/L	10 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-SO01-0109	acetone	B	BL

SDG# 0901129

Blank ID	Compound	Concentration	Reporting Limit	Action Level
VBLKJB	methylene chloride	0.53J ug/L	0.50 ug/L	5.3 ug/L

Associated samples and required qualifications are noted in the following table.

Sample ID	Compound	Q Flag	Q-code
YS01-DW003-0109	methylene chloride	B	BL

Identification/Quantitation

VOA

SDG# 0901126

A dilution was required for sample YS01-DW001-0109 to obtain results within the calibration range. Therefore, E-flagged compound results were not used in the initial analysis of these samples in favor of the corresponding D-flagged compound result in the dilution, qualifier code: DL.

The dilution for sample YS01-DW001-0109 diluted out results for vinyl chloride; therefore results above the calibration range were used from the initial analysis and qualified as estimated (J), qualifier code: LR.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Laura Maschhoff

Laura Maschhoff
President

Summary of Data Qualifications

VOA

SDG# 0901126

Sample ID	Compound	Results	Q Flag	Qual code
YS01-DW002-0109, YS01-DW001-0109DL	acetone	+/-	L/R	CCL
YS01-DW002-0109, YS01-DW001-0109DL	trichloroethene	+	J	CCH
YS01-DW002-0109	methylene chloride	+	B	BL
YS01-DW001-0109	all E-flagged results	+	R	DL
YS01-DW001-0109DL	all results except D-flagged compounds	+/-	R	DL
YS01-DW001-0109	vinyl chloride	+	J	LR

SDG# 0902009

Sample ID	Compound	Results	Q Flag	Qual code
all samples	acetone	+/-	L/R	CCL
all samples	chloromethane chloroethane	+	J	CCL
all samples	trichloroethene	+	J	CCH
all samples	methylene chloride	+	B	BL

SDG# 0901127

Sample ID	Compound	Results	Q Flag	Qual code
YS01-SO01-0109	acetone**	+/-	L/R	ICL
YS01-SO01-0109	acetone*	+/-	L/R	CCL
YS01-SO01-0109	acetone	+	B	BL

**qualified due to non-compliant initial calibration results*
***final qualifier due to blank contamination*

SDG# 0902008

Sample ID	Compound	Results	Q Flag	Qual code
YS01-SO01-0209	acetone	+/-	L/R	ICL

SDG# 0901129

Sample ID	Compound	Results	Q Flag	Qual code
YS01-DW003-0109	acetone	+/-	L/R	CCL
YS01-DW003-0109	methylene chloride	+	B	BL

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW001-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0171

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.94	
75-01-4	Vinyl Chloride	32	~~E~~ J, LR
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.61	
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	21	
75-15-0	Carbon disulfide	0.28	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	26	
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.12	J
156-60-5	trans-1,2-Dichloroethene	14	
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	910	~~E~~ RDL
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.15	J
107-06-2	1,2-Dichloroethane	0.12	J
79-01-6	Trichloroethene	1300	~~E~~ RDL
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	3.1	
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	1.7	
127-18-4	Tetrachloroethene	0.52	
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

060809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW001-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0171

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/02/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.16	J
108-38-3	m,p-Xylene	0.75	J
95-47-6	o-Xylene	0.31	J
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	910	E RDL
1330-20-7	Xylene (total)	1.1	
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

LM 060809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-DW0
01-0109DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01RE1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-01D71

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 714.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	360	U RDL
74-87-3	Chloromethane	360	U
75-01-4	Vinyl Chloride	360	U
74-83-9	Bromomethane	360	U
75-00-3	Chloroethane	360	U
75-69-4	Trichlorofluoromethane	360	U
75-35-4	1,1-Dichloroethene	360	U
75-15-0	Carbon disulfide	360	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	360	U
67-64-1	Acetone	1800	U
79-20-9	Methyl acetate	360	U
75-09-2	Methylene Chloride	180	DJB
156-60-5	trans-1,2-Dichloroethene	360	U
1634-04-4	Methyl-tert-butyl ether	360	U
75-34-3	1,1-Dichloroethane	360	U
156-59-2	cis-1,2-Dichloroethene	1700	D
78-93-3	2-butanone	1800	U RDL
67-66-3	Chloroform	360	U
71-55-6	1,1,1-Trichloroethane	360	U
56-23-5	Carbon Tetrachloride	360	U
71-43-2	Benzene	360	U
107-06-2	1,2-Dichloroethane	360	U
79-01-6	Trichloroethene	11000	D J CCH
78-87-5	1,2-Dichloropropane	360	U RDL
75-27-4	Bromodichloromethane	360	U
10061-01-5	cis-1,3-Dichloropropene	360	U
108-10-1	4-Methyl-2-pentanone	1800	U
108-88-3	Toluene	360	U
10061-02-6	trans-1,3-Dichloropropene	360	U
79-00-5	1,1,2-Trichloroethane	360	U
127-18-4	Tetrachloroethene	360	U
591-78-6	2-hexanone	1800	U
124-48-1	Dibromochloromethane	360	U

FORM I VOA

060809

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS01-DW0
01-0109DL

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-01RE1

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-01D71

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 714.3

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L		Q
106-93-4	1,2-Dibromoethane	360	U	RDL
108-90-7	Chlorobenzene	360	U	
100-41-4	Ethylbenzene	360	U	
108-38-3	m,p-Xylene	710	U	
95-47-6	o-Xylene	360	U	
100-42-5	Styrene	360	U	
75-25-2	Bromoform	360	U	
98-82-8	Isopropyl Benzene	360	U	
79-34-5	1,1,2,2-Tetrachloroethane	360	U	
541-73-1	1,3-Dichlorobenzene	360	U	
106-46-7	1,4-Dichlorobenzene	360	U	
95-50-1	1,2-Dichlorobenzene	360	U	
96-12-8	1,2-Dibromo-3-Chloropropane	360	U	
120-82-1	1,2,4-Trichlorobenzene	360	U	
540-59-0	1,2-Dichloroethene (total)	1700	D	
1330-20-7	Xylene (total)	360	U	RDL
110-82-7	Cyclohexane	360	U	
108-87-2	Methylcyclohexane	360	U	

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW002-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0271

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.5	~~J~~ L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.26	~~JB~~ BBL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	8.5	
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.49	~~J~~ JCCH
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.37	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 06/08/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW002-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Matrix: (soil/water) WATER Lab Sample ID: 0901126-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901126-0271

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.66	
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0171

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.20	J
75-15-0	Carbon disulfide	0.21	J
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	4.4	L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.18 JB	B BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.80	
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.16 J	J CCH
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.18	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

MM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0171

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.24	J
108-38-3	m,p-Xylene	0.24	J
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.26	J
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

06/09/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW001-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0271

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 3.6

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	1.8	U
74-87-3	Chloromethane	1.1	~~J~~ J CCL
75-01-4	Vinyl Chloride	1.8	
74-83-9	Bromomethane	1.8	U
75-00-3	Chloroethane	1.8	U
75-69-4	Trichlorofluoromethane	1.8	U
75-35-4	1,1-Dichloroethene	1.8	U
75-15-0	Carbon disulfide	1.8	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	1.8	U
67-64-1	Acetone	15	L CCL
79-20-9	Methyl acetate	1.8	U
75-09-2	Methylene Chloride	0.66	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	1.8	U
1634-04-4	Methyl-tert-butyl ether	1.8	U
75-34-3	1,1-Dichloroethane	1.8	U
156-59-2	cis-1,2-Dichloroethene	65	
78-93-3	2-butanone	8.9	U
67-66-3	Chloroform	1.8	U
71-55-6	1,1,1-Trichloroethane	1.8	U
56-23-5	Carbon Tetrachloride	1.8	U
71-43-2	Benzene	1.8	U
107-06-2	1,2-Dichloroethane	1.8	U
79-01-6	Trichloroethene	16	J CCH
78-87-5	1,2-Dichloropropane	1.8	U
75-27-4	Bromodichloromethane	1.8	U
10061-01-5	cis-1,3-Dichloropropene	1.8	U
108-10-1	4-Methyl-2-pentanone	8.9	U
108-88-3	Toluene	0.57	J
10061-02-6	trans-1,3-Dichloropropene	1.8	U
79-00-5	1,1,2-Trichloroethane	1.8	U
127-18-4	Tetrachloroethene	1.8	U
591-78-6	2-hexanone	8.9	U
124-48-1	Dibromochloromethane	1.8	U

FORM I VOA

MM 060104

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW001-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-02

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0271

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 3.6

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	1.8	U
108-90-7	Chlorobenzene	1.8	U
100-41-4	Ethylbenzene	0.61	J
108-38-3	m,p-Xylene	3.6	U
95-47-6	o-Xylene	1.8	U
100-42-5	Styrene	1.8	U
75-25-2	Bromoform	1.8	U
98-82-8	Isopropyl Benzene	1.8	U
79-34-5	1,1,2,2-Tetrachloroethane	1.8	U
541-73-1	1,3-Dichlorobenzene	1.8	U
106-46-7	1,4-Dichlorobenzene	1.8	U
95-50-1	1,2-Dichlorobenzene	1.8	U
96-12-8	1,2-Dibromo-3-Chloropropane	1.8	U
120-82-1	1,2,4-Trichlorobenzene	1.8	U
540-59-0	1,2-Dichloroethene (total)	64	
1330-20-7	Xylene (total)	1.8	U
110-82-7	Cyclohexane	1.8	U
108-87-2	Methylcyclohexane	1.8	U

060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW002-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0371

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q	
75-71-8	Dichlorodifluoromethane	0.50	U	
74-87-3	Chloromethane	0.50	U	
75-01-4	Vinyl Chloride	0.50	U	
74-83-9	Bromomethane	0.50	U	
75-00-3	Chloroethane	0.50	U	
75-69-4	Trichlorofluoromethane	0.50	U	
75-35-4	1,1-Dichloroethene	0.50	U	
75-15-0	Carbon disulfide	0.50	U	
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U	
67-64-1	Acetone	3.0		L CCL
79-20-9	Methyl acetate	0.50	U	
75-09-2	Methylene Chloride	0.25	~~JB~~	B BL
156-60-5	trans-1,2-Dichloroethene	0.50	U	
1634-04-4	Methyl-tert-butyl ether	0.50	U	
75-34-3	1,1-Dichloroethane	0.12	J	
156-59-2	cis-1,2-Dichloroethene	0.25	J	
78-93-3	2-butanone	2.5	U	
67-66-3	Chloroform	0.50	U	
71-55-6	1,1,1-Trichloroethane	0.50	U	
56-23-5	Carbon Tetrachloride	0.50	U	
71-43-2	Benzene	0.50	U	
107-06-2	1,2-Dichloroethane	0.50	U	
79-01-6	Trichloroethene	3.1		J CCH
78-87-5	1,2-Dichloropropane	0.50	U	
75-27-4	Bromodichloromethane	0.50	U	
10061-01-5	cis-1,3-Dichloropropene	0.50	U	
108-10-1	4-Methyl-2-pentanone	2.5	U	
108-88-3	Toluene	0.42	J	
10061-02-6	trans-1,3-Dichloropropene	0.50	U	
79-00-5	1,1,2-Trichloroethane	0.50	U	
127-18-4	Tetrachloroethene	0.50	U	
591-78-6	2-hexanone	2.5	U	
124-48-1	Dibromochloromethane	0.50	U	

FORM I VOA

02/09/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW002-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-03

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0371

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.82	
108-38-3	m,p-Xylene	0.24	J
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.25	J
1330-20-7	Xylene (total)	0.25	J
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-DW003-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0471

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	17	
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.41	~~J~~ J CCL
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	1.4	
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	1.8	~~J~~ L CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.23	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.49	J
156-59-2	cis-1,2-Dichloroethene	12	
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.24	J
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.32	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM I VOA

VM 060409

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW003-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-04

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0471

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.54	
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.14	J
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.14	J
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	12	
1330-20-7	Xylene (total)	0.14	J
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.12	J

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0571

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 71.4

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	36	U
74-87-3	Chloromethane	20	~~U~~ J CCL
75-01-4	Vinyl Chloride	690	
74-83-9	Bromomethane	36	U
75-00-3	Chloroethane	36	U
75-69-4	Trichlorofluoromethane	36	U
75-35-4	1,1-Dichloroethene	12	J
75-15-0	Carbon disulfide	36	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	36	U
67-64-1	Acetone	180	~~U~~ R CCL
79-20-9	Methyl acetate	36	U
75-09-2	Methylene Chloride	13	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	36	U
1634-04-4	Methyl-tert-butyl ether	36	U
75-34-3	1,1-Dichloroethane	8.1	J
156-59-2	cis-1,2-Dichloroethene	1100	
78-93-3	2-butanone	180	U
67-66-3	Chloroform	36	U
71-55-6	1,1,1-Trichloroethane	36	U
56-23-5	Carbon Tetrachloride	36	U
71-43-2	Benzene	36	U
107-06-2	1,2-Dichloroethane	36	U
79-01-6	Trichloroethene	270	J CCH
78-87-5	1,2-Dichloropropane	36	U
75-27-4	Bromodichloromethane	36	U
10061-01-5	cis-1,3-Dichloropropene	36	U
108-10-1	4-Methyl-2-pentanone	180	U
108-88-3	Toluene	36	U
10061-02-6	trans-1,3-Dichloropropene	36	U
79-00-5	1,1,2-Trichloroethane	36	U
127-18-4	Tetrachloroethene	36	U
591-78-6	2-hexanone	180	U
124-48-1	Dibromochloromethane	36	U

FORM I VOA

DL 02/09/09

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-DW004-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Matrix: (soil/water) WATER Lab Sample ID: 0902009-05

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0902009-0571

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 71.4

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	36	U
108-90-7	Chlorobenzene	36	U
100-41-4	Ethylbenzene	36	U
108-38-3	m,p-Xylene	71	U
95-47-6	o-Xylene	36	U
100-42-5	Styrene	36	U
75-25-2	Bromoform	36	U
98-82-8	Isopropyl Benzene	36	U
79-34-5	1,1,2,2-Tetrachloroethane	36	U
541-73-1	1,3-Dichlorobenzene	36	U
106-46-7	1,4-Dichlorobenzene	36	U
95-50-1	1,2-Dichlorobenzene	36	U
96-12-8	1,2-Dibromo-3-Chloropropane	36	U
120-82-1	1,2,4-Trichlorobenzene	36	U
540-59-0	1,2-Dichloroethene (total)	1100	
1330-20-7	Xylene (total)	36	U
110-82-7	Cyclohexane	36	U
108-87-2	Methylcyclohexane	36	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SO01-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Matrix: (soil/water) SOIL Lab Sample ID: 0901127-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0901127-0159

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. 17 Date Analyzed: 01/30/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.0	U
74-87-3	Chloromethane	6.0	U
75-01-4	Vinyl Chloride	6.0	U
74-83-9	Bromomethane	6.0	U
75-00-3	Chloroethane	6.0	U
75-69-4	Trichlorofluoromethane	6.0	U
75-35-4	1,1-Dichloroethene	6.0	U
75-15-0	Carbon disulfide	6.0	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.0	U
67-64-1	Acetone	15	U
75-09-2	Methylene Chloride	1.2	~~JB~~ B BL
156-60-5	trans-1,2-Dichloroethene	6.0	U
1634-04-4	Methyl-tert-butyl ether	6.0	U
75-34-3	1,1-Dichloroethane	6.0	U
156-59-2	cis-1,2-Dichloroethene	6.0	U
78-93-3	2-butanone	15	U
67-66-3	Chloroform	6.0	U
71-55-6	1,1,1-Trichloroethane	6.0	U
56-23-5	Carbon Tetrachloride	6.0	U
71-43-2	Benzene	6.0	U
107-06-2	1,2-Dichloroethane	6.0	U
79-01-6	Trichloroethene	6.0	U
78-87-5	1,2-Dichloropropane	6.0	U
75-27-4	Bromodichloromethane	6.0	U
10061-01-5	cis-1,3-Dichloropropene	6.0	U
108-10-1	4-Methyl-2-pentanone	15	U
108-88-3	Toluene	6.0	U
10061-02-6	trans-1,3-Dichloropropene	6.0	U
79-00-5	1,1,2-Trichloroethane	6.0	U
127-18-4	Tetrachloroethene	6.0	U
591-78-6	2-hexanone	15	U
124-48-1	Dibromochloromethane	6.0	U
106-93-4	1,2-Dibromoethane	6.0	U

MM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-SO01-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Matrix: (soil/water) SOIL Lab Sample ID: 0901127-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0901127-0159

Level: (low/med) LOW Date Received: 01/30/09

% Moisture: not dec. 17 Date Analyzed: 01/30/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	6.0	U
100-41-4	Ethylbenzene	6.0	U
100-42-5	Styrene	6.0	U
75-25-2	Bromoform	6.0	U
98-82-8	Isopropyl Benzene	6.0	U
79-34-5	1,1,2,2-Tetrachloroethane	6.0	U
541-73-1	1,3-Dichlorobenzene	6.0	U
106-46-7	1,4-Dichlorobenzene	6.0	U
95-50-1	1,2-Dichlorobenzene	6.0	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.0	U
120-82-1	1,2,4-Trichlorobenzene	6.0	U
1330-20-7	Xylene (total)	6.0	U
79-20-9	Methyl acetate	6.0	U
110-82-7	Cyclohexane	6.0	U
108-87-2	Methylcyclohexane	6.0	U
108-38-3	m,p-Xylene (part of total)	12	U
95-47-6	o-Xylene (part of total)	6.0	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS03-SO01-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Matrix: (soil/water) SOIL Lab Sample ID: 0902008-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0902008-01R59

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. 26 Date Analyzed: 02/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	6.8	U
74-87-3	Chloromethane	6.8	U
75-01-4	Vinyl Chloride	6.8	U
74-83-9	Bromomethane	6.8	U
75-00-3	Chloroethane	6.8	U
75-69-4	Trichlorofluoromethane	6.8	U
75-35-4	1,1-Dichloroethene	6.8	U
75-15-0	Carbon disulfide	6.8	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	6.8	U
67-64-1	Acetone	28	L ICL
75-09-2	Methylene Chloride	6.8	U
156-60-5	trans-1,2-Dichloroethene	6.8	U
1634-04-4	Methyl-tert-butyl ether	6.8	U
75-34-3	1,1-Dichloroethane	6.8	U
156-59-2	cis-1,2-Dichloroethene	11	
78-93-3	2-butanone	17	U
67-66-3	Chloroform	6.8	U
71-55-6	1,1,1-Trichloroethane	6.8	U
56-23-5	Carbon Tetrachloride	6.8	U
71-43-2	Benzene	6.8	U
107-06-2	1,2-Dichloroethane	6.8	U
79-01-6	Trichloroethene	14	
78-87-5	1,2-Dichloropropane	6.8	U
75-27-4	Bromodichloromethane	6.8	U
10061-01-5	cis-1,3-Dichloropropene	6.8	U
108-10-1	4-Methyl-2-pentanone	17	U
108-88-3	Toluene	6.8	U
10061-02-6	trans-1,3-Dichloropropene	6.8	U
79-00-5	1,1,2-Trichloroethane	6.8	U
127-18-4	Tetrachloroethene	6.8	U
591-78-6	2-hexanone	17	U
124-48-1	Dibromochloromethane	6.8	U
106-93-4	1,2-Dibromoethane	6.8	U

FORM I VOA

VM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS03-SO01-0209

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Matrix: (soil/water) SOIL Lab Sample ID: 0902008-01

Sample wt/vol: 5.0 (g/mL) G Lab File ID: 0902008-01R59

Level: (low/med) LOW Date Received: 02/03/09

% Moisture: not dec. 26 Date Analyzed: 02/06/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-90-7	Chlorobenzene	6.8	U
100-41-4	Ethylbenzene	6.8	U
100-42-5	Styrene	6.8	U
75-25-2	Bromoform	6.8	U
98-82-8	Isopropyl Benzene	4.5	J
79-34-5	1,1,2,2-Tetrachloroethane	6.8	U
541-73-1	1,3-Dichlorobenzene	6.8	U
106-46-7	1,4-Dichlorobenzene	6.8	U
95-50-1	1,2-Dichlorobenzene	6.8	U
96-12-8	1,2-Dibromo-3-Chloropropane	6.8	U
120-82-1	1,2,4-Trichlorobenzene	6.8	U
1330-20-7	Xylene (total)	6.8	U
79-20-9	Methyl acetate	6.8	U
110-82-7	Cyclohexane	6.8	U
108-87-2	Methylcyclohexane	8.8	
108-38-3	m,p-Xylene (part of total)	14	U
95-47-6	o-Xylene (part of total)	6.8	U

VM 060909

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW003-0109

Lab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Matrix: (soil/water) WATER Lab Sample ID: 0901129-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901129-0171

Level: (low/med) LOW Date Received: 01/31/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume:_____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
75-71-8	Dichlorodifluoromethane	0.50	U
74-87-3	Chloromethane	0.50	U
75-01-4	Vinyl Chloride	0.50	U
74-83-9	Bromomethane	0.50	U
75-00-3	Chloroethane	0.50	U
75-69-4	Trichlorofluoromethane	0.50	U
75-35-4	1,1-Dichloroethene	0.50	U
75-15-0	Carbon disulfide	0.50	U
76-13-1	1,1,2-trichloro-1,2,2-triflu	0.50	U
67-64-1	Acetone	2.5	~~U~~ R CCL
79-20-9	Methyl acetate	0.50	U
75-09-2	Methylene Chloride	0.28	~~JB~~ B PR
156-60-5	trans-1,2-Dichloroethene	0.50	U
1634-04-4	Methyl-tert-butyl ether	0.50	U
75-34-3	1,1-Dichloroethane	0.50	U
156-59-2	cis-1,2-Dichloroethene	0.50	U
78-93-3	2-butanone	2.5	U
67-66-3	Chloroform	0.50	U
71-55-6	1,1,1-Trichloroethane	0.50	U
56-23-5	Carbon Tetrachloride	0.50	U
71-43-2	Benzene	0.50	U
107-06-2	1,2-Dichloroethane	0.50	U
79-01-6	Trichloroethene	0.50	U
78-87-5	1,2-Dichloropropane	0.50	U
75-27-4	Bromodichloromethane	0.50	U
10061-01-5	cis-1,3-Dichloropropene	0.50	U
108-10-1	4-Methyl-2-pentanone	2.5	U
108-88-3	Toluene	0.28	J
10061-02-6	trans-1,3-Dichloropropene	0.50	U
79-00-5	1,1,2-Trichloroethane	0.50	U
127-18-4	Tetrachloroethene	0.50	U
591-78-6	2-hexanone	2.5	U
124-48-1	Dibromochloromethane	0.50	U

FORM 1
VOLATILE ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS01-DW003-0109

ab Name: COMPUCHEM Method: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Matrix: (soil/water) WATER Lab Sample ID: 0901129-01

Sample wt/vol: 25 (g/ml) ML Lab File ID: 0901129-0171

Level: (low/med) LOW Date Received: 01/31/09

% Moisture: not dec. _____ Date Analyzed: 02/03/09

GC Column: SPB-624 ID: 0.32 (mm) Dilution Factor: 1.0

Soil Extract Volume: _____(uL) Soil Aliquot Volume: _____(uL

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
106-93-4	1,2-Dibromoethane	0.50	U
108-90-7	Chlorobenzene	0.50	U
100-41-4	Ethylbenzene	0.50	
108-38-3	m,p-Xylene	1.0	U
95-47-6	o-Xylene	0.50	U
100-42-5	Styrene	0.50	U
75-25-2	Bromoform	0.50	U
98-82-8	Isopropyl Benzene	0.50	U
79-34-5	1,1,2,2-Tetrachloroethane	0.50	U
541-73-1	1,3-Dichlorobenzene	0.50	U
106-46-7	1,4-Dichlorobenzene	0.50	U
95-50-1	1,2-Dichlorobenzene	0.50	U
96-12-8	1,2-Dibromo-3-Chloropropane	0.50	U
120-82-1	1,2,4-Trichlorobenzene	0.50	U
540-59-0	1,2-Dichloroethene (total)	0.50	U
1330-20-7	Xylene (total)	0.50	U
110-82-7	Cyclohexane	0.50	U
108-87-2	Methylcyclohexane	0.50	U

WK 060901

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 01/29/09
Received Date: 01/30/09
Analysis Dates: 02/02-03/09

Cooler Temps: 0.4°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial calibration. Qualifications were required for the continuing calibrations due to low RRF and high %D values, see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments. A dilution was required for sample YS01-DW001-0109 to obtain results within the calibration range. The dilution for sample YS01-DW001-0109 diluted out results for vinyl chloride; therefore results above the calibration range were used from the initial analysis and qualified as estimated (J), qualifier code: LR.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Ilyssa Mascellaro Date: 6/8/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Lab File ID: 9B03003-TUN171 BFB Injection Date: 02/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1200

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	79.1 (97.2)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9B03003-CCV	9B03003-CCV171	02/03/09	1230
02	VBLKJB	9020308-BLK	9020308-BLK1R7	02/03/09	1532
03	VJBLCS	9020308-BS1	9020308-BS171	02/03/09	1611
04	VJBLCSD	9020308-BSD	9020308-BSD171	02/03/09	1640
05	YS01-DW002-0109 ✓	0901126-02	0901126-0271	02/03/09	1708
06	YS01-DW001-0109DL ✓	0901126-01R	0901126-01D71	02/03/09	1736
07					
08					
09					
10					
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19					
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21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Instrument ID: 5972HP71 Calibration Date: 02/03/09 Time: 1230

Lab File ID: 9B03003-CCV171 Init. Calib. Date(s): 02/02/09 02/02/09

Init. Calib. Times: 1430 1724

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	1.0919800	0.6997262	0.6997262	0.001	-35.92	90.00	AVRG	
Chloromethane	95.017176	125.00000	0.3576133	0.1	-23.99	90.00	LINR	
Vinyl Chloride	100.82538	125.00000	0.4194522	0.001	-19.34	90.00	LINR	
Bromomethane	0.3783400	0.2674846	0.2674846	0.001	-29.30	90.00	AVRG	
Chloroethane	0.2489500	0.1781140	0.1781140	0.001	-28.45	90.00	AVRG	
Trichlorofluoromethane	0.9651400	0.5419571	0.5419571	0.001	-43.85	90.00	AVRG	
1,1-Dichloroethene	0.2932900	0.2912258	0.2912258	0.001	-0.70	20.00	AVRG	
Carbon disulfide	0.9610600	0.9906426	0.9906426	0.001	3.08	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.2758500	0.2033527	0.2033527	0.001	-26.28	90.00	AVRG	
Acetone	595.28585	625.00000	0.0379614	0.001	-4.75	90.00	LINR	L/R
Methyl acetate	0.2362600	0.2608690	0.2608690	0.001	10.42	90.00	AVRG	
Methylene Chloride	0.2867500	0.3575029	0.3575029	0.001	24.67	90.00	AVRG	
trans-1,2-Dichloroethene	0.3092800	0.3257335	0.3257335	0.001	5.32	90.00	AVRG	
ethyl-tert-butyl ether	0.6080100	0.5762864	0.5762864	0.001	-5.22	90.00	AVRG	
1,1-Dichloroethane	0.6273200	0.5860585	0.5860585	0.1	-6.58	90.00	AVRG	
cis-1,2-Dichloroethene	0.2981800	0.3067620	0.3067620	0.001	2.88	90.00	AVRG	
2-butanone	0.0506900	0.0591736	0.0591736	0.001	16.74	90.00	AVRG	
Chloroform	101.22957	125.00000	0.6211986	0.001	-19.02	90.00	LINR	
1,1,1-Trichloroethane	0.8165700	0.5838726	0.5838726	0.001	-28.50	90.00	AVRG	
Carbon Tetrachloride	0.7079200	0.5139137	0.5139137	0.001	-27.40	90.00	AVRG	
Benzene	0.9989700	1.0135151	1.0135151	0.001	1.46	90.00	AVRG	
1,2-Dichloroethane	0.4846900	0.3681640	0.3681640	0.001	-24.04	90.00	AVRG	
Trichloroethene	0.3405600	0.4187298	0.4187298	0.001	-22.95	90.00	AVRG	I
1,2-Dichloropropane	0.2364900	0.2530958	0.2530958	0.001	7.02	20.00	AVRG	
Bromodichloromethane	0.5387000	0.4339753	0.4339753	0.001	-19.44	90.00	AVRG	
cis-1,3-Dichloropropene	0.4564600	0.4143052	0.4143052	0.001	-9.24	90.00	AVRG	
4-Methyl-2-pentanone	0.1584600	0.1867674	0.1867674	0.001	17.86	90.00	AVRG	
Toluene	0.8792700	0.9097378	0.9097378	0.001	3.46	20.00	AVRG	
trans-1,3-Dichloropropene	0.5585900	0.4954196	0.4954196	0.001	-11.31	90.00	AVRG	
1,1,2-Trichloroethane	0.2166600	0.2234232	0.2234232	0.001	3.12	90.00	AVRG	
Tetrachloroethene	0.4505900	0.4108316	0.4108316	0.001	-8.82	90.00	AVRG	
2-hexanone	0.1078200	0.1283483	0.1283483	0.001	19.04	90.00	AVRG	
Dibromochloromethane	0.4120000	0.3804207	0.3804207	0.001	-7.66	90.00	AVRG	
1,2-Dibromoethane	0.2525500	0.2314726	0.2314726	0.001	-8.34	90.00	AVRG	
Chlorobenzene	0.9610400	1.0050318	1.0050318	0.3	4.58	90.00	AVRG	
Ethylbenzene	0.5263400	0.5264613	0.5264613	0.001	0.02	20.00	AVRG	
m,p-Xylene	0.6520100	0.6634255	0.6634255	0.001	1.75	90.00	AVRG	
o-Xylene	0.6155600	0.6225477	0.6225477	0.001	1.14	90.00	AVRG	
Styrene	1.0039300	1.0361461	1.0361461	0.001	3.21	90.00	AVRG	
Bromoform	0.2242200	0.2076480	0.2076480	0.1	-7.39	90.00	AVRG	
Isopropyl Benzene	1.9904300	1.8354197	1.8354197	0.001	-7.79	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.4291000	0.4987416	0.4987416	0.3	16.23	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901126

Lab File ID: 9020308-BLK1R71_T Lab Sample ID: 9020308-BLK1

Date Analyzed: 02/03/09 Time Analyzed: 1532

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJBLCS	9020308-BS1	9020308-BS17	1611
B 02	YS01-DW002-0109	0901126-02	0901126-0271	1708
03	YS01-DW001-0109DL	0901126-01RE1	0901126-01D7	1736
04				
05				
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28				
29				
30				

COMMENTS: Methylene Chl 0.53 (0.50) ug/L

Initial Calibration Date: 2/2/2009

RRF and %RSD Calculations:

Compound Name: bromomethane
Lab Value: 0.340

Area of Compound	863230
Area of Internal STD	508202
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.340

Compound Name: 1,4-dichlorobenzene
Lab Value: 8.49

RRF of STD 1	1.7440
RRF of STD 2	1.4989
RRF of STD 3	1.7337
RRF of STD 4	1.4629
RRF of STD 5	1.5237
Calculated % RSD	8.49

Continuing Calibration File ID: 2/3/2009

RRF and %D Calculations:

Compound Name: 2-butanone
Lab Value: 0.059

Area of Compound	174060
Area of Internal STD	588303
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.059

Compound Name: 2-hexanone
Lab Value: 19.0

Average RRF	0.108
Calibration Check RRF	0.128
Calculated % D	-19.0

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0901126
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-DW001-0109 and YS01-DW002-0109.

The 2 aqueous samples listed above were received intact, properly refrigerated at 0.4°C, with proper documentation, in sealed shipping containers, on January 30, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0901126 are included in the sample data sections

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in both of the samples. In the initial analysis of YS01-DW001-0109, the on-column amount of target compounds exceeded the instrument's analytical range as defined by the highest concentration level of the Initial Calibration. The sample was reanalyzed using a smaller aliquot of raw sample to bring the on-column amount into range. We have reported both analyses of YS01-DW001-0109. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual quantitations were performed on one or more of the process files associated with this SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS) met all accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
GC/GCMS Volatile Supervisor
February 4, 2009

CTO-166

15822

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CHAIN OF CUSTODY

Page 1 of 1

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 -
Address: 5700 Cleveland St. Ste 101	Sampling Location: NWS Yorktown
City: VA Beach State: VA Zip: 23462	Turnaround time: Soil = 7day AQ = Per contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-6208	Are aqueous samples field filtered for metals? Y or N: N/A
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs OLM04.3 [3x40mL]	VOCs OLM04.3 [2x40mL]	* 8260B per Megan	pH / Sample Info (Lab Use)
090111726-01	YS01-DW001-0109	1/27/09	1300	AQ	3	X						X			
↓ -02	YS01-DW002-0109	1/27/09	1530	AQ	3	X						X			
090112727-01	YS01-S001-0109	1/27/09	1600	SO	1								X		

Lab Use Only

Sample Unpacked By: Kelly Saad
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Pat Murphy	Date/Time: 1/27/09 1830	Received by: Kelly Saad	Date/Time: 1/28/09 1015
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

039

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 02/02/09
Received Date: 02/03/09
Analysis Dates: 02/03/09

Cooler Temps: 5.3°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial calibration. Qualifications were required for the continuing calibrations due to low RRF and high %D values, see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

All criteria were met.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascellaro Date: 6,9,09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Lab File ID: 9B03003-TUN171 BFB Injection Date: 02/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1200

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	79.1 (97.2)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9B03003-CCV	9B03003-CCV171	02/03/09	1230
02	VBLKJB	9020308-BLK	9020308-BLK1R7	02/03/09	1532
03	VJBLCS	9020308-BS1	9020308-BS171_	02/03/09	1611
04	VJBLCSD	9020308-BSD	9020308-BSD171	02/03/09	1640
05	YS03-DW002-0209	0902009-03	0902009-0371	02/03/09	1853
06	YS03-DW004-0209	0902009-05	0902009-0571	02/03/09	1921
07	YS03-DW001-0209	0902009-02	0902009-0271	02/03/09	1950
08	YS03-DW003-0209	0902009-04	0902009-0471	02/03/09	2018
09	YS01-DW004-0209	0902009-01	0902009-0171	02/03/09	2047
10					
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FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Instrument ID: 5972HP71 Calibration Date: 02/03/09 Time: 1230

Lab File ID: 9B03003-CCV171 Init. Calib. Date(s): 02/02/09 02/02/09

Init. Calib. Times: 1430 1724

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	1.0919800	0.6997262	0.6997262	0.001	-35.92	90.00	AVRG	
Chloromethane	95.017176	125.00000	0.3576133	0.1	-23.99	90.00	LINR	J
Vinyl Chloride	100.82538	125.00000	0.4194522	0.001	-19.34	90.00	LINR	
Bromomethane	0.3783400	0.2674846	0.2674846	0.001	-29.30	90.00	AVRG	
Chloroethane	0.2489500	0.1781140	0.1781140	0.001	-28.45	90.00	AVRG	J
Trichlorofluoromethane	0.9651400	0.5419571	0.5419571	0.001	-43.85	90.00	AVRG	
1,1-Dichloroethene	0.2932900	0.2912258	0.2912258	0.001	-0.70	20.00	AVRG	
Carbon disulfide	0.9610600	0.9906426	0.9906426	0.001	3.08	90.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.2758500	0.2033527	0.2033527	0.001	-26.28	90.00	AVRG	
Acetone	595.28585	625.00000	0.0379614	0.001	-4.75	90.00	LINR	L/R
Methyl acetate	0.2362600	0.2608690	0.2608690	0.001	10.42	90.00	AVRG	
Methylene Chloride	0.2867500	0.3575029	0.3575029	0.001	24.67	90.00	AVRG	
trans-1,2-Dichloroethene	0.3092800	0.3257335	0.3257335	0.001	5.32	90.00	AVRG	
Methyl-tert-butyl ether	0.6080100	0.5762864	0.5762864	0.001	-5.22	90.00	AVRG	
1,1-Dichloroethane	0.6273200	0.5860585	0.5860585	0.1	-6.58	90.00	AVRG	
cis-1,2-Dichloroethene	0.2981800	0.3067620	0.3067620	0.001	2.88	90.00	AVRG	
2-butanone	0.0506900	0.0591736	0.0591736	0.001	16.74	90.00	AVRG	
Chloroform	101.22957	125.00000	0.6211986	0.001	-19.02	90.00	LINR	
1,1,1-Trichloroethane	0.8165700	0.5838726	0.5838726	0.001	-28.50	90.00	AVRG	
Carbon Tetrachloride	0.7079200	0.5139137	0.5139137	0.001	-27.40	90.00	AVRG	
Benzene	0.9989700	1.0135151	1.0135151	0.001	1.46	90.00	AVRG	
1,2-Dichloroethane	0.4846900	0.3681640	0.3681640	0.001	-24.04	90.00	AVRG	J
Trichloroethene	0.3405600	0.4187298	0.4187298	0.001	22.95	90.00	AVRG	
1,2-Dichloropropane	0.2364900	0.2530958	0.2530958	0.001	7.02	20.00	AVRG	
Bromodichloromethane	0.5387000	0.4339753	0.4339753	0.001	-19.44	90.00	AVRG	
cis-1,3-Dichloropropene	0.4564600	0.4143052	0.4143052	0.001	-9.24	90.00	AVRG	
4-Methyl-2-pentanone	0.1584600	0.1867674	0.1867674	0.001	17.86	90.00	AVRG	
Toluene	0.8792700	0.9097378	0.9097378	0.001	3.46	20.00	AVRG	
trans-1,3-Dichloropropene	0.5585900	0.4954196	0.4954196	0.001	-11.31	90.00	AVRG	
1,1,2-Trichloroethane	0.2166600	0.2234232	0.2234232	0.001	3.12	90.00	AVRG	
Tetrachloroethene	0.4505900	0.4108316	0.4108316	0.001	-8.82	90.00	AVRG	
2-hexanone	0.1078200	0.1283483	0.1283483	0.001	19.04	90.00	AVRG	
Dibromochloromethane	0.4120000	0.3804207	0.3804207	0.001	-7.66	90.00	AVRG	
1,2-Dibromoethane	0.2525500	0.2314726	0.2314726	0.001	-8.34	90.00	AVRG	
Chlorobenzene	0.9610400	1.0050318	1.0050318	0.3	4.58	90.00	AVRG	
Ethylbenzene	0.5263400	0.5264613	0.5264613	0.001	0.02	20.00	AVRG	
m,p-Xylene	0.6520100	0.6634255	0.6634255	0.001	1.75	90.00	AVRG	
o-Xylene	0.6155600	0.6225477	0.6225477	0.001	1.14	90.00	AVRG	
Styrene	1.0039300	1.0361461	1.0361461	0.001	3.21	90.00	AVRG	
Bromoform	0.2242200	0.2076480	0.2076480	0.1	-7.39	90.00	AVRG	
Isopropyl Benzene	1.9904300	1.8354197	1.8354197	0.001	-7.79	90.00	AVRG	
1,1,2,2-Tetrachloroethane	0.4291000	0.4987416	0.4987416	0.3	16.23	90.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902009

Lab File ID: 9020308-BLK1R71_T Lab Sample ID: 9020308-BLK1

Date Analyzed: 02/03/09 Time Analyzed: 1532

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJBLCS	9020308-BS1	9020308-BS17	1611
02	VJBLCSD	9020308-BSD1	9020308-BSD1	1640
B 03	YS03-DW002-0209	0902009-03	0902009-0371	1853
04	YS03-DW004-0209	0902009-05	0902009-0571	1921
05	YS03-DW001-0209	0902009-02	0902009-0271	1950
06	YS03-DW003-0209	0902009-04	0902009-0471	2018
07	YS01-DW004-0209	0902009-01	0902009-0171	2047
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COMMENTS: Methylene Chl 0.53 ug/L (0.50)

Initial Calibration Date: 2/2/2009

RRF and %RSD Calculations:

Compound Name: bromomethane
Lab Value: 0.340

Area of Compound	863230
Area of Internal STD	508202
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.340

Compound Name: 1,4-dichlorobenzene
Lab Value: 8.49

RRF of STD 1	1.7440
RRF of STD 2	1.4989
RRF of STD 3	1.7337
RRF of STD 4	1.4629
RRF of STD 5	1.5237
Calculated % RSD	8.49

Continuing Calibration File ID: 2/3/2009

RRF and %D Calculations:

Compound Name: 2-butanone
Lab Value: 0.059

Area of Compound	174060
Area of Internal STD	588303
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.059

Compound Name: 2-hexanone
Lab Value: 19.0

Average RRF	0.108
Calibration Check RRF	0.128
Calculated % D	-19.0

CompuChem

A division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0902009
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-DW004-0209, YS03-DW001-0209, YS03-DW002-0209, YS03-DW003-0209 AND YS03-DW004-0209

The 5 aqueous samples listed above were received intact, refrigerated at 5.2°C, with proper documentation, in sealed shipping containers, on February 3, 2009. The samples were scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the samples, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0902009 are included in the sample data sections.

Analysis holding time requirements were met for all of the samples. The pH values of the samples are equal to 1. Due to the results of a screen, samples YS03-DW001-0209and YS03-DW004-0209 were initially analyzed using a dilution of raw sample. The screen Reconstructed Ion Chromatogram (RIC) is included in the sample data package immediately following the RIC for the sample's reportable run. All of the system monitoring compounds met recovery criteria in the analyses of the samples. All of the internal standards met response and retention time criteria in the analyses of the samples.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual integrations were performed on 9B02005-CAL171 and 9B02005-CAL271 process files associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met overall accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy

Patricia A Murphy
Senior Scientist
February 4, 2009

CTO-166

16619

Page 1 of 1

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CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 Yorktown
Address: 5700 Cleveland Ste. 101	Sampling Location: NWS Yorktown Sites 1 and 3
City: VA Beach State: VA Zip: 23462	Turnaround time: AQ = 48hr SO = 7days
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type): VOCs SW846 [3x40mL] | VOCs SW846 [2x 2oz]

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 [3x40mL]	VOCs SW846 [2x 2oz]	pH / Sample Info (Lab Use)
0902009-01	YS01-DW004-0209	2/2/09	0830	AQ	3	3						3		
0902008-01	YS03-SO01-0209	2/2/09	1030	SO	2								2	
0902009-02	YS03-DW001-0209	2/2/09	1200	AQ	3	3						3		
-03	YS03-DW002-0209	2/2/09	1335	AQ	3	3						3		
-04	YS03-DW003-0209	2/2/09	1430	AQ	3	3						3		
-05	YS03-DW004-0209	2/2/09	1515	AQ	3	3						3		

Lab Use Only

Sample Unpacked By: Diana Byrd
Sample Order Entry By:
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or (NA)
625 & Phenol samples checked for chlorine? Y or (NA)
608 samples checked for pH between 5.0-9.0? Y or (NA)

Comments

Sample Custody

Relinquished by: P. Murphy	Date/Time: 2/2/09 1800	Received by: Diana Byrd	Date/Time: 2/3/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontact? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 5.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

047

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 01/29/09
Received Date: 01/30/09
Analysis Dates: 01/30/09

Cooler Temps: 0.4°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial and continuing calibrations due to low RRF and high %D values, see attached Form VI and VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks that required qualifications to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Ayuna Mascellaro **Date:** 6/9/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Lab File ID: 9A24006-TUN159 BFB Injection Date: 01/24/09

Instrument ID: 5972HP59 BFB Injection Time: 1518

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.8
75	30.0 - 60.0% of mass 95	48.6
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.6
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	Greater than 50.0% of mass 95	77.2
175	5.0 - 9.0% of mass 174	5.5 (7.1)1
176	95.0 - 101.0% of mass 174	76.8 (99.5)1
177	5.0 - 9.0% of mass 176	5.0 (6.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	9A24006-CAL	9A24006-CAL359	01/24/09	1610
02	VSTD010	9A24006-CAL	9A24006-CAL259	01/24/09	1638
03	VSTD005	9A24006-CAL	9A24006-CAL159	01/24/09	1707
04	VSTD200	9A24006-CAL	9A24006-CAL659	01/24/09	1735
05	VSTD100	9A24006-CAL	9A24006-CAL559	01/24/09	1804
06	VSTD050	9A24006-CAL	9A24006-CAL459	01/24/09	1832
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Instrument ID: 5972HP59 Calibration Date(s): 01/24/09 01/24/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1610 1832

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2	
Dichlorodifluoromethane	AVRG		0.89463078	5.176	15.000	
Chloromethane	AVRG		0.46158421	2.951	15.000	
Vinyl Chloride	AVRG		0.43847707	6.826	30.000	
Bromomethane	LINR	0.05747991	2.30045048	0.9950753	0.9900000	<-
Chloroethane	AVRG		0.30924292	11.937	15.000	
Trichlorofluoromethane	AVRG		0.88969771	3.455	15.000	
1,1-Dichloroethene	AVRG		0.35230021	5.235	30.000	
Carbon disulfide	AVRG		1.35190373	5.555	15.000	
1,1,2-trichloro-1,2,2-triflu	AVRG		0.58020276	6.864	15.000	
Acetone	AVRG		0.04466762	7.047	15.000	LIR
Methylene Chloride	AVRG		0.33399839	7.203	15.000	
trans-1,2-Dichloroethene	AVRG		0.38100286	4.388	15.000	
Methyl-tert-butyl ether	AVRG		0.70561511	7.559	15.000	
1,1-Dichloroethane	AVRG		0.69446767	3.225	15.000	
cis-1,2-Dichloroethene	AVRG		0.34922852	4.321	15.000	
2-butanone	AVRG		0.06534075	13.155	15.000	<-
loroform	AVRG		0.74657649	4.476	30.000	
,1,1-Trichloroethane	AVRG		0.76655728	5.361	15.000	
Carbon Tetrachloride	AVRG		0.71841433	5.230	15.000	
Benzene	AVRG		1.34908513	6.705	15.000	
1,2-Dichloroethane	AVRG		0.42440461	4.851	15.000	
Trichloroethene	AVRG		0.44354735	7.054	15.000	
1,2-Dichloropropane	AVRG		0.28988027	3.990	30.000	
Bromodichloromethane	AVRG		0.52004374	7.552	15.000	
cis-1,3-Dichloropropene	AVRG		0.54232196	7.888	15.000	
4-Methyl-2-pentanone	AVRG		0.22949426	13.844	15.000	
Toluene	AVRG		1.13653638	8.484	30.000	
trans-1,3-Dichloropropene	AVRG		0.63858431	9.303	15.000	
1,1,2-Trichloroethane	AVRG		0.29277288	9.526	15.000	
Tetrachloroethene	AVRG		0.46018330	7.282	15.000	
2-hexanone	LINR	0.25224518	5.23689993	0.9991224	0.9900000	
Dibromochloromethane	AVRG		0.49085710	11.085	15.000	
1,2-Dibromoethane	AVRG		0.33331760	11.263	15.000	
Chlorobenzene	AVRG		1.21626751	7.806	15.000	
Ethylbenzene	AVRG		0.66604234	7.037	30.000	
Styrene	AVRG		1.17504056	10.230	15.000	
Bromoform	AVRG		0.26240211	11.547	15.000	
Isopropyl Benzene	AVRG		2.25012175	5.272	15.000	
1,1,2,2-Tetrachloroethane	AVRG		0.82166939	9.471	15.000	
1,3-Dichlorobenzene	AVRG		2.05708958	7.583	15.000	
1,4-Dichlorobenzene	AVRG		2.06841649	5.811	15.000	
1,2-Dichlorobenzene	AVRG		1.72557282	8.923	15.000	
1,2-Dibromo-3-Chloropropane	LINR	0.10955791	5.88392865	0.9991490	0.9900000	
1,2,4-Trichlorobenzene	LINR	0.09203718	0.68201845	0.9988466	0.9900000	

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Lab File ID: 9A30002-TUN159 BFB Injection Date: 01/30/09

Instrument ID: 5972HP59 BFB Injection Time: 1026

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	19.3
75	30.0 - 60.0% of mass 95	50.0
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	76.3
175	5.0 - 9.0% of mass 174	5.6 (7.3)1
176	95.0 - 101.0% of mass 174	75.9 (99.6)1
177	5.0 - 9.0% of mass 176	5.3 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD050	9A30002-CCV	9A30002-CCV159	01/30/09	1050
02	VBLKIV	9013002-BLK	9013002-BLK159	01/30/09	1126
03	VIVLCSD	9013002-BSD	9013002-BSD159	01/30/09	1235
04	VIVLCS	9013002-BS1	9013002-BS1R59	01/30/09	1434
05	YS01-SO01-0109	0901127-01	0901127-0159	01/30/09	1706
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FORM V VOA

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Instrument ID: 5972HP59 Calibration Date: 01/30/09 Time: 1050

Lab File ID: 9A30002-CCV159 Init. Calib. Date(s): 01/24/09 01/24/09

Init. Calib. Times: 1610 1832

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF50 or AMOUNT	CCAL RRF50	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE	
Dichlorodifluoromethane	0.8946300	0.7633585	0.7633585	0.001	-14.67	25.00	AVRG	
Chloromethane	0.4615800	0.3989438	0.3989438	0.1	-13.57	25.00	AVRG	
Vinyl Chloride	0.4384800	0.4318043	0.4318043	0.001	-1.52	20.00	AVRG	
Bromomethane	230.03536	250.00000	0.3749968	0.001	-7.98	25.00	LINR	
Chloroethane	0.3092400	0.3421646	0.3421646	0.001	10.65	25.00	AVRG	
Trichlorofluoromethane	0.8897000	0.8673157	0.8673157	0.001	-2.52	25.00	AVRG	
1,1-Dichloroethene	0.3523000	0.3688046	0.3688046	0.001	4.68	20.00	AVRG	
Carbon disulfide	1.3519000	1.3783444	1.3783444	0.001	1.96	25.00	AVRG	
1,1,2-trichloro-1,2,2-triflu	0.5802000	0.6801061	0.6801061	0.001	17.22	25.00	AVRG	4/R
Acetone	0.0446700	0.0475655	0.0475655	0.001	6.48	25.00	AVRG	
Methylene Chloride	0.3340000	0.3704374	0.3704374	0.001	10.91	25.00	AVRG	
trans-1,2-Dichloroethene	0.3810000	0.4073515	0.4073515	0.001	6.92	25.00	AVRG	
Methyl-tert-butyl ether	0.7056200	0.7761895	0.7761895	0.001	10.00	25.00	AVRG	
1-Dichloroethane	0.6944700	0.7092441	0.7092441	0.1	2.13	25.00	AVRG	
s-1,2-Dichloroethene	0.3492300	0.3820181	0.3820181	0.001	9.39	25.00	AVRG	
2-butanone	0.0653400	0.0686414	0.0686414	0.001	5.05	25.00	AVRG	
Chloroform	0.7465800	0.7618439	0.7618439	0.001	2.04	20.00	AVRG	
1,1,1-Trichloroethane	0.7665600	0.7970482	0.7970482	0.001	3.98	25.00	AVRG	
Carbon Tetrachloride	0.7184200	0.7638258	0.7638258	0.001	6.32	25.00	AVRG	
Benzene	1.3490800	1.3749531	1.3749531	0.001	1.92	25.00	AVRG	
1,2-Dichloroethane	0.4244000	0.4245647	0.4245647	0.001	0.04	25.00	AVRG	
Trichloroethene	0.4435400	0.4644414	0.4644414	0.001	4.71	25.00	AVRG	
1,2-Dichloropropane	0.2898800	0.3024368	0.3024368	0.001	4.33	20.00	AVRG	
Bromodichloromethane	0.5200400	0.5599934	0.5599934	0.001	7.68	25.00	AVRG	
cis-1,3-Dichloropropene	0.5423200	0.5433681	0.5433681	0.001	0.19	25.00	AVRG	
4-Methyl-2-pentanone	0.2295000	0.2470192	0.2470192	0.001	7.63	25.00	AVRG	
Toluene	1.1365300	1.2157239	1.2157239	0.001	6.97	20.00	AVRG	
trans-1,3-Dichloropropene	0.6385800	0.6515766	0.6515766	0.001	2.04	25.00	AVRG	
1,1,2-Trichloroethane	0.2927700	0.3060291	0.3060291	0.001	4.53	25.00	AVRG	
Tetrachloroethene	0.4601800	0.5961271	0.5961271	0.001	29.54	25.00	AVRG	<-
2-hexanone	533.02485	625.00000	0.1435853	0.001	-14.72	25.00	LINR	
Dibromochloromethane	0.4908600	0.5374071	0.5374071	0.001	9.48	25.00	AVRG	
1,2-Dibromoethane	0.3333200	0.3585724	0.3585724	0.001	7.58	25.00	AVRG	
Chlorobenzene	1.2162700	1.2940552	1.2940552	0.3	6.40	25.00	AVRG	
Ethylbenzene	0.6660400	0.6842469	0.6842469	0.001	2.73	20.00	AVRG	
Styrene	1.1750400	1.2973370	1.2973370	0.001	10.41	25.00	AVRG	
Bromoform	0.2624000	0.2801615	0.2801615	0.1	6.77	25.00	AVRG	
Isopropyl Benzene	2.2501200	2.4461421	2.4461421	0.001	8.71	25.00	AVRG	
1,1,2,2-Tetrachloroethane	0.8216700	0.8191302	0.8191302	0.3	-0.31	25.00	AVRG	
1,3-Dichlorobenzene	2.0570900	2.0156934	2.0156934	0.001	-2.01	25.00	AVRG	
1,4-Dichlorobenzene	2.0684200	2.0406447	2.0406447	0.001	-1.34	25.00	AVRG	
2-Dichlorobenzene	1.7255700	1.7836888	1.7836888	0.001	3.37	25.00	AVRG	

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKIV

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901127

Lab File ID: 9013002-BLK159 Lab Sample ID: 9013002-BLK1

Date Analyzed: 01/30/09 Time Analyzed: 1126

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

Instrument ID: 5972HP59

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VIVLCSD	9013002-BSD1	9013002-BSD1	1235
02	VIVLCS	9013002-BS1	9013002-BS1R	1434
B 03	YS01-SO01-0109	0901127-01	0901127-0159	1706
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COMMENTS: Methylene Chl 1.0 J ug/L (5.0)

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Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE
SDG # 0901127
PROTOCOL: SW-846

SAMPLE IDENTIFICATION:

YS01-SO01-0109

The one soil sample listed above was received intact, at temperature of 0.4 °C, with proper documentation, in sealed shipping container, on January 30, 2009. The sample was scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, Method 8260B were used to prepare and analyze this sample, with the exceptions and/or additions requested by the client. The percent moisture value of this soil sample is 17.

Volatiles Section

Analysis holding time requirements were met for this sample.

There were no volatile project analyte detected above Quantitation Limit in this sample.

Manual integrations were performed on one or more of the process files associated with this SDG. There were no manual integrations performed on this sample. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG.

All bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG.

All QC criteria were met for all initial and continuing calibration standards associated to this SDG.

All of the system monitoring compounds met recovery criteria in the analysis of these samples.

All of the internal standards met response and retention time criteria in the analysis of these samples.

The associated method blank met all quality control criteria. The method blank contained levels of methylene chloride within allowable limit.

There were no associated duplicate matrix spikes for this SDG. Duplicate Laboratory Control Samples (LCS/LCSD) were analyzed instead. The associated (LCS/LCSD) prepared and analyzed along with these samples met all accuracy and precision criteria, with the following exception. The recoveries of benzene and tetrachloroethene in the LCS and tetrachloroethene in the LCSD were above the control limits.

An uncertainty of these test results may be estimated from the recovery of the surrogates added to the sample prior to sample preparation or from the recovery of spiked compound(s) in the associated laboratory control sample. Further information is available upon request.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Elsie S. Byrd
Senior Scientist I
February 5, 2009

CTO-166

15822

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Page 1 of 1

Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 -
Address: 5700 Cleveland St. Ste 101	Sampling Location: NWS Yorktown
City: VA Beach State: VA Zip: 23462	Turnaround time: Soil = 7day AQ = Per contract
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757)671-6208	Are aqueous samples field filtered for metals? Y or N: N/A
Sampler's Name: Pete Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	Requested Analysis: VOCs OLM04.3 [3x40mL]	VOCs OLM04.3 [2x4oz]	* 8260B per Megan	pH / Sample Info (Lab Use)
0901126-01	YSO1-DW001-0109	1/29/09	1300	AQ	3	X						X			
-02	YSO1-DW002-0109	1/29/09	1530	AQ	3	X						X			
0901127-01	YSO1-SO01-0109	1/29/09	1600	SO	1								X		

* 8260B per Megan

Lab Use Only

Sample Unpacked By: Kelly Seal
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: Pete Murphy	Date/Time: 1/29/09 1830	Received by: Kelly Seal	Date/Time: 1/30/09 1115
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontract? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 0.4 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 02/02/09
Received Date: 02/03/09
Analysis Dates: 02/06/09

Cooler Temps: 5.3°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

Qualifications were required for the initial calibration due to low RRF values; see attached Form VI.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks however no qualifications were required to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Mascitti Date: 6/9/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Lab File ID: 9B06002-TUN159 BFB Injection Date: 02/06/09

Instrument ID: 5972HP59 BFB Injection Time: 1233

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) Y

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	18.4
75	30.0 - 60.0% of mass 95	47.8
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.2
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	78.2
175	5.0 - 9.0% of mass 174	5.6 (7.1)1
176	95.0 - 101.0% of mass 174	78.6 (100.5)1
177	5.0 - 9.0% of mass 176	4.9 (6.3)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD020	9B06002-CAL	9B06002-CAL359	02/06/09	1338
02	VSTD010	9B06002-CAL	9B06002-CAL259	02/06/09	1406
03	VSTD005	9B06002-CAL	9B06002-CAL159	02/06/09	1434
04	VSTD100	9B06002-CAL	9B06002-CAL559	02/06/09	1502
05	VSTD200	9B06002-CAL	9B06002-CAL659	02/06/09	1531
06	VSTD050	9B06002-CAL	9B06002-CAL4R5	02/06/09	1559
07	VBLKJK	9020622-BLK	9020622-BLK159	02/06/09	1753
08	VJKLCS	9020622-BS1	9020622-BS159	02/06/09	1928
09	VJKLCSD	9020622-BSD	9020622-BSD159	02/06/09	1956
10	YS03-SO01-0209	0902008-01	0902008-01R59	02/06/09	2343
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FORM 6
VOLATILE INITIAL CALIBRATION DATA

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0902008

Instrument ID: 5972HP59 Calibration Date(s): 02/06/09 02/06/09

Column: SPB-624 ID: 0.32 (mm) Calibration Time(s): 1338 1559

COMPOUND	CURVE	COEFFICENTS A0	COEFFICENTS A1	%RSD OR R^2	MAX %RSD OR R^2
Dichlorodifluoromethane	AVRG		0.86201056	10.351	15.000
Chloromethane	AVRG		0.40584270	9.005	15.000
Vinyl Chloride	AVRG		0.54797917	11.524	30.000
Bromomethane	LINR	0.02841710	2.59153421	0.9974140	0.9900000
Chloroethane	AVRG		0.33089638	14.347	15.000
Trichlorofluoromethane	AVRG		0.78678325	10.698	15.000
1,1-Dichloroethene	AVRG		0.33221608	12.008	30.000
Carbon disulfide	AVRG		1.26239212	11.790	15.000
1,1,2-trichloro-1,2,2-triflu	AVRG		0.53192855	9.051	15.000
Acetone	AVRG		0.03941005	12.879	15.000
Methylene Chloride	AVRG		0.32265235	9.382	15.000
trans-1,2-Dichloroethene	AVRG		0.36164307	10.800	15.000
Methyl-tert-butyl ether	AVRG		0.60765304	10.677	15.000
1,1-Dichloroethane	AVRG		0.60548355	8.782	15.000
cis-1,2-Dichloroethene	AVRG		0.33597967	8.602	15.000
-butanone	LINR	0.17747740	15.1208143	0.9996605	0.9900000
loroform	AVRG		0.63785852	9.678	30.000
1,1,1-Trichloroethane	AVRG		0.64916751	9.340	15.000
Carbon Tetrachloride	AVRG		0.60998354	10.666	15.000
Benzene	AVRG		1.31642975	8.207	15.000
1,2-Dichloroethane	AVRG		0.34092280	10.161	15.000
Trichloroethene	AVRG		0.42455681	12.161	15.000
1,2-Dichloropropane	AVRG		0.26773662	7.126	30.000
Bromodichloromethane	AVRG		0.44544703	12.057	15.000
cis-1,3-Dichloropropene	AVRG		0.48907902	11.578	15.000
4-Methyl-2-pentanone	LINR	0.26323330	3.95665663	0.9977065	0.9900000
Toluene	AVRG		1.12234092	9.607	30.000
trans-1,3-Dichloropropene	AVRG		0.58636577	10.937	15.000
1,1,2-Trichloroethane	AVRG		0.26746634	14.196	15.000
Tetrachloroethene	AVRG		0.46473171	9.556	15.000
2-hexanone	LINR	0.28160420	5.73891573	0.9978854	0.9900000
Dibromochloromethane	AVRG		0.45701515	13.811	15.000
1,2-Dibromoethane	LINR	0.08171930	2.71551392	0.9985418	0.9900000
Chlorobenzene	AVRG		1.20842645	7.846	15.000
Ethylbenzene	AVRG		0.64447295	7.760	30.000
Styrene	AVRG		1.15874254	10.352	15.000
Bromoform	LINR	0.10041050	3.37041043	0.9981095	0.9900000
Isopropyl Benzene	AVRG		2.15709183	7.070	15.000
1,1,2,2-Tetrachloroethane	AVRG		0.77749117	12.248	15.000
1,3-Dichlorobenzene	AVRG		2.05578283	10.563	15.000
1,4-Dichlorobenzene	AVRG		2.06002760	7.460	15.000
1,2-Dichlorobenzene	AVRG		1.75337064	8.940	15.000
1,2-Dibromo-3-Chloropropane	LINR	0.13650190	6.10414497	0.9970443	0.9900000
1,2,4-Trichlorobenzene	LINR	0.08782090	0.72502100	0.9986085	0.9900000

L/R

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SDG NARRATIVE
SDG # 0902008
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS03-SO01-0209

The 1 soil sample listed above was received intact, properly refrigerated at 5.3°C with proper documentation, in sealed shipping containers, on February 3, 2009. Sample was scheduled for the requested analyses of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0902008 are included in the sample data sections.

Analysis holding time requirements were met for the sample. Sample percent moisture value was equal to 26 percent. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in the sample. The system monitoring compounds met recovery criteria in the analyses of the sample. All of the internal standards met response and retention time criteria in the analyses of the sample.

All Bromofluorobenzene (BFB) abundance criteria were met for tunes associated to this SDG. Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. There is no Form VII in the deliverables package for the batch analyzed on instrument 59 on 2/6/09 associated with the BFB injected at 1233. This batch included an initial calibration and the relevant relative response factors are all displayed on the appropriate Form VI. The initial calibration met all acceptance criteria and therefore samples could be analyzed without having to inject a continuing calibration verification standard. Manual integrations were performed on 9B06002CAL159, 9B06002CAL259, 9B06002CAL359 and 9B06002CAL4R59, process file associated with this SDG. The reasons have been coded with explanations provided in the notice included in the narrative section of the SDG. The associated method blanks met all quality control criteria. The associated Laboratory Control Samples (LCS/LCSD) met all accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package complies with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Patricia A Murphy
Senior Scientist
February 11, 2009

CTO-166

16619

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Page 1 of 1

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Courier
Airbill No.
Sampling Complete? Y or N

Client/Reporting Information	Project Information
Company Name: CH2M HILL	Project Name: CTO-166 Yorktown
Address: 5700 Cleveland Ste. 101	Sampling Location: NWS Yorktown Sites 1 and 3
City: VA Beach State: VA Zip: 23462	Turnaround time: AQ = 48hr. SO = 7days
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?

Requested Analysis (include method and bottle type)

Matrices: GW - Ground water; WW - Waste water; SW - Surface water; SO - Soil/Sediment; TB - Trip Blank; RI - Rinsate; WP - Wipe; O - Other

CompuChem No (Lab Use)	Field ID	Collection Date	Collection Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW846 [3x40mL]	VOCs SW846 [2x 20z]	pH / Sample Info (Lab Use)
0902009-01	YS01-DW004-0209	2/2/09	0830	AQ	3	3						3		
0902008-01	YS03-SO01-0209	2/2/09	1030	SO	2								2	
0902009-02	YS03-DW001-0209	2/2/09	1200	AQ	3	3						3		
-03	YS03-DW002-0209	2/2/09	1335	AQ	3	3						3		
-04	YS03-DW003-0209	2/2/09	1430	AQ	3	3						3		
-05	YS03-DW004-0209	2/2/09	1545	AQ	3	3						3		

Lab Use Only

Sample Unpacked By: Diane Byrd
Sample Order Entry By:
Samples Received in Good Condition? Y or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA
625 & Phenol samples checked for chlorine? Y or NA
608 samples checked for pH between 5.0-9.0? Y or NA

Comments

Sample Custody

Relinquished by: P. Murphy	Date/Time: 2/2/09 1800	Received by: Diane Byrd	Date/Time: 2/3/09 0920
Relinquished by:	Date/Time:	Received by:	Date/Time:

Subcontact? Y or N If yes, where?
Custody Seal(s) intact? Y or N
On Ice? Y or N
Cooler Temp: 5.3 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for customer

062

Data Completeness

The data package was received complete and intact. Resubmissions were not required. (SW846 Method 8260B with Region III modifications.)

Holding Times

Sampling Date: 01/30/09
Received Date: 01/31/09
Analysis Dates: 02/03/09

Cooler Temps: 0.1°C

All holding time requirements were met.

Calibrations

Mass assignments were verified by the injection of BFB.

No qualifications were required for the initial calibration. Qualifications were required for the continuing calibration due to low RRF values; see attached Form VII.

Internal Standards

All criteria were met.

Blank Summary

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X or 10X criteria.
- Apply the same data validation guidelines to any associated field QC blanks and all associated samples.
- Qualification/Action codes:

No Action -	The sample result is greater than the CRQL and greater than five times (5X) or ten times (10x) the blank value.
B -	The sample result is less than five times (5X) or ten times (10x) (methylene chloride, acetone and 2-butanone) the blank value.

Contamination was exhibited in the method blanks however no qualifications were required to the data. No QC blanks were associated with these samples.

Surrogates

All criteria were met.

Laboratory Control Sample

No qualifications were required.

Matrix Spike/Spike Duplicate Samples

An MS/MSD was not submitted for this data package.

Field Duplicate Sample

A field duplicate was not submitted for this data package.

Specific Comments:

All sample results were reported within the calibration range of the instruments.

Detection limits were acceptable. Raw data and calculations were verified.

As requested, we have limited the supporting documentation, found with these worksheets, to those forms that indicate qualifications.

Reviewer Laura Massetti **Date:** 6/9/09

FORM 5
VOLATILE ORGANIC INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Lab File ID: 9B03003-TUN171 BFB Injection Date: 02/03/09

Instrument ID: 5972HP71 BFB Injection Time: 1200

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	20.7
75	30.0 - 60.0% of mass 95	45.7
95	Base Peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	81.4
175	5.0 - 9.0% of mass 174	6.3 (7.7)1
176	95.0 - 101.0% of mass 174	79.1 (97.2)1
177	5.0 - 9.0% of mass 176	5.5 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD005	9B03003-CCV	9B03003-CCV171	02/03/09	1230
02	VBLKJB	9020308-BLK	9020308-BLK1R7	02/03/09	1532
03	VJBLCS	9020308-BS1	9020308-BS171_	02/03/09	1611
04	VJBLCSD	9020308-BSD	9020308-BSD171	02/03/09	1640
05	YS01-DW003-0109	0901129-01	0901129-0171	02/03/09	1816
06					
07					
08					
09					
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12					
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17					
18					
19					
20					
21					
22					

FORM 7B
VOLATILE CALIBRATION VERIFICATION SUMMARY

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Instrument ID: 5972HP71 Calibration Date: 02/03/09 Time: 1230

Lab File ID: 9B03003-CCV171 Init. Calib. Date(s): 02/02/09 02/02/09

Init. Calib. Times: 1430 1724

GC Column: SPB-624 ID: 0.32 (mm)

COMPOUND	RRF or AMOUNT	RRF5 or AMOUNT	CCAL RRF5	MIN RRF	%D or %DRIFT	MAX %D or %DRIFT	CURV TYPE
Dichlorodifluoromethane	1.0919800	0.6997262	0.6997262	0.001	-35.92	90.00	AVRG
Chloromethane	95.017176	125.00000	0.3576133	0.1	-23.99	90.00	LINR
Vinyl Chloride	100.82538	125.00000	0.4194522	0.001	-19.34	90.00	LINR
Bromomethane	0.3783400	0.2674846	0.2674846	0.001	-29.30	90.00	AVRG
Chloroethane	0.2489500	0.1781140	0.1781140	0.001	-28.45	90.00	AVRG
Trichlorofluoromethane	0.9651400	0.5419571	0.5419571	0.001	-43.85	90.00	AVRG
1,1-Dichloroethene	0.2932900	0.2912258	0.2912258	0.001	-0.70	20.00	AVRG
Carbon disulfide	0.9610600	0.9906426	0.9906426	0.001	3.08	90.00	AVRG
1,1,2-trichloro-1,2,2-triflu	0.2758500	0.2033527	0.2033527	0.001	-26.28	90.00	AVRG
etone	595.28585	625.00000	0.0379614	0.001	-4.75	90.00	LINR
chyl acetate	0.2362600	0.2608690	0.2608690	0.001	10.42	90.00	AVRG
Methylene Chloride	0.2867500	0.3575029	0.3575029	0.001	24.67	90.00	AVRG
trans-1,2-Dichloroethene	0.3092800	0.3257335	0.3257335	0.001	5.32	90.00	AVRG
Methyl-tert-butyl ether	0.6080100	0.5762864	0.5762864	0.001	-5.22	90.00	AVRG
1,1-Dichloroethane	0.6273200	0.5860585	0.5860585	0.1	-6.58	90.00	AVRG
cis-1,2-Dichloroethene	0.2981800	0.3067620	0.3067620	0.001	2.88	90.00	AVRG
2-butanone	0.0506900	0.0591736	0.0591736	0.001	16.74	90.00	AVRG
Chloroform	101.22957	125.00000	0.6211986	0.001	-19.02	90.00	LINR
1,1,1-Trichloroethane	0.8165700	0.5838726	0.5838726	0.001	-28.50	90.00	AVRG
Carbon Tetrachloride	0.7079200	0.5139137	0.5139137	0.001	-27.40	90.00	AVRG
Benzene	0.9989700	1.0135151	1.0135151	0.001	1.46	90.00	AVRG
1,2-Dichloroethane	0.4846900	0.3681640	0.3681640	0.001	-24.04	90.00	AVRG
Trichloroethene	0.3405600	0.4187298	0.4187298	0.001	22.95	90.00	AVRG
1,2-Dichloropropane	0.2364900	0.2530958	0.2530958	0.001	7.02	20.00	AVRG
Bromodichloromethane	0.5387000	0.4339753	0.4339753	0.001	-19.44	90.00	AVRG
cis-1,3-Dichloropropene	0.4564600	0.4143052	0.4143052	0.001	-9.24	90.00	AVRG
4-Methyl-2-pentanone	0.1584600	0.1867674	0.1867674	0.001	17.86	90.00	AVRG
Toluene	0.8792700	0.9097378	0.9097378	0.001	3.46	20.00	AVRG
trans-1,3-Dichloropropene	0.5585900	0.4954196	0.4954196	0.001	-11.31	90.00	AVRG
1,1,2-Trichloroethane	0.2166600	0.2234232	0.2234232	0.001	3.12	90.00	AVRG
Tetrachloroethene	0.4505900	0.4108316	0.4108316	0.001	-8.82	90.00	AVRG
2-hexanone	0.1078200	0.1283483	0.1283483	0.001	19.04	90.00	AVRG
Dibromochloromethane	0.4120000	0.3804207	0.3804207	0.001	-7.66	90.00	AVRG
1,2-Dibromoethane	0.2525500	0.2314726	0.2314726	0.001	-8.34	90.00	AVRG
lorobenzene	0.9610400	1.0050318	1.0050318	0.3	4.58	90.00	AVRG
ylbenzene	0.5263400	0.5264613	0.5264613	0.001	0.02	20.00	AVRG
m,p-Xylene	0.6520100	0.6634255	0.6634255	0.001	1.75	90.00	AVRG
o-Xylene	0.6155600	0.6225477	0.6225477	0.001	1.14	90.00	AVRG
Styrene	1.0039300	1.0361461	1.0361461	0.001	3.21	90.00	AVRG
Bromoform	0.2242200	0.2076480	0.2076480	0.1	-7.39	90.00	AVRG

L/R

FORM 4
VOLATILE METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

VBLKJB

Lab Name: COMPUCHEM Contract: 8260B

Lab Code: LIBRTY Case No.: SAS No.: SDG No.: 0901129

Lab File ID: 9020308-BLK1R71_T Lab Sample ID: 9020308-BLK1

Date Analyzed: 02/03/09 Time Analyzed: 1532

GC Column: SPB-624 ID: 0.32 (mm) Heated Purge: (Y/N) N

Instrument ID: 5972HP71

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	VJBLCS	9020308-BS1	9020308-BS17	1611
02	VJBLCSD	9020308-BSD1	9020308-BSD1	1640
B 03	YS01-DW003-0109	0901129-01	0901129-0171	1816
04				
05				
06				
07				
08				
09				
10				
11				
12				
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28				
29				
30				

COMMENTS: Methylene Chl 0.53 (0.50) ug/L

Initial Calibration Date: 2/2/2009

RRF and %RSD Calculations:

Compound Name: bromomethane
Lab Value: 0.340

Area of Compound	863230
Area of Internal STD	508202
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.340

Compound Name: 1,4-dichlorobenzene
Lab Value: 8.49

RRF of STD 1	1.7440
RRF of STD 2	1.4989
RRF of STD 3	1.7337
RRF of STD 4	1.4629
RRF of STD 5	1.5237
Calculated % RSD	8.49

Continuing Calibration File ID: 2/3/2009

RRF and %D Calculations:

Compound Name: 2-butanone
Lab Value: 0.059

Area of Compound	174060
Area of Internal STD	588303
Conc. of Internal STD	125
Conc. of Compound	625
Calculated RRF	0.059

Compound Name: 2-hexanone
Lab Value: 19.0

Average RRF	0.108
Calibration Check RRF	0.128
Calculated % D	-19.0

CompuChem

a division of Liberty Analytical Corporation
501 Madison Avenue
Cary, N.C. 27513
Tel: 919/379-4100 Fax: 919/379-4050

SDG NARRATIVE

SDG # 0901129
PROTOCOL: SW-846
SAMPLE IDENTIFICATIONS: YS01-SW003-0109.

The 1 aqueous sample listed above was received intact, properly refrigerated at 0.1°C, with proper documentation, in sealed shipping containers, on January 31, 2009. The sample was scheduled for the requested analysis of the volatile fraction. SW-846, 3rd Edition, Update 3, 8260B was used to prepare and analyze the sample, with the exceptions and/or additions requested by the client. All pertinent Quality Assurance notices are included in the narrative section, and all pertinent Laboratory notices for SDG 0901129 are included in the sample data sections

Analysis holding time requirements were met for the sample. The pH value of the sample is equal to 1. There were volatile Project/Target Compound List (TCL) analytes identified above the Contract Required Quantitation Limit (CRQL) in the sample. All of the system monitoring compounds met recovery criteria in the analysis of the sample. All of the internal standards met response and retention time criteria in the analysis of the sample.

Overall QC criteria were met for all initial and continuing calibration standards associated to this SDG. Manual quantitations were performed on one or more of the process files associated with this SDG. The associated method blank met all quality control criteria. The associated Laboratory Control Samples (LCS) met all accuracy criteria. No matrix spike/matrix spike duplicate (MS/MSD) samples were requested for the volatile fraction with this SDG.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Furthermore, I certify that the tests used in this report meet all requirements of the NELAC standards unless otherwise stated in the SDG narrative or QA notice. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his/her designee, as verified by the following signature.

Kenneth Grzybowski
GC/GCMS Volatile Supervisor
February 4, 2009

CTO-166

15821

Page 1 of 1

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CHAIN OF CUSTODY

CompuChem
a division of Liberty Analytical Corp.

501 Madison Ave.
Cary, NC 27513
Phone: 919-379-4100 Fax 919-379-4040

Courier:
Airbill No.:
Sampling Complete? Y or N

Client/Reporting Information	Project Information	Requested Analysis (include method and bottle type)	Matrices
Company Name: CH2M HILL	Project Name: CTO-166 DPT GW		GW - Ground water
Address: 5700 Cleveland St. Ste. 101	Sampling Location: NWS Yorktown Site 1		WW - Waste water
City: VA Beach State: VA Zip: 23462	Turnaround time: AQ = 48hr		SW - Surface water
Project Contact: Chelsea Bennet	Batch QC or Project Specific? If Specific, which Sample ID?		SO - Soil/Sediment
Phone #: (757) 671-6208	Are aqueous samples field filtered for metals? Y or N: N/A		TB - Trip Blank
Sampler's Name: Pat Murphy	Are high concentrations expected? Y or N? If yes, which ID(s)?		RI - Rinsate
			WP - Wipe
			O - Other

VOCs SW8260 [3x40mL] 82608 Per Megan VA 1/31/09

CompuChem No (Lab Use)	Field ID	Collection: Date	Collection: Time	Matrix	# of bottles	Number of Preserved Bottles: HCl	NaOH	HNO3	H2SO4	MEOH	Other	VOCs SW8260 [3x40mL]	pH / Sample Info (Lab Use)
0901129-01	YS01-DW003-0109	1/31/09	1130	AQ	3	3						3	

Lab Use Only

Sample Unpacked By: J-Rdp
Sample Order Entry By: J-Rdp
Samples Received in Good Condition? (Y) or N
If no, explain:

Cyanide samples checked for sulfide & chlorine? Y or NA (NA)
625 & Phenol samples checked for chlorine? Y or NA (NA)
608 samples checked for pH between 5.0-9.0? Y or NA (NA)

Comments

Sample Custody

Relinquished by: P. Murphy	Date/Time: 1/31/09 1800	Received by: J-Rdp	Date/Time: 1/31/09 1055
Relinquished by:	Date/Time:	Received by:	Date/Time:
Subcontract? Y or (N) If yes, where?	Custody Seal(s) intact? (Y) or N	On Ice? (Y) or N	Cooler Temp: 0.1 °C

Samples stored 60 days after date report mailed at no extra charge.

White & Yellow copy to lab • Pink copy for custom[illegible]

070

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 17, 2009
SDG # R0904166, Columbia Analytical Services
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # R0904166. The data validation was performed in accordance with the SW-846 methods, 6010B & 7471A for Simultaneously Extracted Metals (SEM) and the EPA method 821/R-91-100 for Acid Volatile Sulfide (AVS). Also used in the validation of these samples were the Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. Please note that samples YS03-SD03-0709 and YS03-SD04-0709 were incorrectly noted throughout the laboratory data package as YS01-SD03-0709 and YS01-SD04-0709, respectively. These IDs were corrected on the Form 1s in this validation report but corrections were not requested from the laboratory for the data package. The QC tracking memo is included in this validation report and contains a cross reference of the sample IDs and alias sample IDs. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	AVS/SEM
YS03-SD03-0709	R0904166-15	soil	X
YS03-SD04-0709	R0904166-16	soil	X
YS01-SD30-0709	R0904166-14	soil	X
YS01-SD31-0709	R0904166-12	soil	X
YS01-SD31P-0709	R0904166-13	soil	X
YS01-SD32-0709	R0904166-04	soil	X
YS01-SD33-0709	R0904166-03	soil	X
YS03-SD05-0709	R0904166-10	soil	X
YS03-SD05P-0709	R0904166-11	soil	X
YS03-SD06-0709	R0904166-09	soil	X
YS03-SD07-0709	R0904166-08	soil	X
YS03-SD08-0709	R0904166-06	soil	X
YS03-SD09-0709	R0904166-07	soil	X
YS03-SD10-0709	R0904166-05	soil	X
YS03-SD11-0709	R0904166-02	soil	X
YS03-SD12-0709	R0904166-01	soil	X
YS03-SD10-0709 MS	R0904166-05MS	soil	X
YS03-SD10-0709 MSD	R0904166-05MSD	soil	X

The following quality control samples were provided with this SDG: sample YS01-SD31P-0709-field duplicate of sample YS01-SD31-0709; and sample YS03-SD05P-0709 -field duplicate of sample YS03-SD05-0709.

The samples were evaluated based on the following criteria:

- Data Completeness *
- Sample Condition *
- Technical Holding Times *
- Initial/Continuing Calibrations *
- CRI Standards *
- Interference Check Sample *
- Blanks *
- Laboratory Control Samples *
- Matrix Spike Recoveries
- Matrix Duplicate RPDs
- Post Digestion Spike Recoveries *
- Serial Dilutions *
- Field Duplicates
- Identification/Quantitation *
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No analytical data required rejection due to quality control issues.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following

paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

AVS/SEM

The associated MS/MSD pair exhibited high recoveries for zinc so results required qualification as biased high K in the field samples.

The associated matrix duplicate exhibited non-compliant RPDs for AVS and lead, so results required qualification as estimated J/UJ in the field samples.

One of the field duplicate pairs exhibited non-compliant RPDs for lead and zinc. These analytes required qualification as estimated in the field duplicate pair. Please note that both of these analytes were flagged due to other QC issues.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 7/21-23/09 and samples were received at the laboratory 7/28/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Matrix Spike Recoveries

AVS/SEM

The matrix spike analysis of sample YS03-SD10-0709 exhibited non-compliant %Rs (<80% or >120%) for one analyte. Specific action is noted in the following table.

MS	Analytes	Samples Affected	%R	Q Flag	Q Code
YS03-SD10-0709	zinc	all samples	135%	K	MSH

Matrix Duplicates

AVS/SEM

The matrix duplicate analysis of sample YS03-SD10-0709 exhibited non-compliant RPDs (>20%) for two analyte. Specific action is noted in the following table.

MD	Analytes	Samples Affected	RPD	Q Flag	Q Code
YS03-SD10-0709	AVS lead	all samples	88 29	J/UJ	MDP

Field Duplicate

AVS/SEM

One of the field duplicate pairs submitted in this SDG exhibited non-compliant RPDs for two analytes. Specific action is noted in the following table.

FD Pair	Analytes	RPD	Q Flag	Q Code
YS01-SD31-0709, YS01-SD31P-0709	lead*	34%	J	FD
	zinc*	52%		

*Both analytes were already flagged due to matrix spike or matrix duplicate issues.

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

AVS/SEM

Sample ID	Analyte	Results	Q Flag	Q code
all samples	zinc	+	K	MSH
all samples	AVS lead	+/-	J/UJ	MDP
YS01-SD31-0709, YS01-SD31P-0709	lead* zinc*	+	J	FD

*both analytes were already flagged due to matrix spike or matrix duplicate issues.

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/21/09 1000
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS03-SD12-0709
Lab Code: R0904166-001

Basis: Dry
Percent Solids: 36.1

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.0014		µMole/g	0.0011	1	8/ 5/09	8/7/09 01:03
Copper	6010B	0.0475		µMole/g	0.0080	1	8/ 5/09	8/7/09 01:03
Lead	6010B	0.0394	J MDP	µMole/g	0.0062	1	8/ 5/09	8/7/09 01:03
Nickel	6010B	0.032		µMole/g	0.017	1	8/ 5/09	8/7/09 01:03
Silver	6010B	0.0024	U	µMole/g	0.0024	1	8/ 5/09	8/7/09 01:03
Zinc	6010B	0.556	K MSH	µMole/g	0.078	1	8/ 5/09	8/7/09 01:03

JAC 101309

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/21/09 1030
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD11-0709		
Lab Code:	R0904166-002	**Basis:**	Dry
		Percent Solids:	38.6

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.0017**		µMole/g	0.0011	1	8/ 5/09	8/7/09 01:09
Copper	6010B	**0.0584**		µMole/g	0.0076	1	8/ 5/09	8/7/09 01:09
Lead	6010B	**0.0438**	J MSP	µMole/g	0.0059	1	8/ 5/09	8/7/09 01:09
Nickel	6010B	**0.035**		µMole/g	0.016	1	8/ 5/09	8/7/09 01:09
Silver	6010B	0.0022	U	µMole/g	0.0022	1	8/ 5/09	8/7/09 01:09
Zinc	6010B	**0.660**	K MSH	µMole/g	0.074	1	8/ 5/09	8/7/09 01:09

JAC 10/13/09

Comments:

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/21/09 1100
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS01-SD33-0709
Lab Code: R0904166-003

Basis: Dry
Percent Solids: 38.6

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.0014**		µMole/g	0.0010	1	8/ 5/09	8/7/09 01:15
Copper	6010B	**0.0566**		µMole/g	0.0074	1	8/ 5/09	8/7/09 01:15
Lead	6010B	**0.0403**	J MDP	µMole/g	0.0057	1	8/ 5/09	8/7/09 01:15
Nickel	6010B	**0.031**		µMole/g	0.016	1	8/ 5/09	8/7/09 01:15
Silver	6010B	0.0022	U	µMole/g	0.0022	1	8/ 5/09	8/7/09 01:15
Zinc	6010B	**0.518**	K MSH	µMole/g	0.072	1	8/ 5/09	8/7/09 01:15

JAC 101309

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/21/09 1200
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD32-0709		
Lab Code:	R0904166-004	**Basis:**	Dry
		Percent Solids:	30.2

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.0022**		µMole/g	0.0014	1	8/ 5/09	8/7/09 01:21
Copper	6010B	**0.0208**		µMole/g	0.0099	1	8/ 5/09	8/7/09 01:21
Lead	6010B	**0.0217**	J MDP	µMole/g	0.0076	1	8/ 5/09	8/7/09 01:21
Nickel	6010B	**0.038**		µMole/g	0.021	1	8/ 5/09	8/7/09 01:21
Silver	6010B	0.0029	U	µMole/g	0.0029	1	8/ 5/09	8/7/09 01:21
Zinc	6010B	**0.853**	K MSH	µMole/g	0.096	1	8/ 5/09	8/7/09 01:21

JMC 10/30/09

Comments:

Analytical Report

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09 1045
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS03-SD10-0709
Lab Code: R0904166-005

Basis: Dry
Percent Solids: 33.3

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.0021**		µMole/g	0.0012	1	8/ 5/09	8/7/09 01:27
Copper	6010B	**0.0359**		µMole/g	0.0087	1	8/ 5/09	8/7/09 01:27
Lead	6010B	**0.0305**	J MDP	µMole/g	0.0067	1	8/ 5/09	8/7/09 01:27
Nickel	6010B	**0.048**		µMole/g	0.019	1	8/ 5/09	8/7/09 01:27
Silver	6010B	0.0026	U	µMole/g	0.0026	1	8/ 5/09	8/7/09 01:27
Zinc	6010B	**0.80**	K MSH	µMole/g	0.17	2	8/ 5/09	8/12/09 14:34

JLC 10/30/09

Comments:

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09 1145
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS03-SD08-0709
Lab Code: R0904166-006

Basis: Dry
Percent Solids: 24.9

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.0022**		µMole/g	0.0017	1	8/ 5/09	8/7/09 02:08
Copper	6010B	0.012	U	µMole/g	0.012	1	8/ 5/09	8/7/09 02:08
Lead	6010B	**0.0304**	J MDP	µMole/g	0.0095	1	8/ 5/09	8/7/09 02:08
Nickel	6010B	**0.052**		µMole/g	0.027	1	8/ 5/09	8/7/09 02:08
Silver	6010B	0.0036	U	µMole/g	0.0036	1	8/ 5/09	8/7/09 02:08
Zinc	6010B	**0.83**	K MSH	µMole/g	0.12	1	8/ 5/09	8/7/09 02:08

JLC 101309

Comments:

Analytical Report

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09 1210
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS03-SD09-0709
Lab Code: R0904166-007

Basis: Dry
Percent Solids: 30.8

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.0014	U	µMole/g	0.0014	1	8/ 5/09	8/7/09 02:14
Copper	6010B	0.0099	U	µMole/g	0.0099	1	8/ 5/09	8/7/09 02:14
Lead	6010B	**0.0130**	J MOP	µMole/g	0.0076	1	8/ 5/09	8/7/09 02:14
Nickel	6010B	**0.030**		µMole/g	0.021	1	8/ 5/09	8/7/09 02:14
Silver	6010B	0.0029	U	µMole/g	0.0029	1	8/ 5/09	8/7/09 02:14
Zinc	6010B	**0.548**	K MSH	µMole/g	0.096	1	8/ 5/09	8/7/09 02:14

JEC 10/30/09

Comments:

Analytical Report

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09 1240
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS03-SD07-0709
Lab Code: R0904166-008

Basis: Dry
Percent Solids: 37.5

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.0023**		µMole/g	0.0011	1	8/ 5/09	8/7/09 02:20
Copper	6010B	**0.0119**		µMole/g	0.0078	1	8/ 5/09	8/7/09 02:20
Lead	6010B	**0.0188**	J MDP	µMole/g	0.0060	1	8/ 5/09	8/7/09 02:20
Nickel	6010B	**0.042**		µMole/g	0.017	1	8/ 5/09	8/7/09 02:20
Silver	6010B	0.0023	U	µMole/g	0.0023	1	8/ 5/09	8/7/09 02:20
Zinc	6010B	**0.757**	K MSH	µMole/g	0.076	1	8/ 5/09	8/7/09 02:20

JLC 10/30/09

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/22/09 1310
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD06-0709		
Lab Code:	R0904166-009	**Basis:**	Dry
		Percent Solids:	39.4

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.0025		µMole/g	0.0011	1	8/ 5/09	8/7/09 02:26
Copper	6010B	0.0332		µMole/g	0.0076	1	8/ 5/09	8/7/09 02:26
Lead	6010B	0.0324	J MDP	µMole/g	0.0059	1	8/ 5/09	8/7/09 02:26
Nickel	6010B	0.039		µMole/g	0.017	1	8/ 5/09	8/7/09 02:26
Silver	6010B	0.0022	U	µMole/g	0.0022	1	8/ 5/09	8/7/09 02:26
Zinc	6010B	0.738	K MSH	µMole/g	0.074	1	8/ 5/09	8/7/09 02:26

JLC 10/13/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1045
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD05-0709		
Lab Code:	R0904166-010	**Basis:**	Dry
		Percent Solids:	51.0

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.00084	U	µMole/g	0.00084	1	8/ 5/09	8/7/09 02:32
Copper	6010B	**0.0218**		µMole/g	0.0060	1	8/ 5/09	8/7/09 02:32
Lead	6010B	**0.0173**	J MDP	µMole/g	0.0046	1	8/ 5/09	8/7/09 02:32
Nickel	6010B	**0.018**		µMole/g	0.013	1	8/ 5/09	8/7/09 02:32
Silver	6010B	0.0018	U	µMole/g	0.0018	1	8/ 5/09	8/7/09 02:32
Zinc	6010B	**0.253**	K MSH	µMole/g	0.058	1	8/ 5/09	8/7/09 02:32

JAL 10/30/09

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1050
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD05P-0709		
Lab Code:	R0904166-011	**Basis:**	Dry
		Percent Solids:	54.5

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.00074	U	µMole/g	0.00074	1	8/ 5/09	8/7/09 02:37
Copper	6010B	**0.0169**		µMole/g	0.0053	1	8/ 5/09	8/7/09 02:37
Lead	6010B	**0.0169** J MDP		µMole/g	0.0040	1	8/ 5/09	8/7/09 02:37
Nickel	6010B	**0.017**		µMole/g	0.011	1	8/ 5/09	8/7/09 02:37
Silver	6010B	0.0015	U	µMole/g	0.0015	1	8/ 5/09	8/7/09 02:37
Zinc	6010B	**0.247** K MSH		µMole/g	0.051	1	8/ 5/09	8/7/09 02:37

JMC 10/30/09

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1200
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD31-0709		
Lab Code:	R0904166-012	**Basis:**	Dry
		Percent Solids:	76.2

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.00053	U	µMole/g	0.00053	1	8/ 5/09	8/7/09 02:43
Copper	6010B	**0.0078**		µMole/g	0.0038	1	8/ 5/09	8/7/09 02:43
Lead	6010B	**0.0034**	J MBP	µMole/g	0.0029	1	8/ 5/09	8/7/09 02:43
Nickel	6010B	0.0082	U	µMole/g	0.0082	1	8/ 5/09	8/7/09 02:43
Silver	6010B	0.0011	U	µMole/g	0.0011	1	8/ 5/09	8/7/09 02:43
Zinc	6010B	**0.038**	K MSH	µMole/g	0.037	1	8/ 5/09	8/7/09 02:43

JLC 101309

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1205
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD31P-0709		
Lab Code:	R0904166-013	**Basis:**	Dry
		Percent Solids:	66.2

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.00063	U	µMole/g	0.00063	1	8/ 5/09	8/7/09 02:49
Copper	6010B	0.0044	U	µMole/g	0.0044	1	8/ 5/09	8/7/09 02:49
Lead	6010B	0.0048	J MDP	µMole/g	0.0034	1	8/ 5/09	8/7/09 02:49
Nickel	6010B	0.0096	U	µMole/g	0.0096	1	8/ 5/09	8/7/09 02:49
Silver	6010B	0.0013	U	µMole/g	0.0013	1	8/ 5/09	8/7/09 02:49
Zinc	6010B	0.065	K MSH	µMole/g	0.043	1	8/ 5/09	8/7/09 02:49

JLC 10/30/09

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1220
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD30-0709		
Lab Code:	R0904166-014	**Basis:**	Dry
		Percent Solids:	81.1

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.00086		µMole/g	0.00051	1	8/ 5/09	8/7/09 03:07
Copper	6010B	0.0108		µMole/g	0.0036	1	8/ 5/09	8/7/09 03:07
Lead	6010B	0.0050	J MDP	µMole/g	0.0028	1	8/ 5/09	8/7/09 03:07
Nickel	6010B	0.0079	U	µMole/g	0.0079	1	8/ 5/09	8/7/09 03:07
Silver	6010B	0.0011	U	µMole/g	0.0011	1	8/ 5/09	8/7/09 03:07
Zinc	6010B	0.043	K MDH	µMole/g	0.035	1	8/ 5/09	8/7/09 03:07

JLC 10/30/09

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/24/09 1410
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD03-0709		
Lab Code:	R0904166-015	**Basis:**	Dry
		Percent Solids:	22.6

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Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	0.0019	U	µMole/g	0.0019	1	8/ 5/09	8/7/09 03:12
Copper	6010B	**0.058**		µMole/g	0.013	1	8/ 5/09	8/7/09 03:12
Lead	6010B	**0.070**	J MDP	µMole/g	0.010	1	8/ 5/09	8/7/09 03:12
Nickel	6010B	**0.041**		µMole/g	0.029	1	8/ 5/09	8/7/09 03:12
Silver	6010B	0.0039	U	µMole/g	0.0039	1	8/ 5/09	8/7/09 03:12
Zinc	6010B	**0.36**	K MSH	µMole/g	0.13	1	8/ 5/09	8/7/09 03:12

JMC 101309

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/24/09 1445
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD04-0709		
Lab Code:	R0904166-016	**Basis:**	Dry
		Percent Solids:	66.1

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Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
Inorganic Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Cadmium	6010B	**0.00118**		µMole/g	0.00064	1	8/ 5/09	8/7/09 03:18
Copper	6010B	**0.0291**		µMole/g	0.0045	1	8/ 5/09	8/7/09 03:18
Lead	6010B	**0.0192**	J MPP	µMole/g	0.0035	1	8/ 5/09	8/7/09 03:18
Nickel	6010B	**0.0201**		µMole/g	0.0098	1	8/ 5/09	8/7/09 03:18
Silver	6010B	0.0013	U	µMole/g	0.0013	1	8/ 5/09	8/7/09 03:18
Zinc	6010B	**0.207**	K MSH	µMole/g	0.044	1	8/ 5/09	8/7/09 03:18

JAC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/21/09 1000
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD12-0709		
Lab Code:	R0904166-001	**Basis:**	Dry
		Percent Solids:	36.1

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	1.59	J mDP	µMole/g	0.92	4	NA	8/4/09 08:30

JAC 10/13/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/21/09 1030
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD11-0709		
Lab Code:	R0904166-002	**Basis:**	Dry
		Percent Solids:	38.6

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	1.70	J MDP	µMole/g	0.87	4	NA	8/4/09 08:30

JLC 10/13/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/21/09 1100
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD33-0709		
Lab Code:	R0904166-003	**Basis:**	Dry
		Percent Solids:	38.6

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	1.9	J MDP	µMole/g	1.1	5	NA	8/4/09 08:30

JAC 101309

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/21/09 1200
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD32-0709		
Lab Code:	R0904166-004	**Basis:**	Dry
		Percent Solids:	30.2

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	2.5	J MDP	µMole/g	1.1	4	NA	8/4/09 08:30

JMC 10/13/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/22/09 1045
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD10-0709		
Lab Code:	R0904166-005	**Basis:**	Dry
		Percent Solids:	33.3

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.89	J MDP	µMole/g	0.50	2	NA	8/4/09 08:30

JLC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/22/09 1145
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD08-0709		
Lab Code:	R0904166-006	**Basis:**	Dry
		Percent Solids:	24.9

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.35	U	µMole/g	0.35	1	NA	8/4/09 08:30

JAC 10/30/9

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/22/09 1210
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD09-0709		
Lab Code:	R0904166-007	**Basis:**	Dry
		Percent Solids:	30.8

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	1.6	J MDP	µMole/g	1.1	4	NA	8/4/09 08:30

JLC 101309

Comments:

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09 1240
Date Received: 7/28/09
Pre-Prep Date: 8/4/09

Sample Name: YS03-SD07-0709
Lab Code: R0904166-008

Basis: Dry
Percent Solids: 37.5

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.26	J MDP	µMole/g	0.22	1	NA	8/4/09 08:30

JLC 10/13/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/22/09 1310
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD06-0709		
Lab Code:	R0904166-009	**Basis:**	Dry
		Percent Solids:	39.4

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.47	J MDP	µMole/g	0.22	1	NA	8/4/09 08:30

JMC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1045
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD05-0709		
Lab Code:	R0904166-010	**Basis:**	Dry
		Percent Solids:	51.0

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.17	J, UMQ	uMole/g	0.17	1	NA	8/4/09 08:30

JMC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1050
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD05P-0709		
Lab Code:	R0904166-011	**Basis:**	Dry
		Percent Solids:	54.5

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.15	U	µMole/g	0.15	1	NA	8/4/09 08:30

JMC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1200
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD31-0709		
Lab Code:	R0904166-012	**Basis:**	Dry
		Percent Solids:	76.2

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.11	J UJ MD	µMole/g	0.11	1	NA	8/4/09 08:30

JAC 10/13/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1205
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD31P-0709		
Lab Code:	R0904166-013	**Basis:**	Dry
		Percent Solids:	66.2

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	2.4	J MDP	µMole/g	1.3	10	NA	8/4/09 08:30

JWC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/23/09 1220
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD30-0709		
Lab Code:	R0904166-014	**Basis:**	Dry
		Percent Solids:	81.1

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.10	U	µMole/g	0.10	1	NA	8/4/09 08:30

JWC 10/30/09

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/24/09 1410
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS03-SD03-0709		
Lab Code:	R0904166-015	**Basis:**	Dry
		Percent Solids:	22.6

XICOM JAC 101709

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.38	~~U~~ WND	µMole/g	0.38	1	NA	8/4/09 08:30

JAC 101309

Comments:

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	7/24/09 1445
Sample Matrix:	Soil	**Date Received:**	7/28/09
		Pre-Prep Date:	8/4/09
Sample Name:	YS01-SD04-0709		
Lab Code:	R0904166-016	**Basis:**	Dry
		Percent Solids:	66.1

3/ XICOM JAC 101709

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.13	~~U~~ UNDL	uMole/g	0.13	1	NA	8/4/09 08:30

JAC 101309

Comments:

Analytical Report

Client:	Compuchem	**Service Request:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
		Pre-Prep Date:	8/4/09
Sample Name:	Method Blank		
Lab Code:	R0904166-MB1	**Basis:**	Dry

Acid Volatile Sulfide and Selected Simultaneously Extractable Metals in Sediment Draft 1991
General Chemistry Parameters

Pre-Prep Method: 821/R-91-100

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed
Sulfide, Acid-Volatile	821/R-91-100	0.090	U	µMole/g	0.090	1	NA	8/4/09 08:30

JAC 10/30/09

Comments:

DOD CRITERIA

pg 1 of 2 S 13330 "SDG 1"

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS	Samples shipped to: CAS LABS	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calender days	Contact: Deb Patton	Phone: (919) 379-4100 x 4089
Report style: level IV	Address: 1 Mustard Street, Rochester, NY	Fax: (919) 379-4050
Disk requirement: CH2M HILL LABSPEC7	Phone: ( )	Sampling complete? Y or N (see Note 1)
	Project Locale (state) VA	Project-specific (PS) or Batch (B) QC? see designated

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other _____

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S - SW-846, W- CWA 600-series, O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: AVS/SEM*	CCN	Remarks / Comments (see Notes 2 & 3)
YSØ3-SD12-ØTØ9	7/21	1000	S	F	U			1		✓	0907181-01	*not the following metals for the AVS/SEM
YSØ3-SD11-ØTØ9		1030								✓	-02	
YSØ1-SD33-ØTØ9		1100								✓	-03	
YSØ1-SD32-ØTØ9		1200						✓		✓	-04	
YSØ3-SD1Ø-ØTØ9	7/22	1045						3	X	✓	-05	(USE FOR MS/MSD)
YSØ3-SDØ8-ØTØ9		1145						1		✓	-06	
YSØ3-SDØ9-ØTØ9		1210								✓	-07	
YSØ3-SDØ7-ØTØ9		1240								✓	-08	
YSØ3-SDØ6-ØTØ9		1310								✓	-09	
YSØ3-SDØ5-ØTØ9	7/23	1045	✓	✓	✓			✓		✓	-10	

Clients Special Instructions: Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig) K. Sirles	Date: 7/27/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	
Company Name: CompuChem	Time: 1300	Company Name:	Time:	Company Name:	
#1 Received by:(sig) Matthew Carver	Date: 7/29/09	#2 Received by:(sig)	Date:	#2 Received by:(sig)	
Company Name: CAS	Time: 10:40	Company Name:	Time:	Company Name:	Time:

R0904166
Compuchem
CTO-Yorktown NWS

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

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"SDG 1" S 13331

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-1616 YORKTOWN NWS
TAT: 20 calendar days
Report style: level IV
Disk requirement: CH2M HILL LabSpec7

Samples shipped to: CAS Labs
Contact: Deb Patton
Address:
Phone: ( ) Dl PS #2

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 x4089
Fax: (919) 379-4050
Sampling complete? Y or N (see Note 1)
Project-specific (PS) or Batch (B) QC? see designated PS lot
Project Locale (state)

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S - SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS * AVS/SEM	CCN	Remarks / Comments (see Notes 2 & 3)
~~YS03-SD05-0709~~	7/23	1045	S	F	U			1		✓	0907181-11	
YS03-SD05P-0709		1050	S	F	U			1		✓	-12 11	
YS01-SD31-0709		1200								✓	-13 12	
YS01-SD31P-0709		1205								✓	-14 13	
YS01-SD30-0709		1220								✓	-15 14	
YS01-SD03-0709	7/24	1410								✓	-16 15	
YS01-SD04-0709	↓	1445	↓	↓	↓			↓		✓	-17 16	

J. Dover 7/25/09

Clients Special Instructions:

Temperature _____ °C

Lab: ~~Received in good condition?~~ Y or N Describe any problems:

#1 Relenquished by:(sig)	Date: 7/27/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1300	Company Name:	Time:	Company Name:	
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	
Company Name:	Time:	Company Name:	Time:	Company Name:	

R0904166
Compuchem
CTO-Yorktown NWS

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

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Cooler Receipt And Preservation Check Form

Project/Client Compuchem Submission Number R09-4166

Cooler received on 7/28/09 by: MW COURIER: CAS (UPS) FEDEX VELOCITY CLIENT

1.	Were custody seals on outside of cooler?			YES	(NO)	
2.	Were custody papers properly filled out (ink, signed, etc.)?			(YES)	NO	
3.	Did all bottles arrive in good condition (unbroken)?			(YES)	NO	
4.	Did any VOA vials have significant* air bubbles?			YES	NO	(N/A)
5.	Were **Ice** or **Ice packs** present?			(YES)	NO	
6.	Where did the bottles originate?			7/28/09	CAS/ROC, (CLIENT)	
7.	Temperature of cooler(s) upon receipt:	1°				
	Is the temperature within 0° - 6° C?:	(Yes)	Yes	Yes	Yes	Yes
	If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: 7/28/09 1102

Thermometer ID: 161 / IR GUN#2 / (IR GUN#3) Reading From: (Temp Blank) / Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: _____

PC Secondary Review: DH 9/3/09

Cooler Breakdown: Date: 7/28/09 by: MW

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO
4.	Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated		(N/A)

Explain any discrepancies: _____

pH	Reagent	YES	NO	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
Residual Chlorine (-)	For TCN and Phenol			If present, contact PM to add ascorbic acid					
	$Na_2S_2O_3$	-	-						
	Zn Aceta	-	-						
	HCl	*	*						

*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers: Client bottles

Other Comments:

PC Secondary Review: _____

*significant air bubbles are greater than 5-6 mm

Sample ID	Sample Alias	Sample Date	Field Blank	Equipment Blank	Trip Blank	Duplicate	SDG 1	SDG 2	SDG 3	SDG4
YS01-SW31-0709		7/23/2009	YS01-FB01-072309	YS01-EB01-072309	YS01-TB01-072309	YS01-SW31P-0709	0907175	0907180		
YS01-SW32-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS01-SW33-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS01-SD30-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309		0907174	0907181	0907182	
YS01-SD31-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309	YS01-SD31P-0709	0907174	0907181	0907182	
YS01-SD32-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS01-SD33-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS03-SW03-0709	YS01-SW03-0709	7/24/2009	YS01-FB01-072309	YS03-EB02-072409	YS03-TB01-072409		0907201	0907203		
YS03-SW04-0709	YS01-SW04-0709	7/24/2009	YS01-FB01-072309	YS03-EB02-072409	YS03-TB01-072409		0907201	0907203		
YS03-SW05-0709		7/23/2009	YS01-FB01-072309	YS01-EB01-072309	YS01-TB01-072309	YS03-SW05P-0709	0907175	0907180		
YS03-SW06-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW07-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW08-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW09-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW10-0709		7/22/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072209		0907175	0907180		
YS03-SW11-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS03-SW12-0709		7/21/2009	YS01-FB01-072309	YS03-EB02-072209	YS03-TB01-072109		0907175	0907180		
YS03-SD03-0709	YS01-SD03-0709	7/24/2009	YS01-FB02-072309	YS03-EB01-072409	YS03-TB01-072409		0907174	0907181	0907182	
YS03-SD04-0709	YS01-SD04-0709	7/24/2009	YS01-FB02-072309	YS03-EB01-072409	YS03-TB01-072409		0907174	0907181	0907182	
YS03-SD05-0709		7/23/2009	YS01-FB02-072309	YS01-EB02-072309	YS01-TB01-072309	YS03-SD05P-0709	0907174	0907181	0907182	
YS03-SD06-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD07-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD08-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD09-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD10-0709		7/22/2009	YS01-FB02-072309	YS03-EB01-072209	YS03-TB01-072209		0907174	0907181	0907182	
YS03-SD11-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS03-SD12-0709		7/21/2009	YS01-FB02-072309	YS03-EB01-072109	YS03-TB01-072109		0907174	0907181	0907182	
YS06-SW68-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409	YS06-SW68P-0809	0908016	0908017	0908036	
YS06-SW69-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW70-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW71-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW72-0809		8/4/2009	YS06-FB02-080409	YS06-EB02-080409	YS06-TB01-080409		0908016	0908017	0908036	
YS06-SW73-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509		0908016	0908017	0908036	
YS06-SW74-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509	YS06-SW74P-0809	0908016	0908017	0908036	
YS06-SW75-0809		8/5/2009	YS06-FB02-080409	YS06-EB01-080509	YS06-TB01-080509		0908016	0908017	0908036	
YS06-SW76-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SW77-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SW78-0809		8/6/2009	YS06-FB02-080409	YS06-EB01-080609	YS06-TB01-080609		0908016	0908017	0908036	
YS06-SD68-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409	YS06-SD68P-0809	0908015	0908034	0908033	0908035
YS06-SD69-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD70-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD71-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD72-0809		8/4/2009	YS06-FB01-080409	YS06-EB01-080409	YS06-TB01-080409		0908015	0908034	0908033	0908035
YS06-SD73-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509		0908015	0908034	0908033	0908035
YS06-SD74-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509	YS06-SD74P-0809	0908015	0908034	0908033	0908035
YS06-SD75-0809		8/5/2009	YS06-FB01-080409	YS06-EB02-080509	YS06-TB01-080509		0908015	0908034	0908033	0908035
YS06-SD76-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035
YS06-SD77-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035
YS06-SD78-0809		8/6/2009	YS06-FB01-080409	YS06-EB02-080609	YS06-TB01-080609		0908015	0908034	0908033	0908035

This SDG contains data or samples analyzed for acid volatile sulfide and simultaneously extracted metals analytes (AVS/SEM). Please note that method criteria were used to assess all calibrations and quality control because Region III does not have a validation document for this method. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 7/21-7/23
Received Date: 7/28
Prep. Dates: AVS: 8/4, SEM – ICP 8/5
Analysis Dates: AVS: 8/4 SEM – ICP 88/6- 8/7

Cooler temps OK, receipt documentation present.
Holding time requirements were met.

CALIBRATIONS

AVS is a titration method. Analysis for SEM was per SW-846 methods. An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
no quals				

Field QC blanks were not submitted for the AVS/SEM fraction.

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB if less than the analyte CRDL is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD of sample YS03-SD10-0709 was acceptable for all parameters except zinc and AVS. Out for AVS due to abundance. Zinc flagged K in all samples. The matrix dup RPDs were high for AVS & Pb. These analytes were flagged as estimated J/UJ in all samples. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis submitted was OK.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the RL.

Sample ID: YS03-SD05-0709 Duplicate Sample ID: YS03-SD05P-0709

Analyte	Sample Conc.	Duplicate Conc.	RPD
copper	0.0218	0.0169	25%
lead	0.0173	0.0169	2%
nickel	0.018	0.017	6%
zinc	0.253	0.247	2%
AVS			#DIV/0!

Comments: no qualifications

Sample ID: YS01-SD31-0709 Duplicate Sample ID: YS01-SD31P-0709

Analyte	Sample Conc.	Duplicate Conc.	RPD
copper			#DIV/0!
lead	0.0034	0.0048	34%
nickel			#DIV/0!
zinc	0.038	0.065	52%
AVS			#DIV/0!

Comments: J lead & zinc (both already flagged due to spike or spike dup issues)

SAMPLE CALCULATION

EPA SAMPLE ID: YS03-SD31P-0709
COMPOUND: AVS
CONCENTRATION: 2.4 umole/g
%Solids –
Titrated result: 51.2417 ug/g

51.2417 ug/g * 1 umole/0.032ug * 1/0.662 = 2.41 umole/g

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified.

Reviewer JCleveland **Date:** 10/17/09

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Compuchem	**Service Request No.:**	R0904166
Project:	CTO-Yorktown/NWS	**Date Received:**	7/28/09
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier IV.

Sample Receipt

Sixteen (16) soil samples were received for analysis at Columbia Analytical Services on 7/28/09. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

AVS/SEM

Site specific QC was analyzed on sample YS03-SD10-0709. The Matrix Spike was outside the limits high for Zinc and has been flagged with an "N". It was also outside of limits high for Acid Volatile Sulfide and has been flagged with "#". The analyte concentration in the sample for Acid Volatile Sulfide was more than four times higher than the added spike concentration, preventing accurate evaluation of the spike recovery. The Laboratory Control Spike (LCS) recoveries were within limits.

The Duplicate analysis for Lead and Acid Volatile Sulfide were outside the acceptance criteria and have been flagged with a "*".

No other analytical or quality control problems were encountered during analysis.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature:

Approved by _____ **Date** 9/3/09

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09
Date Received: 7/28/09
Date Analyzed: 7/31/09 - 8/ 4/09

Duplicate Sample Summary
General Chemistry Parameters

Sample Name: YS03-SD10-0709
Lab Code: R0904166-005

Units: Percent
Basis: NA

Analyte Name	Method	MRL	Sample Result	Duplicate Sample R0904166-DUP1 Result	Average	RPD	RPD Limit
Solids, Total	160.3 Modified	1.0	33.3	33.3	33.3	<1	20
Sulfide, Acid-Volatile	821/R-91-100	1.2	0.89	2.3	1.59	88 *	30

JHJ on all

JAC 101309

Comments:

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Compuchem
Project: CTO-Yorktown/NWS
Sample Matrix: Soil

Service Request: R0904166
Date Collected: 7/22/09
Date Received: 7/28/09
Date Analyzed: 8/ 4/09

Matrix Spike Summary
Acid Volatile Sulfide

Sample Name: YS03-SD10-0709
Lab Code: R0904166-005

Units: µMole/g
Basis: Dry

Analytical Method: 821/R-91-100

Analyte Name	Sample Result	Matrix Spike R0904166-MS Result	Amount	% Rec	% Rec Limits
Sulfide, Acid-Volatile	0.89	2.82	0.2	886 #	56 - 196

No Quals - spike amt is significantly less than native sample result - < 4X

JMC 101309

Comments:

Columbia Analytical Services

METALS
-5A-
SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-SD10-0709S

Contract: R0904166

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: YS03-SD12-07C

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 33.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Silver	75 - 125	1.10		0.28	U	1.4	79		P
Cadmium	75 - 125	1.39		0.23		1.4	83		P
Copper	75 - 125	9.09		2.28		7.0	97		P
Nickel	75 - 125	14.90		2.80		13.9	87		P
Lead	75 - 125	19.40		6.33		13.90	94		P
Zinc	75 - 125	71.10		52.30		13.9	135	N	P

K+a all +

Comments:

METALS
-5B-
POST DIGEST SPIKE SAMPLE RECOVERY

SAMPLE NO.

YS03-SD10-0709A

Contract: R0904166

Lab Code: _____ Case No.: _____ SAS _____ SDG NO.: YS03-SD12-07C

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added(SA)	%R	Q	M
Silver		38.50		10.00	U	50.0	77		P
Cadmium		48.50		8.47		50.0	80		P
Copper		301.00		82.60		250.0	87		P
Nickel		520.00		101.00		500.0	84		P
Lead		646.00		229.00		500.0	83		P
Zinc		1350.00		946.00		500.0	81		P

PDS-ON

Comments:

METALS
-6-
DUPLICATES

SAMPLE NO.: YS03-SD10-0709D

Contract: R0904166

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG NO.: YS03-SD12-07(

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 33.3 % Solids for Duplicate: 33.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Silver		0.28	U	0.27	U			P
Cadmium	0.1	0.23		0.18		24		P
Copper	0.6	2.28		1.82		22		P
Nickel	1.1	2.80		2.28		20		P
Lead		6.33		4.74		29	*	P
Zinc		52.30		45.80		13		P

JTW

Comments: _____

DataQual
Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

October 19, 2009
SDG # R0904418, Columbia Analytical Services
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameters noted in the table below for SDG # R0904418. The data validation was performed in accordance with the SW-846 methods, 6010B & 7471A for Simultaneously Extracted Metals (SEM) and the EPA method 821/R-91-100 for Acid Volatile Sulfide (AVS). Also used in the validation of these samples were the Region III Modifications to the Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Data Review, 4/93, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site. All areas of concern are discussed in the body of the report and a summary of data qualification is provided.

Sample ID	Lab ID	Matrix	AVS/SEM
YS06-SD68-0809	R0904418-005	soil	X
YS06-SD68P-0809	R0904418-006	soil	X
YS06-SD69-0809	R0904418-004	soil	X
YS06-SD70-0809	R0904418-001	soil	X
YS06-SD71-0809	R0904418-002	soil	X
YS06-SD72-0809	R0904418-003	soil	X
YS06-SD73-0809	R0904418-007	soil	X
YS06-SD74-0809	R0904418-008	soil	X
YS06-SD74P-0809	R0904418-009	soil	X
YS06-SD75-0809	R0904418-010	soil	X
YS06-SD76-0809	R0904418-011	soil	X
YS06-SD77-0809	R0904418-012	soil	X
YS06-SD78-0809	R0904418-013	soil	X
YS06-SD73-0809 MS	R0904418-007MS	soil	X
YS06-SD73-0809 MSD	R0904418-007MSD	soil	X

The following quality control samples were provided with this SDG: sample YS06-SD68P-0809-field duplicate of sample YS06-SD68-0809; and sample YS06-SD74P-0809-field duplicate of sample YS06-SD74-0809.

The samples were evaluated based on the following criteria:

- Data Completeness *

- Sample Condition *
- Technical Holding Times *
- Initial/Continuing Calibrations *
- CRI Standards *
- Interference Check Sample *
- Blanks *
- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Post Digestion Spike Recoveries *
- Serial Dilutions *
- Field Duplicates
- Identification/Quantitation *
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

There were no issues noted that required rejection of the analytical data found in the validation of this SDG.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

AVS/SEM

The field duplicate pairs exhibited non-compliant RPDs and qualifications were required.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 8/4-6/09 and samples were received at the laboratory 8/7-13/09. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Field Duplicate

AVS/SEM

The field duplicate pairs submitted in this SDG exhibited non-compliant RPDs. Specific action is noted in the following table.

FD Pair	Analytes	RPD	Q Flag	Q Code
YS06-SD68-0809, YS06-SD68P-0809	AVS zinc	51% 72%	J	FD
YS06-SD74-0809, YS06-SD74P-0809	AVS	44%	J	FD

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

AVS/SEM

Sample ID	Parameter	Results	Q Flag	Q code
YS06-SD68-0809, YS06-SD68P-0809	AVS zinc	+	J	FD
YS06-SD74-0809, YS06-SD74P-0809	AVS	+	J	FD

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

Metals

-1-

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/4/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD70-0809 Lab Code: R0904418-001

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0014	1.0	08/18/09	08/20/09	0.0014	U	
Copper	6010B	0.0050	1.0	08/18/09	08/20/09	0.0222		
Lead	6010B	0.008	1.0	08/18/09	08/20/09	0.019		
Mercury	7470A	0.00013	4.0	08/18/09	08/26/09	0.00013	U	
Nickel	6010B	0.011	1.0	08/18/09	08/20/09	0.011	U	
Silver	6010B	0.0029	1.0	08/18/09	08/20/09	0.0029	U	
Zinc	6010B	0.0047	1.0	08/18/09	08/20/09	0.238		

% Solids: 55.9

Comments:

JMC 1809

Metals

- I -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/4/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD71-0809 Lab Code: R0904418-002

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0025	1.0	08/18/09	08/20/09	0.0025	U	
Copper	6010B	0.0091	1.0	08/18/09	08/20/09	0.0202		
Lead	6010B	0.014	1.0	08/18/09	08/20/09	0.014	U	
Mercury	7470A	0.00023	4.0	08/18/09	08/26/09	0.00023	U	
Nickel	6010B	0.019	1.0	08/18/09	08/20/09	0.019	U	
Silver	6010B	0.0053	1.0	08/18/09	08/20/09	0.0053	U	
Zinc	6010B	0.0085	1.0	08/18/09	08/20/09	0.340		

% Solids: 33.0

Comments:

10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/4/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD72-0809 Lab Code: R0904418-003

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0023	1.0	08/18/09	08/20/09	0.0023	U	
Copper	6010B	0.0083	1.0	08/18/09	08/20/09	0.0624		
Lead	6010B	0.012	1.0	08/18/09	08/20/09	0.029		
Mercury	7470A	0.00021	4.0	08/18/09	08/26/09	0.00021	U	
Nickel	6010B	0.018	1.0	08/18/09	08/20/09	0.028		
Silver	6010B	0.0048	1.0	08/18/09	08/20/09	0.0048	U	
Zinc	6010B	0.0078	1.0	08/18/09	08/20/09	0.376		

% Solids: 36.3

Comments:

JMC 10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/4/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD69-0809 Lab Code: R0904418-004

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0013	1.0	08/18/09	08/20/09	0.0013	U	
Copper	6010B	0.0046	1.0	08/18/09	08/20/09	0.0216		
Lead	6010B	0.007	1.0	08/18/09	08/20/09	0.016		
Mercury	7470A	0.00011	4.0	08/18/09	08/26/09	0.00011	U	
Nickel	6010B	0.010	1.0	08/18/09	08/20/09	0.010	U	
Silver	6010B	0.0027	1.0	08/18/09	08/20/09	0.0027	U	
Zinc	6010B	0.0043	1.0	08/18/09	08/20/09	0.210		

% Solids: 67.4

Comments:

JAC 10809

Form I - IN

Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/4/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD68-0809 Lab Code: R0904418-005

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0012	1.0	08/18/09	08/20/09	0.0012	U	
Copper	6010B	0.0044	1.0	08/18/09	08/20/09	0.0044	U	
Lead	6010B	0.007	1.0	08/18/09	08/20/09	0.007	U	
Mercury	7470A	0.00011	4.0	08/18/09	08/26/09	0.00011	U	
Nickel	6010B	0.009	1.0	08/18/09	08/20/09	0.009	U	
Silver	6010B	0.0025	1.0	08/18/09	08/20/09	0.0025	U	
Zinc	6010B	0.0041	1.0	08/18/09	08/20/09	0.113	J	FD

% Solids: 55.2

Comments:

JAC 10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/4/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD68P-0809 Lab Code: R0904418-006

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0015	1.0	08/18/09	08/20/09	0.0015	U	
Copper	6010B	0.0053	1.0	08/18/09	08/20/09	0.0053	U	
Lead	6010B	0.008	1.0	08/18/09	08/20/09	0.008	U	
Mercury	7470A	0.00013	4.0	08/18/09	08/26/09	0.00013	U	
Nickel	6010B	0.011	1.0	08/18/09	08/20/09	0.011	U	
Silver	6010B	0.0031	1.0	08/18/09	08/20/09	0.0031	U	
Zinc	6010B	0.0050	1.0	08/18/09	08/20/09	0.0529	J	FD

% Solids: 57.5

Comments:

JMC 10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/5/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD73-0809 Lab Code: R0904418-007

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0026	1.0	08/18/09	08/20/09	0.0026	U	
Copper	6010B	0.0095	1.0	08/18/09	08/20/09	0.0104		
Lead	6010B	0.014	1.0	08/18/09	08/20/09	0.014	U	
Mercury	7470A	0.00024	4.0	08/18/09	08/26/09	0.00024	U	
Nickel	6010B	0.020	1.0	08/18/09	08/20/09	0.023		
Silver	6010B	0.0055	1.0	08/18/09	08/20/09	0.0055	U	
Zinc	6010B	0.0089	1.0	08/18/09	08/20/09	0.412		

% Solids: 33.2

Comments:

JLC 10809

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Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/5/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD74-0809 Lab Code: R0904418-008

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0026	1.0	08/18/09	08/20/09	0.0026	U	
Copper	6010B	0.0094	1.0	08/18/09	08/20/09	0.0094	U	
Lead	6010B	0.014	1.0	08/18/09	08/20/09	0.014	U	
Mercury	7470A	0.00023	4.0	08/18/09	08/26/09	0.00023	U	
Nickel	6010B	0.020	1.0	08/18/09	08/20/09	0.020	U	
Silver	6010B	0.0055	1.0	08/18/09	08/20/09	0.0055	U	
Zinc	6010B	0.0088	1.0	08/18/09	08/20/09	0.422	J	FD

% Solids: 32.0

Comments:

JLC 10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/5/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD74P-0809 Lab Code: R0904418-009

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0025	1.0	08/18/09	08/20/09	0.0025	U	
Copper	6010B	0.0091	1.0	08/18/09	08/20/09	0.0735		
Lead	6010B	0.014	1.0	08/18/09	08/20/09	0.014	U	
Mercury	7470A	0.00023	4.0	08/18/09	08/26/09	0.00023	U	
Nickel	6010B	0.019	1.0	08/18/09	08/20/09	0.606		
Silver	6010B	0.0053	1.0	08/18/09	08/20/09	0.0053	U	
Zinc	6010B	0.0086	1.0	08/18/09	08/20/09	0.540	J	FD

% Solids: 32.9

Comments:

JMC 10/8/09

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Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/5/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/7/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD75-0809 Lab Code: R0904418-010

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0021	1.0	08/18/09	08/20/09	0.0021	U	
Copper	6010B	0.0075	1.0	08/18/09	08/20/09	0.0219		
Lead	6010B	0.011	1.0	08/18/09	08/20/09	0.022		
Mercury	7470A	0.00019	4.0	08/18/09	08/26/09	0.00019	U	
Nickel	6010B	0.016	1.0	08/18/09	08/20/09	0.024		
Silver	6010B	0.0044	1.0	08/18/09	08/20/09	0.0044	U	
Zinc	6010B	0.0070	1.0	08/18/09	08/20/09	0.330		

% Solids: 37.4

Comments:

JC 10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/6/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/13/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD76-0809 Lab Code: R0904418-011

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0018	1.0	08/18/09	08/20/09	0.0018	U	
Copper	6010B	0.0067	1.0	08/18/09	08/20/09	0.0082		
Lead	6010B	0.010	1.0	08/18/09	08/20/09	0.013		
Mercury	7470A	0.00017	4.0	08/18/09	08/26/09	0.00017	U	
Nickel	6010B	0.014	1.0	08/18/09	08/20/09	0.014	U	
Silver	6010B	0.0039	1.0	08/18/09	08/20/09	0.0039	U	
Zinc	6010B	0.0062	1.0	08/18/09	08/20/09	0.552		

% Solids: 41.6

Comments:

JAC 10809

Form I - IN

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Metals

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INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/6/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/13/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD77-0809 Lab Code: R0904418-012

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0027	1.0	08/18/09	08/20/09	0.0027	U	
Copper	6010B	0.0097	1.0	08/18/09	08/20/09	0.0625		
Lead	6010B	0.014	1.0	08/18/09	08/20/09	0.028		
Mercury	7470A	0.00024	4.0	08/18/09	08/26/09	0.00024	U	
Nickel	6010B	0.021	1.0	08/18/09	08/20/09	0.318		
Silver	6010B	0.0056	1.0	08/18/09	08/20/09	0.0056	U	
Zinc	6010B	0.0091	1.0	08/18/09	08/20/09	0.411		

% Solids: 32.4

Comments:

JAC 10809

Metals

- 1 -

INORGANIC ANALYSIS DATA PACKAGE

Client:	Compuchem	Service Request:	R0904418
Project No.:	SDG 2	Date Collected:	8/6/09
Project Name:	CTO-166 Yorktown NWS	Date Received:	8/13/09
Matrix:	SOIL	Units:	umol/g
		Basis:	DRY

Sample Name: YS06-SD78-0809 Lab Code: R0904418-013

Analyte	Analysis Method	MRL	Dilution Factor	Date Extracted	Date Analyzed	Result	C	Q
Cadmium	6010B	0.0016	1.0	08/18/09	08/20/09	0.0046		
Copper	6010B	0.0059	1.0	08/18/09	08/20/09	0.0842		
Lead	6010B	0.009	1.0	08/18/09	08/20/09	0.013		
Mercury	7470A	0.00015	4.0	08/18/09	08/26/09	0.00015	U	
Nickel	6010B	0.013	1.0	08/18/09	08/20/09	2.420		
Silver	6010B	0.0035	1.0	08/18/09	08/20/09	0.0035	U	
Zinc	6010B	0.0056	1.0	08/18/09	08/20/09	0.304		

% Solids: 43.7

Comments:

JAC 10809

Form I - IN

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client :	Compuchem	**Service Request :**	R0904418
Project Name :	CTO-166 Yorktown NWS	**Date Collected :**	08/04-06/09
Project Number :	SDG 2	**Date Received :**	08/07-13/09
Sample Matrix :	SOIL		

Sulfide, Acid-Volatile

Prep Method :	Method	Units :	uMole/g
Analysis Method	821/R-91-100	Basis :	Dry
Test Notes :			

Sample Name	Lab Code	MRL	Dilution Factor	Date Prepared	Date Analyzed	Result	Result Notes
YS06-SD70-0809	R0904418-001	0.16	10	8/18/2009	08/18/09	1.89	
YS06-SD71-0809	R0904418-002	0.16	10	8/18/2009	08/18/09	2.53	
YS06-SD72-0809	R0904418-003	0.16	10	8/18/2009	08/18/09	3.75	
YS06-SD69-0809	R0904418-004	0.16	10	8/18/2009	08/18/09	4.88	
YS06-SD68-0809	R0904418-005	0.16	10	8/18/2009	08/18/09	1.56	J FD
YS06-SD68P-0809	R0904418-006	0.32	20	8/18/2009	08/18/09	2.69	J FD
YS06-SD73-0809	R0904418-007	0.32	20	8/18/2009	08/18/09	15.3	
YS06-SD74-0809	R0904418-008	0.16	10	8/18/2009	08/18/09	1.71	J FD
YS06-SD74P-0809	R0904418-009	0.16	10	8/18/2009	08/18/09	2.68	J FD
YS06-SD75-0809	R0904418-010	0.16	10	8/18/2009	08/18/09	2.66	
YS06-SD76-0809	R0904418-011	0.32	20	8/18/2009	08/18/09	10.7	
YS06-SD77-0809	R0904418-012	1.6	100	8/18/2009	08/18/09	62.5	
YS06-SD78-0809	R0904418-013	0.32	20	8/18/2009	08/18/09	4.75	
Method Blank	R0904418-MB	0.016	1	8/18/2009	08/18/09	ND	

JAC 10/8/09

AMENDED DATA

Report By: EMIHAILA

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

Columbia Analytical Services
One Mustard St., Suite 250 • Rochester, NY 14609-0859 • (585) 288-5380 • 800-695-7222 x11 • FAX (585) 288-8475

PAGE 1 OF 1

SR # R0904418
CAS Contact

Project Name: CTO-166 Yorktown NWS
Project Number:
Project Manager: Deb Patton
Report CC:
Company Address: CAS Rochester
1 Mustard st. Suite 250
Rochester NY 14609
Phone: (585) 288-5380
FAX: (585) 288-8475
Sampler's Signature:
Sampler's Printed Name:

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PRESERVATIVE: 8

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOA's ☐ 8260 ☐ 624 ☐ CLP	GC/MS SVOA's ☐ 8270 ☐ 625 ☐ CLP	GC VOA's ☐ 8021 ☐ 601/602	PESTICIDES ☐ 8081 ☐ 608 ☐ CLP	PCB's ☐ 8082 ☐ 608 ☐ CLP	METALS, TOTAL (List in comments below)	METALS, DISSOLVED (List in comments below)	AVS SEM Sulfide AVS SEM Metals*								REMARKS: ALTERNATE DESCRIPTION
YS06-SD70-0809	R0904418-001	8-4-09	09:40	Soil	1								X								
YS06-SD71-0809	002	8-4-09	10:00		1								X								
YS06-SD72-0809	003	8-4-09	10:25		1								X								
YS06-SD69-0809	004	8-4-09	10:45		1								X								
YS06-SD68-0809	005	8-4-09	11:10		1								X								
YS06-SD68P-0809	006	8-4-09	11:20		1								X								
YS06-SD73-0809	007	8-5-09	10:45		3								X								Required QL
YS06-SD74-0809	008	8-5-09	11:50		1								X								
YS06-SD74P-0809	009	8-5-09	12:00		1								X								
YS06-SD75-0809	010	8-5-09	12:40		1								X								

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn Acetate
6. MeOH
7. $NaHSO_4$
8. Other Ice to 4°C

SPECIAL INSTRUCTIONS/COMMENTS
Metals * SEM: Zn, Cu, Ag, Ni, Cd, Pb, Hg

See QAPP ☐

TURNAROUND REQUIREMENTS
___ RUSH (SURCHARGES APPLY)
___ 24 hr ___ 48 hr ___ 5 day
X STANDARD
REQUESTED FAX DATE:
REQUESTED REPORT DATE:

REPORT REQUIREMENTS
___ I. Results Only
___ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
___ III. Results + QC and Calibration Summaries
X IV. Data Validation Report with Raw Data
___ V. Specialized Forms / Custom Report
Edata ___ Yes ___ No

INVOICE INFORMATION
R0904418
PO#:
BILL TO:
SUBMISSION #:

SAMPLE RECEIPT CONDITION/COOLER TEMP: ____ CUSTODY SEALS: Y N

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature: Tom Jones	Signature:	Signature:	Signature:	Signature:
Printed Name: Greg Oyler, Esmeralda	Printed Name: John Jones	Printed Name:	Printed Name:	Printed Name:	Printed Name:
Firm: CAS	Firm: CAS	Firm:	Firm:	Firm:	Firm:
Date/Time: 8-11-09 18:00	Date/Time: 8/12/09 08 1000	Date/Time:	Date/Time:	Date/Time:	Date/Time:

Distribution: White - Returned to Originator; Yellow - Lab Copy; Pink - Retained by Client

SCOC 1102 08

Q21

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC Lit

Client / Project: CAS Rochester Service Request: ~~K09~~ R0904418

Received: 8/14/09 Opened: 8/14/09 By: LL

1. Samples were received via? *US Mail* *Fed Ex* (*UPS*) *DHL* *GH* *GS* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (*Cooler*) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? 8/14/09 (Y) (N)
4. Is shipper's air-bill filed? If not, record air-bill number: 1Z17W4381349518644 NA Y N

5. Temperature of cooler(s) upon receipt (°C):	2.1			
Temperature Blank (°C):	—			
Thermometer ID:	263			
6. If applicable, list Chain of Custody Numbers:	—			

7. Packing material used. *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Sleeves* *Other* paper
8. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
9. **Did all bottles arrive in good condition (unbroken)?** *Indicate in the table below.* NA (Y) N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
11. Did all sample labels and tags agree with custody papers? *Indicate in the table below* NA (Y) N
12. **Were appropriate bottles/containers and volumes received for the tests indicated?** NA (Y) N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below* (NA) Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
15. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? (NA) Y N
16. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

*Does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions:

Columbia Analytical Services, Inc.
Cooler Receipt and Preservation Form

PC LH

Client / Project: CTO-166 Yorktown NWS Service Request ~~K09~~ R0904418

Received: 8/12/09 Opened: 8/12/09 By: JJ

1. Samples were received via? *US Mail* *Fed Ex* (UPS) *DHL* *GH* *GS* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) (Cooler) *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA (Y) N If yes, how many and where? 1 front
   If present, were custody seals intact? (Y) N If present, were they signed and dated? (Y) N
4. Is shipper's air-bill filed? If not, record air-bill number: 1E 17W 435 13 49360 4113 NA Y (N)

5. **Temperature of cooler(s) upon receipt (°C):** 2.1
   Temperature Blank (°C): —
   Thermometer ID: 261
6. If applicable, list Chain of Custody Numbers:
7. Packing material used. *Inserts* *Baggies* (*Bubble Wrap*) *Gel Packs* (*Wet Ice*) *Sleeves* (*Other*) Paper
8. Were custody papers properly filled out (ink, signed, etc.)? NA (Y) N
9. **Did all bottles arrive in good condition (unbroken)?** *Indicate in the table below.* NA (Y) N
10. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N
11. Did all sample labels and tags agree with custody papers? *Indicate in the table below* NA (Y) N
12. **Were appropriate bottles/containers and volumes received for the tests indicated?** NA (Y) N
13. Were the pH-preserved bottles tested* received at the appropriate pH? *Indicate in the table below* (NA) Y N
14. Were VOA vials received without headspace? *Indicate in the table below.* (NA) Y N
15. Are CWA Microbiology samples received with >1/2 the 24hr. hold time remaining from collection? (NA) Y N
16. Was C12/Res negative? (NA) Y N

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

*Does not include all pH preserved sample aliquots received. See sample receiving SOP (SMO-GEN).

Additional Notes, Discrepancies, & Resolutions:

DOD CRITERIA "SDG 4" (soils) S 13341

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS
TAT: 20 calendar days
Report style: level IV
Disk requirement: CHEMHILL LabSpec

Samples shipped to: CAS
Contact: Dan Patton
Address: 1 Mustard St.
Rochester, NY 14609
Phone: (585) 288-5380 x130
Project Locale (state): VA

CompuChem point-of-contact: (4) CATHY DAVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050
Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other _____

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S - SW-846, W- CWA 600-series, O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: HRS/SEMI*	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-SD70-0809	8/4	0940	5	F	U			1		✓	08	*rpt. Cd, Cu, Hg, Pb, Ni, Ag & Zn in uMoles/g
YS06-SD71-0809	|	1000	|	|	|			|		✓		
YS06-SD72-0809	|	1025	|	|	|			|		✓		
YS06-SD69-0809	|	1045	|	|	|			|		✓		
YS06-SD68-0809	|	1110	|	|	|			|		✓		
YS06-SD68P-0809	|	1120	|	|	|		↓	|		✓		
YS06-SD73-0809	8/5	1045	|	|	|		3	X	✓		USE FOR MS/MSD
YS06-SD74-0809	|	1150	|	|	|		1	|	✓		
YS06-SD74P-0809	|	1200	|	|	|		|	|	✓		
YS06-SD75-0809	↓	1220	↓	↓	↓			↓		✓		

Clients Special Instructions: Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig)	Date: 8/6/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1610	Company Name:	Time:	Company Name:	
#1 Received by:(sig) Matt Cann	Date: 8/7/09	#2 Received by:(sig)	Date:	#2 Received by:(sig)	
Company Name: CAS	Time: 0938	Company Name:	Time:	Company Name:	

R0904418
Compuchem
CTO-166 Yorktown NWS

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

024

DOD CRITERIA "SDG2" (soils) S 13350

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 YORKTOWN NWS
TAT: 20 Calendar days
Report style: level IV
Disk requirement: CH2M HILL LAB SPEC

Samples shipped to: CAS
Contact: Deb Patton
Address: 1 Mustard St
Rochester NY 14609
Phone: (585) 288 5380 x 130
Project Locale (state) VA

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379- 4050
Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1
1. Surface Water
2. Ground Water
3. Leachate
4. Rinsate
5. Soil / Sediment / Sludge
6. Trip Blank
7. Oil
8. Waste
9. Other _____

BOX #2
A. HCl + Ice
B. HNO_3 + Ice
C. NaOH + Ice
D. H_2SO_3 + Ice
E. Unpreserved
F. Ice Only
G. Other _____
H. $NaHSO_4$ + Ice
I. ZnAc+NaOH + Ice
J. Methanol

BOX #3
F- Filtered
U- Unfiltered

BOX #4
H- High
M- Medium
L- Low

BOX #5
C- CLP T- TCLP
S - SW-846
W- CWA 600-series
O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: AVS/SEM	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-SD76-0809	8/6	1030	75	F	U			1		✓		* report Cd, Cu, Hg, Pb, Ni, Ag & Zn in umoles/g
YS06-SD77-0809	↓	1050	↓	↓	↓			↓		✓		
YS06-SD78-0809	↓	1155	↓	↓	↓			↓		✓		
												4418

Clients Special Instructions: Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relenquished by:(sig)	Date: 8/12/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1405	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig) Matt Cass	Date: 8/13/09	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name: CAS	Time: 1010	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now
Note (2) Samples should be stored 60 days after date report mailed at no extra charge
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

025

Cooler Receipt And Preservation Check Form

Project/Client Conestoga Submission Number 809-4418

Cooler received on 8/7/09 by: MC COURIER: CAS (UPS) FEDEX VELOCITY CLIENT

1.	Were custody seals on outside of cooler?	(YES)	NO			
2.	Were custody papers properly filled out (ink, signed, etc.)?	(YES)	NO			
3.	Did all bottles arrive in good condition (unbroken)?	(YES)	NO			
4.	Did any VOA vials have significant* air bubbles?	YES	NO	(N/A)		
5.	Were **Ice** or **Ice packs** present?	(YES)	NO			
6.	Where did the bottles originate?	(CAS/ROC),	(CLIENT)			
7.	Temperature of cooler(s) upon receipt:	1°				
	Is the temperature within 0° - 6° C?:	(Yes)	Yes	Yes	Yes	Yes
	If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: 8/7/09 1010

Thermometer ID: 161 / IR GUN#2 / (IR GUN#3) Reading From: Temp Blank / Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: _____

PC Secondary Review: _____

Cooler Breakdown: Date: 8/7/09 by: _____

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO
4.	Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated		(N/A)

Explain any discrepancies: _____

pH	Reagent	YES	NO	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
Residual Chlorine (-)	For TCN and Phenol			If present, contact PM to add ascorbic acid					
	$Na_2S_2O_3$	-	-						
	Zn Aceta	-	-						
	HCl	*	*						

*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers: _____

Other Comments:

PC Secondary Review: _____

*significant air bubbles are greater than 5-6 mm

H:\SMODOCS\Cooler Receipt 2.doc

Cooler Receipt And Preservation Check Form

Project/Client Compuchem Submission Number R09-4416

Cooler received on 8/13/09 by: MM **COURIER:** CAS (UPS) FEDEX VELOCITY CLIENT

1.	Were custody seals on outside of cooler?	(YES)	NO
2.	Were custody papers properly filled out (ink, signed, etc.)?	(YES)	NO
3.	Did all bottles arrive in good condition (unbroken)?	(YES)	NO
4.	Did any VOA vials have significant* air bubbles?	YES	NO (N/A)
5.	Were **Ice** or **Ice packs** present?	(YES)	NO
6.	Where did the bottles originate?	CAS/ROC, (CLIENT)	

7. Temperature of cooler(s) upon receipt:	10				
Is the temperature within 0° - 6° C?:	(Yes)	Yes	Yes	Yes	Yes
If No, Explain Below	No	No	No	No	No

Date/Time Temperatures Taken: 8/13/09 1035

Thermometer ID: 161 / IR GUN#2 / (IR GUN#3) Reading From: (Temp Blank) / Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: _____

PC Secondary Review: DM 8/18/09

Cooler Breakdown: Date: 8/13/09 by: MM

1.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
2.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
3.	Were correct containers used for the tests indicated?	(YES)	NO

4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies: _____

pH	Reagent	YES	NO	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12	NaOH								
≤2	HNO_3								
≤2	H_2SO_4								
Residual Chlorine (-)	For TCN and Phenol			If present, contact PM to add ascorbic acid					
	$Na_2S_2O_3$	-	-						
	Zn Aceta	-	-						
	HCl	*	*						

*Not to be tested before analysis – pH tested and recorded by VOAs or GenChem on a separate worksheet

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers: Client bottle

Other Comments:

PC Secondary Review: [signature] 8/13/09

*significant air bubbles are greater than 5-6 mm

This SDG contains data or samples analyzed for acid volatile sulfide and simultaneously extracted metals analytes (AVS/SEM). Please note that method criteria were used to assess all calibrations and quality control because Region III does not have a validation document for this method. Region III qualification conventions and qualifiers were used.

HOLDING TIMES

Sampling Date: 8/4, 8/5, 8/6
Received Date: 8/7, 8/13
Prep. Dates: AVS: 8/18, SEM – ICP 8/18
Analysis Dates: AVS: 8/18 SEM – ICP 8/20, 8/26

Cooler temps OK, receipt documentation present.
Holding time requirements were met.

CALIBRATIONS

AVS is a titration method. Analysis for SEM was per SW-846 methods. An initial calibration single point calibration was analyzed for ICP metals. Initial calibration curve was analyzed for Hg. All initial calibration criteria were met. Calibration verification criteria were met for all ICV and CCV standards. The ICSAB standards exhibited acceptable recoveries for all analytes. The CRI check standards were analyzed and met method criteria. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if an analyte is found in the blank but not in the sample.
- Sample weight, volume or dilution factor must be taken into consideration when applying the criteria.
- Apply the same data validation guidelines to any associated calibration, preparation, and field QC blanks and all associated samples.
- Qualification/Action codes:

  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is greater than or equal to the MDL but less than or equal to the RL, result is reported as non-detect at the RL.

Blank Contamination and Qualification Summaries

Blank ID	Analyte	Concentration	Action Level	Q Flag
no quals				

Field QC blanks were not submitted for the AVS/SEM fraction.

The concentration noted for the CCBs is the highest concentration in all the CCBs. However, when qualifying samples for CCB contamination, associated samples are those just prior to or just following a CCB. Therefore, not all analytes in all samples are flagged for noted CCB contamination. See worksheets for associations. Samples are qualified for field QC blank contamination based on QC tracking provided by CH2M HILL. Negative contamination in a prep blank or CCB if less than the analyte CRDL is qualified based on professional judgment. Field QC blanks are not qualified for laboratory blank contamination per CH2MHILL.

See validation report for specific samples and qualifications.

MATRIX SPIKE/DUPLICATE SUMMARY

The MS/MD of sample US06-SD73-0809 was acceptable for all parameters. All associated LCS samples exhibited acceptable recoveries for all analytes.

SERIAL DILUTIONS

The serial dilution analysis submitted was OK.

FIELD DUPLICATE SAMPLE SUMMARY

Note: Field duplicate results are assessed only if both results are above the RL.

Sample ID: YS06-SD68-0809 Duplicate Sample ID: YS06-SD68P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
zinc	0.113	0.0529	72%
AVS	1.59	2.69	51%

Comments: J AVS & zinc

Sample ID: YS06-SD74-0809 Duplicate Sample ID: YS06-SD74P-0809

Analyte	Sample Conc.	Duplicate Conc.	RPD
zinc	0.422	0.54	25%
AVS	1.71	2.68	44%

Comments: J AVS

SAMPLE CALCULATION

EPA SAMPLE ID: YS06-SD70-0809
COMPOUND: ZINC
CONCENTRATION: 0.238 umole/g
%Solids – 55.9

Raw result: 7.565 umole/L

7.565 umole/L * 0.1L/5.68g * 1/0.559 = 0.238 umole/g

EPA SAMPLE ID: YS06-SD70-0809
COMPOUND: AVS
CONCENTRATION: 1.89 umole/g
%Solids –

Titrated result: 60.6 mg/Kg

60.6 mg/Kg * 1Kg/1000g * 1 umole/0.032mg = 1.89 umole/g

SAMPLE RESULT VERIFICATION

Specific Comments:

All sample results were reported within the calibration/linear range of the instruments. Raw data was verified.

Reviewer JCleveland **Date:** 10/17/09

COLUMBIA ANALYTICAL SERVICES, INC.

Client:	Compuchem	Service Request No.:	KR0904418
Project:	CTO-166 Yorktown NWS	Date Received:	08/07-13/09
Sample Matrix:	Soil		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc (CAS). This report contains analytical results for samples designated for Tier III validation deliverables including summary forms and all of the associated raw data for each of the analyses. When appropriate to the method, method blank results have been reported with each analytical test.

Sample Receipt

Thirteen soil samples were received for analysis at Columbia Analytical Services between 08/07/09 and 08/13/09. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4°C upon receipt at the laboratory.

General Chemistry Parameters

No anomalies associated with the analysis of these samples were observed.

Total Metals

No anomalies associated with the analysis of these samples were observed.

Approved by _____ Date 08/24/09

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # SDG001, Empirical Laboratories
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameter noted in the table below for SDG #s SDG001. The data validation was performed in accordance with the SW-846 8330 for explosives, PETN and 3,5-dinitroaniline. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site.

Sample ID	Lab ID	Matrix	EXP
YS06-EB01-032309	0903310-04	water	X
YS06-EB01-032409	0903325-02	water	X
YS06-EB01-032509	0903339-01	water	X
YS06-EB02-032309	0903310-05	water	X
YS06-EB02-032409	0903136-09	water	X
YS06-EB02-032509	0903339-02	water	X
YS06-GW01-0309	0903310-02	water	X
YS06-GW01A-0309	0903310-01	water	X
YS06-GW01P-0309	0903310-03	water	X
YS06-GW02-0309	0903325-01	water	X
YS06-GW03-0309	0903339-03	water	X
YS06-GW09-0309	0903339-04	water	X
YS06-GW09A-0309	0903339-05	water	X
YS06-GW10-0309	0903325-05	water	X
YS06--GW10A-0309	0903325-06	water	X
YS06-GW11-0309	0903325-04	water	X
YS06-GW01A-0309 MS	0903310-01MS	water	X
YS06-GW01A-0309 MSD	0903310-01MSD	water	X

The following quality control samples were provided with this SDG: samples YS06-EB01-032309, YS06-EB02-032309, YS06-EB01-032409, YS06-EB02-032409, YS06-EB01-032509, and YS06-EB02-032509-equipment blanks; and sample YS06-GW01P-0309-field duplicate of sample YS06-GW01-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Sample Condition *
- HPLC Performance *
- Initial/Continuing Calibrations
- Blanks
- Surrogates
- Laboratory Control Samples *
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates *
- Identification/Quantitation
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No issues requiring the rejection of analytical data were noted in this data package.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

Explosives by 8330

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

One of the samples exhibited high surrogate recoveries. Results in the samples were qualified.

All P flagged results were qualified as estimated.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required.

Technical Holding Times

According to chain of custody records, sampling was performed on 3/23-3/25 and samples were received at the sub-contracting laboratory 3/25 and 3/27. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D	Samples	Q Flag	Q Code
4/8/09, 1712	tetryl	-16.9	all samples	J/UJ	CCL
4/8/09, 2246		-17.0			
4/12/09, 0016		-16.7			
4/15/09, 0722		-20.1			
4/8/09, 1205	3,5-dinitroaniline	-45.8	YS06-GW01A-0309, YS06-GW01-0309, YS06-GW01P-0309, YS06-EB01-032309, YS06-EB02-032309	J/UJ	CCL
4/8/09, 1739		-67.2			
4/8/09, 2313		-75			
4/15/09, 0750	3,5-dinitroaniline	36.4	YS06-GW09-0309	J	CCH
4/15/09, 1324		36.5			

Blanks

Explosives

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
EW1BLK0327	1,3,5-trinitrobenzene	0.11J ug/L	0.55 ug/L	B	BL
YS06-EB01-032509	1,3,5-trinitrobenzene	0.17JPM ug/L	0.85 ug/L	B	BL
YS06-EB02-032509	RDX	0.15Jug/L	0.75 ug/L	B	BL

Qualifications required in the field samples are noted in the following table.

Sample ID	Compound	Q Flag	Q Code
YS06-GW03-0309, YS06-GW02-0309, YS06-GW11-0309, YS06-GW10A-0309	1,3,5-trinitrobenzene	B	BL
YS06-GW09A-0309	RDX	B	BL

Surrogates

Explosives

Sample YS06-GW09-0309 exhibited high recoveries for 1,2-dinitrobenzene (749/311/437); therefore all positive results in the sample were qualified as biased high (K), qualifier code: SSH.

Identification/Quantitation

Explosives

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Reporting Limits

Explosives by 8330

Two of the target compounds did not meet the QAPP established method detection limits (MDLs) as noted on page 96 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) met criteria. No validation action was required.

Compound	QAPP MDL (ug/L)	Lab MDL (ug/L)
2-amino-4,6-dinitrotoluene	0.1	0.12
3-nitrotoluene	0.1	0.12

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

CH2M HILL
NWS Yorktown
SDG001

Summary of Data Qualifications

Explosives

Sample ID	Compound	Results	Q Flag	Q code
all samples	tetryl	+/-	J/UJ	CCL
YS06-GW01A-0309, YS06-GW01-0309, YS06-GW01P-0309, YS06-EB01-032309, YS06-EB02-032309	3,5-dinitroaniline	+/-	J/UJ	CCL
YS06-GW09-0309	3,5-dinitroaniline	+	J	CCH
YS06-GW03-0309, YS06-GW02-0309, YS06-GW11-0309, YS06-GW10A-0309	1,3,5-trinitrobenzene	+	B	BL
YS06-GW09A-0309	RDX	+	B	BL
YS06-GW09-0309	all compounds	+	K	SSH
all samples	all compounds	+P	J	2C

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-01

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 046V4601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 14:24

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.93		U
121-82-4	RDX	0.075	0.93		U
98-95-3	Nitrobenzene	0.082	0.93		U
99-65-0	1,3-Dinitrobenzene	0.075	0.93		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.93		U
121-14-2	2,4-Dinitrotoluene	0.097	0.93		U
606-20-2	2,6-Dinitrotoluene	0.097	0.93		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.93		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.93		U
479-45-8	Tetryl	0.075	0.93		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.93		U
88-72-2	2-Nitrotoluene	0.075	0.93		U
99-99-0	4-Nitrotoluene	0.075	0.93		U
99-08-1	3-Nitrotoluene	0.11	0.93		U
618-87-1	3,5-Dinitroaniline	0.075	0.93		~~U~~ UJ CCL

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-01

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 004V0401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 13:00

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 051V5101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 16:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.24	J
121-82-4	RDX	0.080	1.0	0.88	J
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		UJ CCL

JDC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 007V0701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 14:31

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JDC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 054V5401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 18:07

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98	0.38	~~J~~ J 2C
121-82-4	RDX	0.078	0.98	1.3	
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		~~J~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		~~J~~ UJ CCL

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 008V0801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 15:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JJC 6809

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-04

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 055V5501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 18:35

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.96		U
121-82-4	RDX	0.077	0.96	0.086	~~JPM~~ J X
98-95-3	Nitrobenzene	0.085	0.96		U
99-65-0	1,3-Dinitrobenzene	0.077	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.96	0.62	J#
121-14-2	2,4-Dinitrotoluene	0.10	0.96		U
606-20-2	2,6-Dinitrotoluene	0.10	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.96		U
479-45-8	Tetryl	0.077	0.96		~~U~~ UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.96		U
88-72-2	2-Nitrotoluene	0.077	0.96		U
99-99-0	4-Nitrotoluene	0.077	0.96		U
99-08-1	3-Nitrotoluene	0.12	0.96		U
618-87-1	3,5-Dinitroaniline	0.077	0.96		~~U~~ UJ CCL

8/6/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-04

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 009V0901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 15:32

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-05

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 056V5601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 19:03

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.93		U
121-82-4	RDX	0.075	0.93		U
98-95-3	Nitrobenzene	0.082	0.93		U
99-65-0	1,3-Dinitrobenzene	0.075	0.93		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.93	0.12	~~JPMB~~ J a
121-14-2	2,4-Dinitrotoluene	0.097	0.93		U
606-20-2	2,6-Dinitrotoluene	0.097	0.93		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.93		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.93		U
479-45-8	Tetryl	0.075	0.93		~~U~~ UJ ccl
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.93		U
88-72-2	2-Nitrotoluene	0.075	0.93		U
99-99-0	4-Nitrotoluene	0.075	0.93		U
99-08-1	3-Nitrotoluene	0.11	0.93		U
618-87-1	3,5-Dinitroaniline	0.075	0.93		~~U~~ UJ ccl

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903310-05

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/23/09 13:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 16:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-01

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 21:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.047	0.94		U
121-82-4	RDX	0.047	0.94	0.081	J
98-95-3	Nitrobenzene	0.047	0.94		U
99-65-0	1,3-Dinitrobenzene	0.047	0.94		U
99-35-4	1,3,5-Trinitrobenzene	0.047	0.94	0.069	~~JPB~~ B BL
121-14-2	2,4-Dinitrotoluene	0.047	0.94		U
606-20-2	2,6-Dinitrotoluene	0.047	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.047	0.94	0.070	~~JP~~ J JC
35572-78-2	2-Amino-4,6-dinitrotoluene	0.047	0.94		U
479-45-8	Tetryl	0.047	0.94		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.047	0.94		U
88-72-2	2-Nitrotoluene	0.047	0.94		U
99-99-0	4-Nitrotoluene	0.047	0.94		U
99-08-1	3-Nitrotoluene	0.047	0.94		U
618-87-1	3,5-Dinitroaniline	0.047	0.94		U

JBC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-01

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 18:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 011V1101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 21:29

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.048	0.96		U
121-82-4	RDX	0.048	0.96		U
98-95-3	Nitrobenzene	0.048	0.96		U
99-65-0	1,3-Dinitrobenzene	0.048	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.048	0.96	0.43	JB
121-14-2	2,4-Dinitrotoluene	0.048	0.96		U
606-20-2	2,6-Dinitrotoluene	0.048	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.048	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.048	0.96		U
479-45-8	Tetryl	0.048	0.96		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.048	0.96		U
88-72-2	2-Nitrotoluene	0.048	0.96		U
99-99-0	4-Nitrotoluene	0.048	0.96		U
99-08-1	3-Nitrotoluene	0.048	0.96		U
618-87-1	3,5-Dinitroaniline	0.048	0.96		U

JB 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 18:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 012V1201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 21:57

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.048	0.95		U
121-82-4	RDX	0.048	0.95		U
98-95-3	Nitrobenzene	0.048	0.95		U
99-65-0	1,3-Dinitrobenzene	0.048	0.95		U
99-35-4	1,3,5-Trinitrobenzene	0.048	0.95	0.22	~~JPMB~~ J JC
121-14-2	2,4-Dinitrotoluene	0.048	0.95		U
606-20-2	2,6-Dinitrotoluene	0.048	0.95		U
118-96-7	2,4,6-Trinitrotoluene	0.048	0.95		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.048	0.95		U
479-45-8	Tetryl	0.048	0.95		UJ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.048	0.95		U
88-72-2	2-Nitrotoluene	0.048	0.95		U
99-99-0	4-Nitrotoluene	0.048	0.95		U
99-08-1	3-Nitrotoluene	0.048	0.95		U
618-87-1	3,5-Dinitroaniline	0.048	0.95		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 016V1601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 12:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 19:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 013V1301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 22:25

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.050	1.0		U
121-82-4	RDX	0.050	1.0	0.56	~~JPM~~ J JC
98-95-3	Nitrobenzene	0.050	1.0		U
99-65-0	1,3-Dinitrobenzene	0.050	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.050	1.0	0.056	~~JPB~~ B CL
121-14-2	2,4-Dinitrotoluene	0.050	1.0		U
606-20-2	2,6-Dinitrotoluene	0.050	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.050	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.050	1.0		U
479-45-8	Tetryl	0.050	1.0		~~U~~ UJ CL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.050	1.0		U
88-72-2	2-Nitrotoluene	0.050	1.0	0.052	~~JP~~ J JC
99-99-0	4-Nitrotoluene	0.050	1.0		U
99-08-1	3-Nitrotoluene	0.050	1.0		U
618-87-1	3,5-Dinitroaniline	0.050	1.0		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 017V1701

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 03/24/09 09:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 19:35

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-05

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 22:53

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.049	0.98		U
121-82-4	RDX	0.049	0.98	0.10	~~JPM~~ J QC
98-95-3	Nitrobenzene	0.049	0.98		U
99-65-0	1,3-Dinitrobenzene	0.049	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.049	0.98	8.9	~~J~~
121-14-2	2,4-Dinitrotoluene	0.049	0.98		U
606-20-2	2,6-Dinitrotoluene	0.049	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.049	0.98	1.3	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.049	0.98	0.70	~~JP~~ J QC
479-45-8	Tetryl	0.049	0.98		~~UJ~~ CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.049	0.98		U
88-72-2	2-Nitrotoluene	0.049	0.98		U
99-99-0	4-Nitrotoluene	0.049	0.98		U
99-08-1	3-Nitrotoluene	0.049	0.98		U
618-87-1	3,5-Dinitroaniline	0.049	0.98	0.59	J

QC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-05

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 018V1801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 13:35

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 20:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JJC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-06

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/24/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 23:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.047	0.94		U
121-82-4	RDX	0.047	0.94		U
98-95-3	Nitrobenzene	0.047	0.94		U
99-65-0	1,3-Dinitrobenzene	0.047	0.94		U
99-35-4	1,3,5-Trinitrobenzene	0.047	0.94	0.064	~~JB~~ B BL
121-14-2	2,4-Dinitrotoluene	0.047	0.94		U
606-20-2	2,6-Dinitrotoluene	0.047	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.047	0.94		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.047	0.94		U
479-45-8	Tetryl	0.047	0.94		U UU CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.047	0.94		U
88-72-2	2-Nitrotoluene	0.047	0.94		U
99-99-0	4-Nitrotoluene	0.047	0.94		U
99-08-1	3-Nitrotoluene	0.047	0.94		U
618-87-1	3,5-Dinitroaniline	0.047	0.94		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903325-06

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 020V2001

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 03/24/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 21:06

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-01

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 044V4401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 10:37

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.96	0.16	~~JP~~ J 2C
121-82-4	RDX	0.077	0.96	0.15	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.085	0.96		U
99-65-0	1,3-Dinitrobenzene	0.077	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.96	0.17	~~JPM~~ J 2C
121-14-2	2,4-Dinitrotoluene	0.10	0.96		U
606-20-2	2,6-Dinitrotoluene	0.10	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.96		U
479-45-8	Tetryl	0.077	0.96		~~JP~~ U 2C
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.96		U
88-72-2	2-Nitrotoluene	0.077	0.96		U
99-99-0	4-Nitrotoluene	0.077	0.96		U
99-08-1	3-Nitrotoluene	0.12	0.96		U
618-87-1	3,5-Dinitroaniline	0.077	0.96		U

MR 4/30/09
JPC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-01

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 024V2401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 23:07

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 045V4501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 11:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.077	0.96	0.18	J
121-82-4	RDX	0.077	0.96	0.15	J
98-95-3	Nitrobenzene	0.085	0.96		U
99-65-0	1,3-Dinitrobenzene	0.077	0.96		U
99-35-4	1,3,5-Trinitrobenzene	0.077	0.96	0.31	~~JPM~~J JC
121-14-2	2,4-Dinitrotoluene	0.10	0.96		U
606-20-2	2,6-Dinitrotoluene	0.10	0.96		U
118-96-7	2,4,6-Trinitrotoluene	0.077	0.96		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.96		U
479-45-8	Tetryl	0.077	0.96		UJQUTCA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.077	0.96		U
88-72-2	2-Nitrotoluene	0.077	0.96		U
99-99-0	4-Nitrotoluene	0.077	0.96		U
99-08-1	3-Nitrotoluene	0.12	0.96		U
618-87-1	3,5-Dinitroaniline	0.077	0.96		U

4/30/09
JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-02

Sample wt/vol: 1040 (g/ml) ML Lab File ID: 025V2501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 16:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/23/09 23:37

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.9		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-03

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 046V4601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 11:33

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.089	1.1		U
121-82-4	RDX	0.089	1.1		U
98-95-3	Nitrobenzene	0.098	1.1		U
99-65-0	1,3-Dinitrobenzene	0.089	1.1		U
99-35-4	1,3,5-Trinitrobenzene	0.089	1.1	0.12	JBBL
121-14-2	2,4-Dinitrotoluene	0.12	1.1		U
606-20-2	2,6-Dinitrotoluene	0.12	1.1		U
118-96-7	2,4,6-Trinitrotoluene	0.089	1.1		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.1		U
479-45-8	Tetryl	0.089	1.1		UJ CA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.089	1.1		U
88-72-2	2-Nitrotoluene	0.089	1.1		U
99-99-0	4-Nitrotoluene	0.089	1.1		U
99-08-1	3-Nitrotoluene	0.13	1.1		U
618-87-1	3,5-Dinitroaniline	0.089	1.1		U

4/30/09 JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-03

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 026V2601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 10:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 00:07

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.29	3.3		U

JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-04

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 047V4701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 12:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98	4.1	K SSH
121-82-4	RDX	0.078	0.98	70	~~P~~ K SSH
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98	18	K SSH
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98	51	K SSH
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98	5.0	K SSH
479-45-8	Tetryl	0.078	0.98		U RHJ CCI
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98	0.78	~~JPM~~ J CCI

4/30/09 JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-04

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 027V2701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 00:38

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 048V4801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 12:29

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0	0.13	J B BL
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

4/30/09 JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: 0903339-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 028V2801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/25/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 01:08

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

6809

Holding Times

Sampling Date: 3/23-3/25
Received Date: 3/25-3/27
Extraction Dates: 3/26, 3/27, 3/31
Analysis Dates: 4/8-4/24

Sample receipt documentation was in order. Cooler temps were acceptable with one exception.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8330. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

Contamination was reported in the associated field QC blanks.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
EW1BLK0327	1,3,5-trinitrobenzene	0.11J ug/L	0.55 ug/L	B	BL
YS06-EB01-032509	1,3,5-trinitrobenzene	0.17JPM ug/L	0.85 ug/L	B	BL
YS06-EB02-032509	RDX	0.15Jug/L	0.75 ug/L	B	BL

Sample ID	Compound	Q Flag	Q Code
YS06-GW03-0309, YS06-GW02-0309, YS06-GW11-0309, YS06-GW10A-0309	1,3,5-trinitrobenzene	B	BL
YS06-GW09A-0309	RDX	B	BL

SURROGATE RECOVERIES

All surrogate recovery criteria were met with the exception of one sample requiring qualifications. All reported positive results in sample YS06-GW09-0309 were qualified as biased high K.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-GW01A-0309 exhibited acceptable recoveries (within QAPP limits) in the MS and/or the MSD. RPDs were OK. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compounds in the LCS and/or the LCSD. No qualifications were required. RPDs were OK

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW01-0309 **Duplicate ID:** YS06-GW01P-0309

Compound	Sample Conc.	Duplicate Conc.	RPD
HMX	0.24	0.38	45%
RDX	0.88	1.3	39%
1,3,5-TNB			#DIV/0!

Comments: No qualifications were required. All results but RDX in the dup were <RLs.

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J. Some samples were reported with an M qualifier to indicate matrix issues. These results were qualified as estimated J if not already flagged due to another QC issue.

Reviewer JCleveland **Date:** 61109

Initial Calibration Date: 2/20/09, HPLC2, ULTRA C-18
RRF and %RSD Calculations: RF10, FILE ID 002V0401
Compound Name: rdx
Lab Value: 147.6000

Area of Compound	1476
Conc. Of Compund	10
Calculated CF	147.6000

Compound Name: rdx
Lab Value: 17.2

CF 1	147.6000
CF 2	110.4800
CF 3	195.5200
CF 4	157.8460
CF 5	139.9800
CF 6	142.6960
CF7	141.9630
Calculated % RSD	17.21

Continuing Calibration File ID: 4/15/09, 0722, File ID 037v3701.d
RRF and %D Calculations:
Compound Name: nitrobenzene
Lab Value: 388.00000

Area of Compound	388461
Conc. Of Compund	1000
Calculated CF	388.4610

Compound Name: nitrobenzene
Lab Value: 10.7

Average RRF	351.00000
Calibration Check RRF	388.00000
Calculated % D	-10.5

SAMPLE CALCULATION

Sample ID: YS06-GW10-0309
Standard ID: ICAL
Compound: 2,4,6-TNT
Concentration: 1.3 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	3531		
CF of Compound	21.4795		
Dilution Factor	1		
Weight of Sample	NA		
Extract Volume	8		
Volume of Sample	1020	NA	
% Moisture	NA		
injection volume	100	NA	
Conversion Factor	100		
Concentration	1.2900	#REF!	#REF!

ORGANIC CASE NARRATIVE – Explosives
CH2M Hill, Inc. – YORKTOWN_NWS
SDG: SDG001/ CTO166
Workorder: 0903310, 0903325 and 0903339

Sampled	Rec'd	Lab ID	Client ID
3/23/2009	3/25/2009	0903310-01	YS06-GW01A-0309
3/23/2009	3/25/2009	0903310-02	YS06-GW01-0309
3/23/2009	3/25/2009	0903310-03	YS06-GW01P-0309
3/23/2009	3/25/2009	0903310-04	YS06-EB01-032309
3/23/2009	3/25/2009	0903310-05	YS06-EB02-032309
3/24/2009	3/26/2009	0903325-01	YS06-GW02-0309
3/24/2009	3/26/2009	0903325-02	YS06-EB01-032409
3/24/2009	3/26/2009	0903325-03	YS06-EB02-032409
3/24/2009	3/26/2009	0903325-04	YS06-GW11-0309
3/24/2009	3/26/2009	0903325-05	YS06-GW10-0309
3/24/2009	3/26/2009	0903325-06	YS06-GW10A-0309
3/25/2009	3/27/2009	0903339-01	YS06-EB01-032509
3/25/2009	3/27/2009	0903339-02	YS06-EB02-032509
3/25/2009	3/27/2009	0903339-03	YS06-GW03-0309
3/25/2009	3/27/2009	0903339-04	YS06-GW09-0309
3/25/2009	3/27/2009	0903339-05	YS06-GW09A-0309

Method: The samples were analyzed by USEPA SW-846 Method 8330A (solid phase extraction followed by packed column HPLC) for waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline. Wavelengths 254nm and 210nm were used to obtain the requested quantitation limits.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: Most CCVs were within 20% difference or exceeded with a positive bias and were non-detect or were not required for confirmation. The 4/7/09 C-18 sequence CCVs exceeded 20% difference with negative biases for 3,5-dinitroaniline. Samples were reanalyzed for 3,5-dinitroaniline 4/9/09-4/10/09 and confirmed non-detect as reported on the associated sample result forms.
- Blank Results: Method blanks EW1BLK0326 and EW1BLK0327 have reported concentrations of 1,3,5-trinitrobenzene less than ½ the quantitation limit. Reported concentrations in the associated samples are qualified with a "B".
- Surrogate Recoveries: Recoveries of the surrogate exceeded the limit of 145% at 749% (C-18), 311% (P2) and 437% (P2 for PETN) in sample YS06-GW09-0309. All other surrogate recoveries were within limits.
- LCS/LCSD Results: Recoveries of Tetryl, 1,3,5-trinitrobenzene and HMX were below the limits of 20%, 65% and 80% at 0%/(62%), 55%/(96%) and 79%/(89%) in spike samples EW1BLK0331LCS/LCSD with 1,3,5-trinitrobenzene having an RPD exceeding the limit of 30 at 41. All other recoveries and relative percent differences were within limits. Results for tetryl are qualified with a "Q" in the associated samples. All other LCS/LCSD results were within limits.
- MS/MSD Results: All recoveries and relative percent differences were within limits.
- Dilutions: All samples were analyzed without dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately

reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

START # 11 SDG 1 S 13000
(and keep open)

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6
TAT: 21 calendar days
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL
Contact: Janice Shilling
Address: 621 Mainstream Drive Suite 270
Nashville, TN 37228
Phone: (615) 345-1115 x 252

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050

Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Expl. 8330 + PETN @ 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
												e-mail cdover@compuchemlabs.com if any questions
	2009											
YS06-GW01A-0309	3/23	1230	2	F	U		S	6	✓	✓		0903310
YS06-GW01-0309		1205	1					2		✓		USE FOR MS/MSD -01
YS06-GW01P-0309		1210	↓					2		✓		-02
YS06-EB01-032309		1335	4					2		✓		-03
YS06-EB02-032309	↓	1330	4	↓	↓			2		✓		-04
												-05

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date: 3/24/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1430	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 3/25/09	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time: 09:00	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

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9/30

S 12877

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: Janice Shilling	Phone: (919) 379-4100 X4089
Report style: level IV	Address: 621 Mainstream Drive Suite 220 Nashville, TN 37228	Fax: (919) 379-4050
Disk requirement: EDD (NEDD)	Phone: (615) 345-1115 x252	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC?

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4 Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL. §330+ PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3) 0903325
YS06-GW02-0309	3/24	1030	2	F	U		S	2		✓		-01
YS06-EB01-032409		1215	4					1*		✓	-02	*low volume/ do 500ml extracti
YS06-EB02-032409		1220	4					2		✓		-03
YS06-GW11-0309		0940	2					2		✓		-04
YS06-GW10-0309		1335	2					1*		✓	-05	*low volume/ do 500ml extracti
YS06-GW10A-0309	↓	1515	2	↓	↓		↓	2		✓		-06

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Diane Byrd	Date: 3/25/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1635	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 3/26/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

09.00

Revision 0 2-10-99

Commine SDG # S 12742

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: LTO-166 NWSY SITE 6	Samples shipped to: EMPIRICAL	CompuChem point-of-contact: (4) CATHY DOVER
TAT: 20 calendar days	Contact: JANICE SCHILLING	Phone: (919) 379-4100 X 4089
Report style: Level IV	Address: 621 MAINSTREAM DRIVE SUITE 270 NASHVILLE TN 37228	Fax: (919) 379- 4050
Disk requirement: SNEDD	Phone: (615) 345 1115 X 256	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC? _____

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other _____

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other _____, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL, 8330+TNT+ 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-EB01-032509	3/25	1415	4	F	U		S	2		✓	0903141-12	0903339-01
YS06-EB02-032509	"	1620	4	"	"		"	2		✓	-13	-02
YS06-GW03-032509	"	1040	2	"	"		"	2		✓	-14	-03
YS06-GW09-032509	"	1145	2	"	"		"	2		✓	-15	-04
YS06-GW09A-032509	↓	1515	2	↓	↓		↓	2		✓	↓ -16	-05
								14			3/26/09	

Clients Special Instructions:

Temperature _____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date: 3/26/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1520	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 3/27/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 10:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

8756

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903310 Number of Coolers: 1 of 2

Client: Compuchem Project: CTO - 166

Date/Time Received: 3-25-09 1000 Date cooler(s) opened: 3-25-09

Opened By (print): E. J. Overby (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8137

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3-24-09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 5.1°C

Dates samples were logged-in: 3-25-09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 2

Client: Compuchem Project: CTO - 166

Date/Time Received: 3-25-09 1000 Date cooler(s) opened: 3-25-09

Opened By (print): E.J. Overby (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx (UPS) DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8945

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3-24-09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A

4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A

5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A

6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A

7. Was project identifiable from custody papers? ..... (Yes) No N/A

8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 4.7°C

Dates samples were logged-in: 3-25-09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A

11. Did all bottles arrive unbroken? ..... Yes No N/A

12. Was all required bottle label information complete? ..... Yes No N/A

13. Did all bottle labels agree with custody papers? ..... Yes No N/A

14. Were correct containers used for the analyses indicated? ..... Yes No N/A

15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A

16. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A

17. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 2

Client: Conpuchem Project: CTO-166

Date/Time Received: 03/26/09 10:00 Date cooler(s) opened: 03/26/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 1501

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/25/09 Seal Initials: DB

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 1.5°C

Dates samples were logged-in: 03/26/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 2

Client: Conpuchem Project: CTO-166

Date/Time Received: 03/26/09 10:00 Date cooler(s) opened: 03/26/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 3098

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/25/09 Seal Initials: DB

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.5°C

Dates samples were logged-in: 03/26/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
17. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903339 Number of Coolers: 1 of 1

Client: Compuchem Project: CTO-166

Date/Time Received: 03/27/09 09:00 WS 10:00 Date cooler(s) opened: 03/27/09

Opened By (print): WILLIAM SCHWAB (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive? ~~FedEx~~ WS (UPS) DHL Hand Delivered
EL Courier — Other: _____

If applicable, enter airbill number here: 3343

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 3/26/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 4.1°C

Dates samples were logged-in: 03/27/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers? ..... WS	(Yes)	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\041V4101.D
Report Date: 27-Apr-2009 15:07

Empirical Laboratories, LLC

JLS 4.27.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 12:05
Lab File ID: 041V4101.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: 35 dna 1 09C0386 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	403	ϕ 231	0.010	-42.8	15.0	<- LOW D/KD

GW01A
GW01
GW01P
EB01-032309
EB02-032309

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\052V5201low.D
Report Date: 27-Apr-2009 15:07

JCB 4.27.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 17:12
Lab File ID: 052V5201low.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.56400	0.010	-8.4	15.0	
	2 RDX	148	142	0.010	-3.8	15.0	
$	32 1,2-Dinitrobenzene	202	189	0.010	-6.4	15.0	
	3 1,3,5-Trinitrobenzene	350	329	0.010	-6.1	15.0	
	4 1,3-Dinitrobenzene	485	452	0.010	-6.8	15.0	
	5 Tetryl	239	199	0.010	-16.9	15.0	<-low (<20%)
	6 Nitrobenzene	351	348	0.010	-0.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.99600	0.010	-11.6	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.64300	0.010	-6.6	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	316	0.010	-7.1	15.0	
	12 2,6-Dinitrotoluene	213	192	0.010	-9.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.54800	0.010	-10.3	15.0	
	14 2-Nitrotoluene	207	197	0.010	-5.0	15.0	
	15 4-Nitrotoluene	182	169	0.010	-7.5	15.0	
	16 3-Nitrotoluene	226	214	0.010	-5.4	15.0	

BM 042709

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\053V5301.D
Report Date: 27-Apr-2009 15:07

JLS 4.22.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 17:39
Lab File ID: 053V5301.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: 35 dna 1 09C0386 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	403	132	0.010	-67.2	15.0	<- low JLS 4.22.09

See prev. page for quals.

BS 04.27.09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\064V6401.D
Report Date: 27-Apr-2009 15:08

JLB 4-27-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 22:46
Lab File ID: 064V6401.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.39800	0.010	-9.2	15.0	
	2 RDX	148	143	0.010	-3.6	15.0	
$	32 1,2-Dinitrobenzene	202	187	0.010	-7.0	15.0	
	3 1,3,5-Trinitrobenzene	350	330	0.010	-5.8	15.0	
	4 1,3-Dinitrobenzene	485	449	0.010	-7.2	15.0	
	5 Tetryl	239	198	0.010	-17.0	15.0	<- LOW J/UJ
	6 Nitrobenzene	351	355	0.010	1.1	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.81100	0.010	-12.4	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.32100	0.010	-9.0	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	315	0.010	-7.6	15.0	
	12 2,6-Dinitrotoluene	213	194	0.010	-8.8	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.38200	0.010	-11.0	15.0	
	14 2-Nitrotoluene	207	196	0.010	-5.2	15.0	
	15 4-Nitrotoluene	182	168	0.010	-7.6	15.0	
	16 3-Nitrotoluene	226	214	0.010	-5.5	15.0	

See prev pages for assoc.

BM 042709

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\065V6501.D
Report Date: 27-Apr-2009 15:08

JLS 4.27.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 08-APR-2009 23:13
Lab File ID: 065V6501.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: 35 dna 1 09C0386 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040709.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	403	101	0.010	-75.0	15.0	<-LOW

JLS

GW01A
GW01
GW01P
EB01 032309
QB02 032309

DS 04.27.09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\010V1001low.D
Report Date: 30-Apr-2009 10:42

JLS 4-30-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 09-APR-2009 19:32
Lab File ID: 010V1001low.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl ccv 1000ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\8330CH2.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.53800	0.010	-8.5	15.0	
	2 RDX	148	143	0.010	-3.4	15.0	
$	32 1,2-Dinitrobenzene	202	192	0.010	-4.9	15.0	
	3 1,3,5-Trinitrobenzene	350	340	0.010	-3.1	15.0	
	4 1,3-Dinitrobenzene	485	456	0.010	-5.8	15.0	
	5 Tetryl	239	198	0.010	-17.2	15.0	<LOQ NQ
	6 Nitrobenzene	351	378	0.010	7.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.96500	0.010	-11.7	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.18900	0.010	-9.9	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.6	15.0	
	12 2,6-Dinitrotoluene	213	194	0.010	-8.9	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.35700	0.010	-11.1	15.0	
	14 2-Nitrotoluene	207	199	0.010	-4.1	15.0	
	15 4-Nitrotoluene	182	170	0.010	-6.6	15.0	
	16 3-Nitrotoluene	226	216	0.010	-4.6	15.0	

ONLY USED FOR 1,2-DNB

BM 043009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\022V2201.D
Report Date: 30-Apr-2009 10:42

JLG 4.30-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 10-APR-2009 01:06
Lab File ID: 022V2201.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.53100	0.010	-8.6	15.0	
	2 RDX	148	145	0.010	-1.7	15.0	
$	30 1,2-Dinitrobenzene	202	ϕ 194	0.010	-3.9	15.0	
	3 1,3,5-Trinitrobenzene	350	312	0.010	-10.8	15.0	
	4 1,3-Dinitrobenzene	485	505	0.010	4.2	15.0	
	5 Tetryl	239	101	0.010	-57.6	15.0	<-LOQ NQ
	6 Nitrobenzene	351	373	0.010	6.2	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	19.03000	0.010	-11.4	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.57200	0.010	-7.1	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	320	0.010	-6.2	15.0	
	12 2,6-Dinitrotoluene	213	194	0.010	-8.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.39200	0.010	-11.0	15.0	
	14 2-Nitrotoluene	207	201	0.010	-3.0	15.0	
	15 4-Nitrotoluene	182	173	0.010	-5.2	15.0	
	16 3-Nitrotoluene	226	219	0.010	-2.9	15.0	

ONLY USED FOR 1,2-DNB

BM 04/30/09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\034V3401.D
Report Date: 30-Apr-2009 10:42

JLG 4.30.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 10-APR-2009 06:40
Lab File ID: 034V3401.D Init. Cal. Date(s): 09-JAN-2008 20-FEB-2009
Analysis Type: Init. Cal. Times: 17:56 21:11
Lab Sample ID: expl 1 09D00336 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\040909A.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.60400	0.010	-8.2	15.0	
	2 RDX	148	145	0.010	-2.2	15.0	
$	30 1,2-Dinitrobenzene	202	Φ198	0.010	-1.9	15.0	
	3 1,3,5-Trinitrobenzene	350	230	0.010	-34.3	15.0	<- LOW NQ
	4 1,3-Dinitrobenzene	485	523	0.010	7.9	15.0	
	5 Tetryl	239	++++	0.010	++++	15.0	<- NOT THERE
	6 Nitrobenzene	351	328	0.010	-6.4	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.83200	0.010	-12.3	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	13.65700	0.010	0.9	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.5	15.0	
	12 2,6-Dinitrotoluene	213	195	0.010	-8.3	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.39200	0.010	-11.0	15.0	
	14 2-Nitrotoluene	207	201	0.010	-2.8	15.0	
	15 4-Nitrotoluene	182	171	0.010	-6.0	15.0	
	16 3-Nitrotoluene	226	217	0.010	-3.9	15.0	

ONLY USED FOR 1,2-DNB

RM 043009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041109.b\017V1701.D
Report Date: 14-Apr-2009 06:45

Ans 4-14-09
JLS 4-14-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 12-APR-2009 00:16
Lab File ID: 017V1701.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0192 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041109.b\8330CH2.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	19.93300	0.010	-1.6	15.0	
	2 RDX	148	151	0.010	2.1	15.0	
$	32 1,2-Dinitrobenzene	202	199	0.010	-1.1	15.0	
	3 1,3,5-Trinitrobenzene	350	348	0.010	-0.6	15.0	
	4 1,3-Dinitrobenzene	485	482	0.010	-0.6	15.0	
	5 Tetryl	239	199	0.010	-16.7	15.0	<-
	6 Nitrobenzene	351	379	0.010	8.1	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	20.07100	0.010	-6.6	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	13.12700	0.010	-3.0	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	334	0.010	-1.9	15.0	
	12 2,6-Dinitrotoluene	213	206	0.010	-3.1	15.0	
	13 2,4-Dinitrotoluene	25.15066	23.68600	0.010	-5.8	15.0	
	14 2-Nitrotoluene	207	211	0.010	1.8	15.0	
	15 4-Nitrotoluene	182	180	0.010	-1.4	15.0	
	16 3-Nitrotoluene	226	229	0.010	1.3	15.0	

GW02-0309
8301-032409
8302-032409
GW11-0309
GW10
GW10A

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\037V3701.D
Report Date: 16-Apr-2009 13:19

JLS 4.16.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

J.H. 4.22.09

Instrument ID: hplc2.i Injection Date: 15-APR-2009 07:22
Lab File ID: 037V3701.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.72700	0.010	-7.6	15.0	
	2 RDX	148	147	0.010	-0.7	15.0	
$	30 1,2-Dinitrobenzene	202	197	0.010	-2.2	15.0	
	3 1,3,5-Trinitrobenzene	350	350	0.010	-0.1	15.0	
	4 1,3-Dinitrobenzene	485	466	0.010	-3.7	15.0	
	5 Tetryl	239	191	0.010	-20.1	15.0	<-low JLJ
	6 Nitrobenzene	351	388	0.010	10.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.70500	0.010	-12.9	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	11.83800	0.010	-12.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.5	15.0	
	12 2,6-Dinitrotoluene	213	195	0.010	-8.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.07300	0.010	-12.2	15.0	
	14 2-Nitrotoluene	207	205	0.010	-1.2	15.0	
	15 4-Nitrotoluene	182	176	0.010	-3.6	15.0	
	16 3-Nitrotoluene	226	222	0.010	-1.7	15.0	

Ave.: 6.9% x

~~See prev.~~

YS06 - EB01 - 032509
EB02 - 032509
GW03
GW09
GW09A

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\038V3801.D
Report Date: 16-Apr-2009 13:19

Empirical Laboratories, LLC

JLS 4-16-09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 07:50
Lab File ID: 038V3801.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	x ϕ 558	0.010	36.4	15.0	<-HIGH J+

GW09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\050V5001.D
Report Date: 16-Apr-2009 14:59

Empirical Laboratories, LLC

JLB 4.16.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 13:24
Lab File ID: 050V5001.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	X ϕ558	0.010	36.5	15.0	<-HIGH J+

GW09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\001V0102.D
Report Date: 26-Apr-2009 16:27

JLS 4.26.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 23-APR-2009 11:19
Lab File ID: 001V0102.D Init. Cal. Date(s): 29-NOV-2004 12-MAR-2009
Analysis Type: Init. Cal. Times: 16:41 05:41
Lab Sample ID: mix#4 1/5ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\8332C.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
$ 29 1,2-Dinitrobenzene	384	456	0.010	18.9	15.0	<-HIGH NQ
8 Nitroglycerin	9.72121	10.56920	0.010	8.7	15.0	
17 PETN	180	Δ 195	0.010	8.2	15.0	

<20%

lal 4/27/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\116V1601.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 00:52
Lab File ID: 116V1601.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.96000	0.010	4.6	15.0	
	2 RDX	275	290	0.010	5.4	15.0	
	4 3,5-Dinitroaniline	1000	1024	0.010	-2.4	15.0	
	5 Nitrobenzene	258	251	0.010	-2.6	15.0	
	6 4-Amino-2,6-dinitrotolune	359	285	0.010	-20.7	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.11000	0.010	-0.5	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.20500	0.010	-13.6	15.0	
	10 2-Nitrotoluene	367	349	0.010	-4.9	15.0	
	12 3-NT/4-NT	242	234	0.010	-3.4	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	974	0.010	2.6	15.0	
	14 2,6-Dinitrotoluene	1000	969	0.010	3.1	15.0	
	15 1,3,5-Trinitrobenzene	1000	917	0.010	8.3	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.59800	0.010	-5.6	15.0	
	17 Tetryl	1000	940	0.010	6.0	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.20600	0.010	-15.2	15.0	<- NQ

4/24/09

WL
4/27/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\129V2901.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 08:55
Lab File ID: 129V2901.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.24700	0.010	2.3	15.0	
	2 RDX	275	272	0.010	-0.8	15.0	
	4 3,5-Dinitroaniline	1000	1019	0.010	-1.9	15.0	
	5 Nitrobenzene	258	249	0.010	-3.5	15.0	
	6 4-Amino-2,6-dinitrotolune	359	282	0.010	-21.4	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.01100	0.010	-1.2	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.27900	0.010	-12.7	15.0	
	10 2-Nitrotoluene	367	362	0.010	-1.4	15.0	
	12 3-NT/4-NT	242	239	0.010	-1.2	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	989	0.010	1.1	15.0	
	14 2,6-Dinitrotoluene	1000	1010	0.010	-1.0	15.0	
	15 1,3,5-Trinitrobenzene	1000	969	0.010	3.1	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.95600	0.010	-0.5	15.0	
	17 Tetryl	1000	998	0.010	0.2	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.23500	0.010	-14.7	15.0	

WL
4/27/09

FORM 4
EXPL METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

EW1BLK0326

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: EW1BLK0326 Lab File ID: 042V4201LOW

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc/Soxh) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 03/26/09

Date Analyzed (1): 04/08/09 Date Analyzed (2): 04/23/09

Time Analyzed (1): 1233 Time Analyzed (2): 1726

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column (1): ULTRA C-18 ID: 4.60(mm) Column (2): PINNACLE2 BIPHENYL ID: 4.60(m

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EW1BLK0326LC	EW1BLK0326LCS	04/08/09	
02	YS06-GW01A-0	0903310-01	04/08/09	04/23/09
03	YS06-GW01A-0	0903310-01MS	04/08/09	
04	YS06-GW01A-0	0903310-01MSD	04/08/09	
05	YS06-GW01-03	0903310-02	04/08/09	04/23/09
06	YS06-GW01P-0	0903310-03	04/08/09	04/23/09
07	YS06-EB01-03	0903310-04	04/08/09	04/23/09
08	YS06-EB02-03	0903310-05	04/08/09	04/23/09
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

1,3,5-TNT
~~3/5~~ 3,5-DNA run on C-18
4/9/09
4/10/09
NA
NA
Microbiology

COMMENTS: 0.11J/0.55

page 1 of 1

FORM IV EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EW1BLK0326

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: EW1BLK0326

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 042V4201LOW

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/26/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/08/09 12:33

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.11	JP
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

FORM 4
EXPL METHOD BLANK SUMMARY

CLIENT SAMPLE NO.

EW1BLK0327

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: EW1BLK0327 Lab File ID: 005V0501

Matrix (soil/water) WATER Extraction: (SepF/Cont/Sonc/Soxh) SEPF

Sulfur Cleanup (Y/N) N Date Extracted: 03/27/09

Date Analyzed (1): 04/11/09 Date Analyzed (2): 04/23/09

Time Analyzed (1): 1842 Time Analyzed (2): 2109

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column (1): ULTRA C-18 ID: 4.60(mm) Column (2): PINNACLE2 BIPHENYL ID: 4.60(m

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	EW1BLK0327LC	EW1BLK0327LCS	04/11/09	
02	EW1BLK0327LC	EW1BLK0327LCSD	04/11/09	
03	EW1BLK0327LC	EW1BLK0327LCSN	04/11/09	
04	EW1BLK0327LC	EW1BLK0327LCSD	04/11/09	
05	YS06-GW02-03	0903325-01	04/11/09	04/23/09
06	YS06-EB01-03	0903325-02	04/11/09	04/23/09
07	YS06-EB02-03	0903325-03	04/11/09	04/23/09
08	YS06-GW11-03	0903325-04	04/11/09	04/23/09
09	YS06-GW10-03	0903325-05	04/11/09	04/24/09
10	YS06-GW10A-0	0903325-06	04/11/09	04/24/09
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

1,3,5-TNT

B

B

B

COMMENTS: 0.11J / 0.55

FORM IV EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

EW1BLK0327

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix: (soil/water) WATER Lab Sample ID: EW1BLK0327

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 005V0501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: _____

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/27/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/11/09 18:42

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.050	1.0		U
121-82-4	RDX	0.050	1.0		U
98-95-3	Nitrobenzene	0.050	1.0		U
99-65-0	1,3-Dinitrobenzene	0.050	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.050	1.0	0.11	J
121-14-2	2,4-Dinitrotoluene	0.050	1.0		U
606-20-2	2,6-Dinitrotoluene	0.050	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.050	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.050	1.0		U
479-45-8	Tetryl	0.050	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.050	1.0		U
88-72-2	2-Nitrotoluene	0.050	1.0		U
99-99-0	4-Nitrotoluene	0.050	1.0		U
99-08-1	3-Nitrotoluene	0.050	1.0		U
618-87-1	3,5-Dinitroaniline	0.050	1.0		U

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT	
01	EW1BLK0326	101	85					0	
02	EW1BLK0326LC	92						0	
03	YS06-GW01A-0	96	81					0	
04	YS06-GW01A-0	95						0	
05	YS06-GW01A-0	93						0	
06	YS06-GW01-03	95	85					0	
07	YS06-GW01P-0	88	93					0	
08	YS06-EB01-03	105	93					0	
09	YS06-EB02-03	102	79					0	
10	EW1BLK0327	106	88					0	
11	EW1BLK0327LC	96						0	
12	EW1BLK0327LC	97						0	
13	EW1BLK0327LC							0	
14	EW1BLK0327LC							0	
15	YS06-GW02-03	97	82					0	
16	YS06-EB01-03	102	82					0	
17	YS06-EB02-03	96	79					0	
18	YS06-GW11-03	97	79					0	
19	YS06-GW10-03	93	111					0	
20	YS06-GW10A-0	111	86					0	
21	EW1BLK0331	106	92					0	
22	EW1BLK0331LC	102						0	
23	EW1BLK0331LC	104						0	
24	EW1BLK0331LC							0	
25	EW1BLK0331LC							0	
26	YS06-EB01-03	120	104					0	
27	YS06-EB02-03	121	90					0	
28	YS06-GW03-03	117	91					0	
29	YS06-GW09-03	749*	311*					2	K+
30	YS06-GW09A-0	127	81					0	

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER EXPL SURROGATE RECOVERY

PETN

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Column(1): ULTRA C-18 ID: 4.60 (mm) Column (2): Pinnacle 2 m 4/29/09

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	EW1BLK0326	102						0
02	EW1BLK0326LC	115						0
03	YS06-GW01A-0	100						0
04	YS06-GW01A-0	91						0
05	YS06-GW01A-0	103						0
06	YS06-GW01-03	98						0
07	YS06-GW01P-0	98						0
08	YS06-EB01-03	99						0
09	YS06-EB02-03	95						0
10	EW1BLK0327	107	88					0
11	EW1BLK0327LC	92						0
12	EW1BLK0327LC	102						0
13	YS06-GW02-03	100						0
14	YS06-EB01-03	102						0
15	YS06-EB02-03	98						0
16	YS06-GW11-03	99						0
17	YS06-GW10-03	100						0
18	YS06-GW10A-0	104						0
19	EW1BLK0331	106						0
20	EW1BLK0331LC	108						0
21	EW1BLK0331LC	96						0
22	YS06-EB01-03	110	104					0
23	YS06-EB02-03	100	90					0
24	YS06-GW03-03	97						0
25	YS06-GW09-03	437*						1 K+
26	YS06-GW09A-0	95						0
27								
28								
29								
30								

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.
HMX	10.00	0.0000	7.946	79*	80-115
RDX	10.00	0.0000	8.884	89	50-160
Nitrobenzene	10.00	0.0000	7.924	79	50-140
1,3-Dinitrobenzene	10.00	0.0000	8.711	87	45-160
1,3,5-Trinitrobenzene	10.00	0.0000	5.478	55*	65-140
2,4-Dinitrotoluene	10.00	0.0000	7.829	78	60-135
2,6-Dinitrotoluene	10.00	0.0000	8.199	82	60-135
2,4,6-Trinitrotoluene	10.00	0.0000	7.041	70	50-145
2-Amino-4,6-dinitrotolu	10.00	0.0000	8.228	82	50-155
Tetryl	10.00	0.0000	0.0000	0*	20-175
4-Amino-2,6-dinitrotolu	10.00	0.0000	8.745	87	55-155
2-Nitrotoluene	10.00	0.0000	8.322	83	45-135
4-Nitrotoluene	10.00	0.0000	8.263	83	50-130
3-Nitrotoluene	10.00	0.0000	8.464	85	50-130

No Quals - LCSD all OK

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	8.918	89	10	30	80-115
RDX	10.00	10.11	101	12	30	50-160
Nitrobenzene	10.00	10.60	106	29	30	50-140
1,3-Dinitrobenzene	10.00	9.708	97	11	30	45-160
1,3,5-Trinitrobenzene	10.00	9.580	96	41*	30	65-140
2,4-Dinitrotoluene	10.00	8.907	89	13	30	60-135
2,6-Dinitrotoluene	10.00	9.249	92	12	30	60-135
2,4,6-Trinitrotoluene	10.00	8.435	84	18	30	50-145
2-Amino-4,6-dinitrotolu	10.00	9.319	93	12	30	50-155
Tetryl	10.00	6.165	62	N/A	30	20-175
4-Amino-2,6-dinitrotolu	10.00	8.700	87	0	30	55-155
2-Nitrotoluene	10.00	8.969	90	7	30	45-135
4-Nitrotoluene	10.00	9.058	90	9	30	50-130
3-Nitrotoluene	10.00	9.230	92	7	30	50-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 14 outside limits
Spike Recovery: 3 out of 28 outside limits

COMMENTS: _____

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW01-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-02 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.45	3.17	3.73	0.2444	
	2	2.78	2.49	3.11	0.2876	16.2
RDX	1	5.33	4.95	5.67	0.8831	
	2	3.27	3.09	3.51	0.8146	8.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW01P-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-03 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.45	3.17	3.73	0.3801	
	2	2.79	2.49	3.11	0.6480	52.1
RDX	1	5.33	4.95	5.67	1.349	
	2	3.28	3.09	3.51	1.339	0.7
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-04 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.38	4.95	5.67	0.08554	
	2	3.28	3.09	3.51	0.6266	152.0
1,3,5-Trinitrobenzene	1	7.47	6.77	7.61	0.6175	
	2	15.98	15.86	17.16	0.4459	32.3
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903310-05 Date(s) Analyzed: 04/08/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.47	6.77	7.61	0.4618	
	2	15.90	15.86	17.16	0.1182	118.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW02-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-01 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.45	4.97	5.69	0.08082	
	2	3.12	3.09	3.51	0.09884	20.1
1,3,5-Trinitrobenzene	1	7.52	6.80	7.64	0.06921	
	2	16.05	15.86	17.16	0.2828	121.4
2,4,6-Trinitrotoluene	1	10.97	10.66	11.92	0.06957	
	2	22.44	21.81	24.01	0.2742	119.0
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-02 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.49	6.80	7.64	0.4262	
	2	16.26	15.86	17.16	0.4281	0.4
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-03 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.51	6.80	7.64	0.3866	
	2	16.24	15.86	17.16	0.2196	55.1
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW11-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-04 Date(s) Analyzed: 04/11/09 04/23/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.62	4.97	5.69	3.871	
	2	3.21	3.09	3.51	0.5559	149.8
1,3,5-Trinitrobenzene	1	7.50	6.80	7.64	0.05651	
	2	16.29	15.86	17.16	0.5083	160.0
2-Nitrotoluene	1	15.40	14.66	15.98	0.05163	
	2	10.88	10.45	11.19	0.1256	83.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW10-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-05 Date(s) Analyzed: 04/11/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.37	4.97	5.69	0.4240	
	2	3.28	3.09	3.51	0.1016	122.7
1,3,5-Trinitrobenzene	1	7.25	6.80	7.64	8.880	
	2	16.53	15.86	17.16	10.34	15.2
2,4,6-Trinitrotoluene	1	11.32	10.66	11.92	1.289	
	2	22.94	21.81	24.01	1.442	11.2
2-Amino-4,6-dinitrotoluen	1	12.27	11.48	13.00	0.7054	
	2	8.02	7.31	8.13	2.916	122.1
3,5-Dinitroaniline	1	9.54	9.03	10.03	0.5924	
	2	5.93	5.42	6.42	0.5927	0.0
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW10A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903325-06 Date(s) Analyzed: 04/11/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.49	6.80	7.64	0.06356	
	2	16.49	15.86	17.16	0.09323	37.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-01 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.19	3.75	0.1572	
	2	2.79	2.49	3.11	0.2616	49.8
RDX	1	5.24	5.02	5.74	0.1528	
	2	3.26	3.09	3.51	0.8020	136.0
1,3,5-Trinitrobenzene	1	7.57	6.87	7.71	0.9791	
	2	16.71	15.86	17.16	0.1697	140.9
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032509

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-02 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.19	3.75	0.1769	
	2	2.79	2.49	3.11	0.1438	20.6
RDX	1	5.49	5.02	5.74	0.1482	
	2	3.19	3.09	3.51	0.1535	3.5
1,3,5-Trinitrobenzene	1	7.56	6.87	7.71	0.6042	
	2	16.47	15.86	17.16	0.3060	65.5
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW03-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-03 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.56	6.87	7.71	0.1202	
	2	16.33	15.86	17.16	0.1647	31.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW09-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-04 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.19	3.75	4.120	
	2	2.80	2.49	3.11	3.725	10.1
RDX	1	5.35	5.02	5.74	69.86	
	2	3.30	3.09	3.51	43.66	46.2
1,3-Dinitrobenzene	1	8.67	8.18	9.18	17.99	
	2	10.31	10.03	10.71	15.78	13.1
2,4-Dinitrotoluene	1	13.34	12.69	13.97	50.74	
	2	17.82	17.43	18.59	39.92	23.9
2-Amino-4,6-dinitrotoluen	1	12.37	11.61	13.13	4.954	
	2	7.91	7.31	8.13	6.885	32.6
3,5-Dinitroaniline	1	9.60	9.07	10.07	1.421	
	2	5.89	5.42	6.42	0.7776	58.5
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW09A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG001

Lab Sample ID: 0903339-05 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.46	5.02	5.74	0.1322	
	2	3.15	3.09	3.51	0.09298	34.8
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

DataQual

Environmental Services, LLC

CH2M HILL
5700 Cleveland Street
Suite 101
Virginia Beach, Virginia 23462

June 11, 2009
SDG # SDG002, Empirical Laboratories
NWS Yorktown, CTO-166

Dear Ms. Shaw,

The following Data Validation report is provided as requested for the parameter noted in the table below for SDG #s SDG002. The data validation was performed in accordance with the SW-846 8330 for explosives, PETN and 3,5-dinitroaniline. Also used in the validation of these samples were the Region III Modifications to the National Functional Guidelines for Organic Data Review, 9/94, (as referred by the Region III document Innovative Approaches to Data Validation, 6/95, for Level M3/IM-2 review), as applicable. Specific information regarding reporting limits, method detection limits, and quality control requirements and limits were taken from the QAPP for the site.

Sample ID	Lab ID	Matrix	EXP
YS06-EB01-032609	0903355-04	water	X
YS06-EB01-033109	0904043-03	water	X
YS06-EB01-040109	0904043-10	water	X
YS06-EB01-040209	0904058-03	water	X
YS06-EB01-040309	0904058-05	water	X
YS06-EB02-032609	0903354-04	water	X
YS06-EB02-040109	0904043-11	water	X
YS06-FB01-032609	0903354-01	water	X
YS06-FB01-040109	0904043-09	water	X
YS06-GW04-0309	0904043-02	water	X
YS06-GW06-0309	0903354-02	water	X
YS06-GW06A-0309	0903354-03	water	X
YS06-GW08-0309	0904043-01	water	X
YS06-GW09B-0409	0904058-04	water	X
YS06-GW12-0409	0904058-01	water	X
YS06-GW12A-0409	0904043-08	water	X
YS06-GW12P-0409	0904058-02	water	X
YS06-GW13-0409	0904043-06	water	X
YS06-GW13A-0409	0904043-07	water	X
YS06-GW14-0309	0904043-04	water	X
YS06-GW15-0309	0904043-05	water	X
YS06-GW07-0309	0903355-01	water	X
YS06-GW05B-0309	0903355-02	water	X
YS06-GW05BP-0309	0903355-03	water	X
YS06-GW12-0409MS	0904058-01MS	water	X
YS06-GW12-0409MSD	0904058-01MSD	water	X

The following quality control samples were provided with this SDG: samples YS06-EB01-032609, YS06-EB01-033109, YS06-EB01-040109, YS06-EB01-040209, YS06-

EB01-040309, YS06-EB02-032609, and YS06-EB02-040109-equipment blanks; samples YS06-FB01-032609 and YS06-FB01-040109-field blanks; sample YS06-GW12P-0409-field duplicate of sample YS06-GW12-0409; and sample YS06-GW05BP-0309-field duplicate of sample YS06-GW05B-0309.

All areas of concern are discussed in the body of the report and a summary of data qualification is provided. The samples were evaluated based on the following criteria:

- Data Completeness *
- Technical Holding Times *
- Sample Condition *
- HPLC Performance *
- Initial/Continuing Calibrations
- Blanks
- Surrogates
- Laboratory Control Samples
- Matrix Spike Recoveries *
- Matrix Duplicate RPDs *
- Field Duplicates
- Identification/Quantitation
- Reporting Limits *

*- indicates that no qualifications were required based on this criteria

Overall Evaluation of Data/Potential Usability Issues

A summary of qualifications applied to the sample results are noted below for the fractions validated. Specific details regarding qualification of the data are addressed in the Specific Evaluation section of this narrative. If an issue is not addressed there were no actions required based on unmet quality criteria. When more than one qualifier is associated with a compound/analyte the validator has chosen the qualifier that best indicates possible bias in the results and flagged the data accordingly. However, information regarding all quality control issues is provided in the body of the report and on the qualification summary page. Please note that when a compound or analyte is flagged due to blank contamination the BL qualifier code takes precedence over all other qualifier codes except a code that explains rejected data.

Major Problems

No issues requiring the rejection of analytical data were noted in this data package.

Minor Problems

Issues requiring qualification of the analytical data were found in the validation of this SDG. A summary of these issues for each fraction is presented in the following

paragraphs. All results qualified as estimated J/UJ or biased high, K or biased low, L/UL, should be considered usable but estimated.

Explosives by 8330

The continuing calibrations exhibited some compounds with high %D values, which resulted in qualifying values as estimated.

Blank contamination was noted in the method and QC blanks associated with samples in this batch. Qualifications were added to the data.

One of the samples exhibited high surrogate recoveries and two samples exhibited low surrogate recoveries. Results in the samples were qualified.

The LCS pair exhibited low recoveries for one compound; therefore, the compound was qualified in the associated samples.

One sample required a dilution to obtain results within the calibration range.

One reported non-detect result in sample YS06-GW05BP-0309 was reported as presumptively present at an estimated concentration, NJ, based on review of the chromatogram.

One of the field duplicate pairs exhibited one compound with a non-compliant RPD. The results for this compound were qualified as estimated in the field duplicate pair.

All P flagged results were qualified as estimated.

Specific Evaluation of Data

Data Completeness

The SDG was received complete and intact. Resubmissions were not required. Clarification and a corrected narrative were required from the laboratory regarding sample receipt. A copy of the e-mail correspondence is included in the validation narrative.

Technical Holding Times

According to chain of custody records, sampling was performed on 3/26-4/3 and samples were received at the sub-contracting laboratory 3/28 and 4/3. All sample preparation and analysis was performed within Region III and/or method holding time requirements.

Initial/Continuing Calibration

Explosives

Calibration standards exhibited %Ds that were non-compliant. A summary of these non-compliances and affected samples are noted in the following table. Sample results are qualified as indicated.

Standard ID	Compound(s)	%D	Samples	Q Flag	Q Code
4/15/09, 2045	tetryl	-16.8	YS06-FB01-032609, YS06-EB02-032609, YS06-GW06-0309, YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-EB01-032609	J/UJ	CCL
4/16/09, 2144	tetryl	-19.6			
4/17/09, 0346	tetryl	-29.5			
4/24/09, 1935	PETN	18	YS06-GW13A-0409	J	CCH

Blanks

Explosives

The associated method and/or QC blanks exhibited contamination as noted in the following table. Compounds for which there was no action required, are not included in the following table.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
YS06-FB01-032609	1,3,5-trinitrobenzene	0.34JPM ug/L	1.7 ug/L	B	BL
YS06-EB01-032609	HMX	0.22J ug/L	1.1 ug/L	B	BL
YS06-FB01-040109	1,3,5-trinitrobenzene	0.15JPM ug/L	0.75 ug/L	B	BL
	RDX	0.13JP ug/L	0.65 ug/L	B	BL
YS06-EB02-040109	RDX	0.52JP ug/L	2.6 ug/L	B	BL
YS06-EB01-040309	1,3,5-trinitrobenzene	0.22JPM ug/L	1.1 ug/L	B	BL

Qualifications required in the field samples are noted in the following table.

Sample ID	Compound	Q Flag	Q Code
YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW12-0409, YS06-GW09B-0409	1,3,5-trinitrobenzene	B	BL
YS06-GW07-0309	HMX	B	BL
YS06-GW13A-0409	RDX	B	BL

Surrogates

Explosives

Sample YS06-GW06-0309 exhibited low recoveries for 1,2-dinitrobenzene (15/11/14); therefore all results in the sample were qualified as biased low (L/UL), qualifier code: SSL.

Sample YS06-GW13-0409 exhibited low recoveries for 1,2-dinitrobenzene (46/0); therefore all results in the sample were qualified as biased low (L/UL), qualifier code: SSL.

Sample YS06-GW04-0309 exhibited high recoveries for 1,2-dinitrobenzene (316/47650); therefore all positive results in the sample were qualified as biased high (K), qualifier code: SSH.

Laboratory Control Sample

Explosives

The LCS pair submitted exhibited low recoveries for 1,3,5-trinitrobenzene (55% & 41%); therefore the positive and non-detect results for the compound were qualified as biased low, L/UL with a qualifier code of BSL.

Field Duplicates

Explosives

One of the field duplicate pairs submitted in this SDG exhibited a non-compliant RPD for one compound. Specific action is noted in the following table.

FD Pair	Compound	Samples Affected	RPD	Q Flag	Q Code
YS06-GW05B-0309, YS06-GW05BP-0309	2,4-dintrotoluene	YS06-GW05B-0309, YS06-GW05BP-0309	42	J	FD

Identification/Quantitation

Explosives

A dilution was required for samples YS06-GW04-0309 to obtain results within the calibration range for one target compound. Therefore, E-flagged compound results were not used from the initial analysis in favor of the corresponding D-flagged compound in the dilution analysis, qualifier code: DL.

The compound 2,4-dinitrotoluene was not confirmed in sample YS06-GW05BP-0309. The compound was detected with good peak resolution within the RTW on the primary column in both the field sample and field duplicate. The peak was identified on the confirmation column in the field sample but was not in the field duplicate. Review of the chromatogram for the field duplicate sample indicated that there was a peak present that had been identified as tetryl. Review of the chromatograms of the associated standards indicated that the compounds tetryl and 2,4-dintrotoluene essentially co-eluted. Therefore, based on a review of the raw data the reported non-detect result for 2,4-dinitrotoluene in sample YS06-GW05BP-0309 is replaced with the quantitated result from the primary column (4.0 ug/L) and flagged as presumptively present at an estimated

concentration NJ with a qualifier code of OT. A copy of the raw data used to make this determination is included in the validation worksheets.

All compounds reported with a P flag to indicate column quantitation %Ds greater than 40% were qualified as estimated J with a qualifier code of 2C.

Reporting Limits

Explosives by 8330

Two of the target compounds did not meet the QAPP established method detection limits (MDLs) as noted on page 96 of the Phase II RI for Groundwater Sites 1, 3, and 6 LTM QAPP. Reporting limits (QAPP QLs) met criteria. No validation action was required.

Compound	QAPP MDL (ug/L)	Lab MDL (ug/L)
2-amino-4,6-dinitrotoluene	0.1	0.12
3-nitrotoluene	0.1	0.12

A summary of qualifications required is provided on the following page. Please do not hesitate to contact DataQual ES with any questions regarding this validation report.

Sincerely,

Jacqueline Cleveland

Jacqueline Cleveland
Vice-President

Summary of Data Qualifications

Explosives

Sample ID	Compound	Results	Q Flag	Q code
YS06-FB01-032609, YS06-EB02-032609, YS06-GW06-0309, YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-EB01-032609	tetryl	+/-	J/UJ	CCL
YS06-GW13A-0409	PETN	+	J	CCH
YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW12-0409, YS06-GW09B-0409	1,3,5-trinitrobenzene	+	B	BL
YS06-GW07-0309	HMX	+	B	BL
YS06-GW13A-0409	RDX	+	B	BL
YS06-GW06-0309, YS06-GW13-0409	all compounds	+/-	L/UL	SSL
YS06-GW04-0309	all compounds	+	K	SSH
all samples	1,3,5-trinitrobenzene	+/-	L/UL	BSL
YS06-GW05B-0309, YS06-GW05BP-0309	2,4-dinitrotoluene	+	J	FD
YS06-GW04-0309	2-amino-4,6-dinitrotoluene	+E	R	DL
YS06-GW05BP-0309	2,4-dinitrotoluene	-	4.0 NJ	OT
all samples	all compounds	+P	J	2C

Glossary of Qualification Flags and Abbreviations

Qualification Flags (Q-Flags)

U	not detected above the reported sample quantitation limit
J	estimated value
UJ	reported quantitation limit is qualified as estimated
R	result is rejected; the presence or absence of the analyte cannot be verified
D	result value is based on dilution analysis result
NJ	analyte has been tentatively identified, estimated value
L	analyte present, biased low
UL	not detected, quantitation limit is probably higher
K	analyte present, biased high
Q	estimated dioxin/furan concentration
I	interferences present which may cause the results to be biased high

Method Blank Qualification Flags (Q-Flags)

NA	The sample result for the blank contaminant is greater than the sample RL and is greater than 5X the blank value. The sample result for the blank contaminant is not qualified with any blank qualifiers.
B	The sample result for the blank contaminant is less than or greater than the sample RL and is less than 5X the blank value. The sample result for the blank contaminant is qualified as B at the compound value reported.
L/UL	The preparation blank or a majority of the lab blanks exhibited negative contamination. The reported results up to 10X the analyte IDL are flagged as biased low. (metals only)

General Abbreviations

IDL	Instrument Detection Limit
MDL	Method Detection Limit
RL	Reporting Limit
CRDL	Contract Required Detection Limit
CRQL	Contract Required Quantitation Limit
Q Code	Qualifier Code
Q Flag	Qualifier Flag
+	positive result
-	non-detect result

QUALIFIER CODE REFERENCE

Qualifier	Description
TN	Tune
BSL	Blank Spike/LCS - Low Recovery
BSH	Blank Spike/LCS - High Recovery
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BRL	Below Reporting Limit
EMPC	Estimated Possible Maximum Concentration
ISL	Internal Standard - Low Recovery
ISH	Internal Standard - High Recovery
MSL	Matrix Spike and/or Matrix Spike Duplicate - Low Recovery
MSH	Matrix Spike and/or Matrix Spike Duplicate - High Recovery
MI	Matrix interference obscuring the raw data
MDP	Matrix Spike/Matrix Spike Duplicate Precision
2S	Second Source - Bad reproducibility between tandem detectors
SSL	Spiked Surrogate - Low Recovery
SSH	Spiked Surrogate - High Recovery
SD	Serial Dilution Reproducibility
ICL	Initial Calibration - Low Relative Response Factors (RRF)
ICH	Initial Calibration - High Relative Response Factors (RRF)
ICB	Initial Calibration - Bad Linearity or Curve Function
CCL	Continuing Calibration - Low Recovery or %Difference
CCH	Continuing Calibration - High Recovery or %Difference
LD	Lab Duplicate Reproducibility
HT	Holding Time
PD	Pesticide Degradation
2C	Second Column - Poor Dual Column Reproducibility
LR	Concentration Exceeds Linear Range
BL	Blank Contamination- MBL, EBL, FBL, TBL
RE	Redundant Result - due to Re-analysis or Re-extraction
DL	Redundant Result - due to Dilution
FD	Field Duplicate
OT	Other - explained in data validation report
%Sol	High percent moisture

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 009V0901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 18:54

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.16	2.0		U
121-82-4	RDX	0.16	2.0		U
98-95-3	Nitrobenzene	0.18	2.0		U
99-65-0	1,3-Dinitrobenzene	0.16	2.0		U
99-35-4	1,3,5-Trinitrobenzene	0.16	2.0	0.34	~~JPM~~ L BS
121-14-2	2,4-Dinitrotoluene	0.21	2.0		U
606-20-2	2,6-Dinitrotoluene	0.21	2.0		U
118-96-7	2,4,6-Trinitrotoluene	0.16	2.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.24	2.0		U
479-45-8	Tetryl	0.16	2.0		~~U~~ 10 CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.16	2.0		U
88-72-2	2-Nitrotoluene	0.16	2.0		U
99-99-0	4-Nitrotoluene	0.16	2.0		U
99-08-1	3-Nitrotoluene	0.24	2.0		U
618-87-1	3,5-Dinitroaniline	0.16	2.0		U

5/1/09
JJC
6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 029V2901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 01:38

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.53	6.0		U

JRC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-02

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 010V1001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 19:22

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98		U
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

UL SSL

UL SSL

5.1.09 JAC 6809 JAC 61109

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-02

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 030V3001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 02:09

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U UL SSL

JAC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 011V1101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 19:50

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.076	0.95		U
121-82-4	RDX	0.076	0.95		U
98-95-3	Nitrobenzene	0.084	0.95		U
99-65-0	1,3-Dinitrobenzene	0.076	0.95		U
99-35-4	1,3,5-Trinitrobenzene	0.076	0.95	0.088	~~JP~~ B BL
121-14-2	2,4-Dinitrotoluene	0.099	0.95		U
606-20-2	2,6-Dinitrotoluene	0.099	0.95		U
118-96-7	2,4,6-Trinitrotoluene	0.076	0.95	0.30	~~JP~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.95	0.44	~~JP~~ J 2C
479-45-8	Tetryl	0.076	0.95		U Q UJ CC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.076	0.95		U
88-72-2	2-Nitrotoluene	0.076	0.95		U
99-99-0	4-Nitrotoluene	0.076	0.95		U
99-08-1	3-Nitrotoluene	0.11	0.95		U
618-87-1	3,5-Dinitroaniline	0.076	0.95		U

5.1.09

JC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW06A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-03

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 031V3101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 02:39

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
2-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-04

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 012V1201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/15/09 20:17

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.16	2.0	0.22	~~JPM~~ J 2C
121-82-4	RDX	0.16	2.0	0.21	~~JPM~~ J 2C
98-95-3	Nitrobenzene	0.18	2.0		U
99-65-0	1,3-Dinitrobenzene	0.16	2.0		U
99-35-4	1,3,5-Trinitrobenzene	0.16	2.0	0.31	~~JPM~~ L BSL
121-14-2	2,4-Dinitrotoluene	0.21	2.0		U
606-20-2	2,6-Dinitrotoluene	0.21	2.0		U
118-96-7	2,4,6-Trinitrotoluene	0.16	2.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.24	2.0		U
479-45-8	Tetryl	0.16	2.0		~~U~~ QUCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.16	2.0		U
88-72-2	2-Nitrotoluene	0.16	2.0		U
99-99-0	4-Nitrotoluene	0.16	2.0		U
99-08-1	3-Nitrotoluene	0.24	2.0		U
618-87-1	3,5-Dinitroaniline	0.16	2.0		U

m=5.109 JPC 4/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903354-04

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 033V3301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 03:40

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.53	6.0		U

JDC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 013V1301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/16/09 22:40

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.10	~~JPM~~B BL
121-82-4	RDX	0.080	1.0	0.32	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.36	~~JPM~~B BL
121-14-2	2,4-Dinitrotoluene	0.10	1.0	6.4	
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0	0.11	~~JP~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0	0.24	~~JP~~ J 2C
479-45-8	Tetryl	0.080	1.0		~~J~~ QU CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

5.1.09 DLC 0809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-01

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 034V3401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 10:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 04:10

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-02

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 014V1401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/16/09 23:08

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.076	0.95	7.2	
121-82-4	RDX	0.076	0.95	20	
98-95-3	Nitrobenzene	0.084	0.95		U
99-65-0	1,3-Dinitrobenzene	0.076	0.95	0.34	J
99-35-4	1,3,5-Trinitrobenzene	0.076	0.95	~~0.98~~	B BL
121-14-2	2,4-Dinitrotoluene	0.099	0.95	2.6	J FD
606-20-2	2,6-Dinitrotoluene	0.099	0.95		U
118-96-7	2,4,6-Trinitrotoluene	0.076	0.95	1.0	~~J~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.95	5.4	
479-45-8	Tetryl	0.076	0.95		R QW J 2C
19406-51-0	4-Amino-2,6-dinitrotoluene	0.076	0.95		U
88-72-2	2-Nitrotoluene	0.076	0.95		U
99-99-0	4-Nitrotoluene	0.076	0.95		U
99-08-1	3-Nitrotoluene	0.11	0.95		U
618-87-1	3,5-Dinitroaniline	0.076	0.95		U

5.1.09
6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-02

Sample wt/vol: 1050 (g/ml) ML Lab File ID: 035V3501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 04:40

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 4/30/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW0
5BP-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 015V1501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/16/09 23:35

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.94	8.3	
121-82-4	RDX	0.075	0.94	23	
98-95-3	Nitrobenzene	0.083	0.94		U
99-65-0	1,3-Dinitrobenzene	0.075	0.94	0.37	J
99-35-4	1,3,5-Trinitrobenzene	0.075	0.94	0.77	~~J~~ BBL
121-14-2	2,4-Dinitrotoluene	0.098	0.94	4.0	~~U~~ NJ QT
606-20-2	2,6-Dinitrotoluene	0.098	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.94	0.99	
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.94	5.4	
479-45-8	Tetryl	0.075	0.94		UQRJCA
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.94		U
88-72-2	2-Nitrotoluene	0.075	0.94		U
99-99-0	4-Nitrotoluene	0.075	0.94		U
99-08-1	3-Nitrotoluene	0.11	0.94		U
618-87-1	3,5-Dinitroaniline	0.075	0.94		U

5.1.09 JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW0
5BP-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 036V3601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 14:05

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 05:11

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

DAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-04

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 016V1601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/17/09 00:03

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.074	0.92	0.22	J
121-82-4	RDX	0.074	0.92		U
98-95-3	Nitrobenzene	0.081	0.92		U
99-65-0	1,3-Dinitrobenzene	0.074	0.92		U
99-35-4	1,3,5-Trinitrobenzene	0.074	0.92	0.23	~~JPM~~ L BSL
121-14-2	2,4-Dinitrotoluene	0.096	0.92		U
606-20-2	2,6-Dinitrotoluene	0.096	0.92		U
118-96-7	2,4,6-Trinitrotoluene	0.074	0.92		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.92		U
479-45-8	Tetryl	0.074	0.92		~~U~~ RLT CCL
19406-51-0	4-Amino-2,6-dinitrotoluene	0.074	0.92		U
88-72-2	2-Nitrotoluene	0.074	0.92		U
99-99-0	4-Nitrotoluene	0.074	0.92		U
99-08-1	3-Nitrotoluene	0.11	0.92		U
618-87-1	3,5-Dinitroaniline	0.074	0.92		U

5.1.09
6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0903355-04

Sample wt/vol: 1080 (g/ml) ML Lab File ID: 037V3701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/26/09 15:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:03/31/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 05:41

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.24	2.8		U

JPC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW08-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-01

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 076V7601

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 04:15

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98		U
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW08-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-01

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 041V4101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 12:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 07:42

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JWC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW04-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 077V7701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 04:42

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	1.6	K SSH
121-14-2	2,4-Dinitrotoluene	0.10	1.0	36	K SSH
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0	~~2900~~	~~EPM~~ R DL
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW04-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 042V4201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 08:12

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW0
4-0309DL

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-02DL

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 003V0301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 13:16

Injection Volume: 100.0(uL) Dilution Factor: 1000.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
35572-78-2	2-Amino-4,6-dinitrotoluene	120	1000	7400	D

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-033109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 004V0401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 13:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.94		U
121-82-4	RDX	0.075	0.94		U
98-95-3	Nitrobenzene	0.083	0.94		U
99-65-0	1,3-Dinitrobenzene	0.075	0.94		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.94		~~U~~ UL BSL
121-14-2	2,4-Dinitrotoluene	0.098	0.94		U
606-20-2	2,6-Dinitrotoluene	0.098	0.94		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.94	0.10	~~JP~~ J 2C
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.94		U
479-45-8	Tetryl	0.075	0.94		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.94		U
88-72-2	2-Nitrotoluene	0.075	0.94		U
99-99-0	4-Nitrotoluene	0.075	0.94		U
99-08-1	3-Nitrotoluene	0.11	0.94		U
618-87-1	3,5-Dinitroaniline	0.075	0.94		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-033109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-03

Sample wt/vol: 1060 (g/ml) ML Lab File ID: 043V4301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 08:43

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW14-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 005V0501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 14:12

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

1 uL BSC

JMC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW14-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-04

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 044V4401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 17:20

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 09:13

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW15-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 081V8101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 06:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0		U
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

ULBSL

JAC 6805

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW15-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 045V4501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 03/31/09 16:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 09:43

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-06

Sample wt/vol: 950.0 (g/ml) ML Lab File ID: 082V8201

% Moisture: _____ decanted: (Y/N) __ Date Sampled: 04/01/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted: 04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 07:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.084	1.0		U
121-82-4	RDX	0.084	1.0		U
98-95-3	Nitrobenzene	0.093	1.0		U
99-65-0	1,3-Dinitrobenzene	0.084	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.084	1.0		U
121-14-2	2,4-Dinitrotoluene	0.11	1.0		U
606-20-2	2,6-Dinitrotoluene	0.11	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.084	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.0		U
479-45-8	Tetryl	0.084	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.084	1.0		U
88-72-2	2-Nitrotoluene	0.084	1.0		U
99-99-0	4-Nitrotoluene	0.084	1.0		U
99-08-1	3-Nitrotoluene	0.13	1.0		U
618-87-1	3,5-Dinitroaniline	0.084	1.0		U

UL SSL

JJC 6/8/09

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-06

Sample wt/vol: 950.0 (g/ml) ML Lab File ID: 047V4701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 12:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 10:44

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.28	3.2		U UL SSL

6809

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-07

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 083V8301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 07:29

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98	0.28	~~J~~ B BL
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		~~U~~ UL BSL
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-07

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 048V4801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 11:45

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 11:14

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9	2.0	~~JPJ~~ CCH

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-08

Sample wt/vol: 850.0 (g/ml) ML Lab File ID: 084V8401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 07:58

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.094	1.2		U
121-82-4	RDX	0.094	1.2		U
98-95-3	Nitrobenzene	0.10	1.2		U
99-65-0	1,3-Dinitrobenzene	0.094	1.2		U
99-35-4	1,3,5-Trinitrobenzene	0.094	1.2		U
121-14-2	2,4-Dinitrotoluene	0.12	1.2		U
606-20-2	2,6-Dinitrotoluene	0.12	1.2		U
118-96-7	2,4,6-Trinitrotoluene	0.094	1.2	0.21	~~JP~~ J
35572-78-2	2-Amino-4,6-dinitrotoluene	0.14	1.2		U
479-45-8	Tetryl	0.094	1.2		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.094	1.2		U
88-72-2	2-Nitrotoluene	0.094	1.2		U
99-99-0	4-Nitrotoluene	0.094	1.2		U
99-08-1	3-Nitrotoluene	0.14	1.2		U
618-87-1	3,5-Dinitroaniline	0.094	1.2		U

VuL BSL

2C

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-08

Sample wt/vol: 850.0 (g/ml) ML Lab File ID: 049V4901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:15

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 11:45

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.31	3.5		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-09

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 085V8501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 08:25

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98	0.13	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98	0.15	~~JPM~~ L BSL
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-FB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-09

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 050V5001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 15:40

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 13:31

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JJC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-10

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 087V8701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 09:21

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.089	1.1		U
121-82-4	RDX	0.089	1.1		U
98-95-3	Nitrobenzene	0.098	1.1		U
99-65-0	1,3-Dinitrobenzene	0.089	1.1		U
99-35-4	1,3,5-Trinitrobenzene	0.089	1.1		U
121-14-2	2,4-Dinitrotoluene	0.12	1.1		U
606-20-2	2,6-Dinitrotoluene	0.12	1.1		U
118-96-7	2,4,6-Trinitrotoluene	0.089	1.1		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.1		U
479-45-8	Tetryl	0.089	1.1		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.089	1.1		U
88-72-2	2-Nitrotoluene	0.089	1.1		U
99-99-0	4-Nitrotoluene	0.089	1.1		U
99-08-1	3-Nitrotoluene	0.13	1.1		U
618-87-1	3,5-Dinitroaniline	0.089	1.1		U

ULBSL

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-10

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 051V5101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 14:01

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.29	3.3		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-11

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 089V8901

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/18/09 10:17

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.075	0.93		U
121-82-4	RDX	0.075	0.93	0.52	~~JP~~ J 2C
98-95-3	Nitrobenzene	0.082	0.93		U
99-65-0	1,3-Dinitrobenzene	0.075	0.93		U
99-35-4	1,3,5-Trinitrobenzene	0.075	0.93		~~U~~ UL BSL
121-14-2	2,4-Dinitrotoluene	0.097	0.93		U
606-20-2	2,6-Dinitrotoluene	0.097	0.93		U
118-96-7	2,4,6-Trinitrotoluene	0.075	0.93		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.11	0.93		U
479-45-8	Tetryl	0.075	0.93		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.075	0.93		U
88-72-2	2-Nitrotoluene	0.075	0.93		U
99-99-0	4-Nitrotoluene	0.075	0.93		U
99-08-1	3-Nitrotoluene	0.11	0.93		U
618-87-1	3,5-Dinitroaniline	0.075	0.93		U

JC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
2-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904043-11

Sample wt/vol: 1070 (g/ml) ML Lab File ID: 052V5201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/01/09 16:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/06/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 14:32

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L MDL	RL	CONC	Q
78-11-5	PETN	0.25	2.8		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 037V3701

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 13:25

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 4.0(ml) Date Analyzed: 04/19/09 05:02

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.47	J
121-82-4	RDX	0.080	1.0	0.91	J
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.11	~~JP~~ B BL
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JEC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-01

Sample wt/vol: 500.0 (g/ml) ML Lab File ID: 055V5501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 13:25

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 16:03

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L MDL	RL	CONC	Q
78-11-5	PETN	0.53	6.0		U

JMC 6/8/09

FORM I EXPL

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12P-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 042V4201

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 07:22

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0	0.52	J
121-82-4	RDX	0.080	1.0	0.90	J
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0		U MLBSL
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW12P-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-02

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 058V5801

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 14:00

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 17:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040209

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 043V4301

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/02/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 07:49

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.078	0.98		U
121-82-4	RDX	0.078	0.98	0.15	~~JP~~ J JC
98-95-3	Nitrobenzene	0.086	0.98		U
99-65-0	1,3-Dinitrobenzene	0.078	0.98		U
99-35-4	1,3,5-Trinitrobenzene	0.078	0.98		U JNL BSL
121-14-2	2,4-Dinitrotoluene	0.10	0.98		U
606-20-2	2,6-Dinitrotoluene	0.10	0.98		U
118-96-7	2,4,6-Trinitrotoluene	0.078	0.98		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	0.98		U
479-45-8	Tetryl	0.078	0.98	0.094	~~JP~~ J JC
19406-51-0	4-Amino-2,6-dinitrotoluene	0.078	0.98		U
88-72-2	2-Nitrotoluene	0.078	0.98		U
99-99-0	4-Nitrotoluene	0.078	0.98		U
99-08-1	3-Nitrotoluene	0.12	0.98		U
618-87-1	3,5-Dinitroaniline	0.078	0.98		U

JMC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040209

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-03

Sample wt/vol: 1020 (g/ml) ML Lab File ID: 059V5901

% Moisture: _____ decanted: (Y/N) ___ Date Sampled: 04/02/09 15:10

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 18:04

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	2.9		U

JAC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09B-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-04

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 044V4401

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 11:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 08:17

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.089	1.1		U
121-82-4	RDX	0.089	1.1		U
98-95-3	Nitrobenzene	0.098	1.1		U
99-65-0	1,3-Dinitrobenzene	0.089	1.1		U
99-35-4	1,3,5-Trinitrobenzene	0.089	1.1	0.11	~~JP~~ B BL
121-14-2	2,4-Dinitrotoluene	0.12	1.1		U
606-20-2	2,6-Dinitrotoluene	0.12	1.1		U
118-96-7	2,4,6-Trinitrotoluene	0.089	1.1		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.13	1.1		U
479-45-8	Tetryl	0.089	1.1		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.089	1.1		U
88-72-2	2-Nitrotoluene	0.089	1.1		U
99-99-0	4-Nitrotoluene	0.089	1.1		U
99-08-1	3-Nitrotoluene	0.13	1.1		U
618-87-1	3,5-Dinitroaniline	0.089	1.1		U

6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-GW09B-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-04

Sample wt/vol: 900.0 (g/ml) ML Lab File ID: 060V6001

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 11:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 18:34

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.29	3.3		U

JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.
YS06-EB0
1-040309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 045V4501

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/19/09 08:45

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
2691-41-0	HMX	0.080	1.0		U
121-82-4	RDX	0.080	1.0	0.11	~~JP~~ J x
98-95-3	Nitrobenzene	0.088	1.0		U
99-65-0	1,3-Dinitrobenzene	0.080	1.0		U
99-35-4	1,3,5-Trinitrobenzene	0.080	1.0	0.22	J L BSL
121-14-2	2,4-Dinitrotoluene	0.10	1.0		U
606-20-2	2,6-Dinitrotoluene	0.10	1.0		U
118-96-7	2,4,6-Trinitrotoluene	0.080	1.0		U
35572-78-2	2-Amino-4,6-dinitrotoluene	0.12	1.0		U
479-45-8	Tetryl	0.080	1.0		U
19406-51-0	4-Amino-2,6-dinitrotoluene	0.080	1.0		U
88-72-2	2-Nitrotoluene	0.080	1.0		U
99-99-0	4-Nitrotoluene	0.080	1.0		U
99-08-1	3-Nitrotoluene	0.12	1.0		U
618-87-1	3,5-Dinitroaniline	0.080	1.0		U

JLC 6809

FORM 1
EXPL ORGANICS ANALYSIS DATA SHEET

CLIENT SAMPLE NO.

YS06-EB0
1-040309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix: (soil/water) WATER Lab Sample ID: 0904058-05

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 061V6101

% Moisture: _____ decanted: (Y/N)___ Date Sampled: 04/03/09 12:30

Extraction: (SepF/Cont/Sonc/Soxh) SEPF Date Extracted:04/09/09

Concentrated Extract Volume: 8.0(ml) Date Analyzed: 04/24/09 19:05

Injection Volume: 100.0(uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: NA Sulfur Cleanup: (Y/N) N

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND	MDL	RL	CONC	Q
78-11-5	PETN	0.26	3.0		U

JMC 6/8/09

Holding Times

Sampling Date: 3/26-4/3
Received Date: 3/28, 4/3
Extraction Dates: 3/31, 4/6, 4/9
Analysis Dates: 4/15-4/24

Sample receipt documentation was in order. Cooler temps were acceptable with one exception. One cooler was received at 8 degrees Celsius. Sample temp was less than 10 and according to the laboratory there was plenty of ice in the cooler, so results were not flagged.

Calibrations
The samples in this SDG were analyzed according to SW-846 method 8332. Initial calibrations were performed with a standard five-point curve for the target compound and surrogate. Calibration factors and %RSD were calculated. Linearity criteria were met. Column resolution was good. Retention times were stable throughout the analytical sequence. The correct analytical sequence was run. All required instrument blanks were analyzed. Continuing calibration standards were analyzed per the method. Continuing calibration criteria were met with some exceptions. See report for qualifications. Raw data was verified.

BLANK SUMMARY

Blank qualification guidelines:

- No action is taken if a compound is found in the blank but not in the sample.
- Any compound detected in the sample and the associated blank, must be qualified by elevating the limit of detection or adjusting the limit of detection to the sample result, when the sample concentration is less than five (5) times the blank concentration.
- Sample weight, volume or dilution factor must be taken into consideration when applying the 5X criteria.
- Apply the same data validation guidelines to any associated rinse and field blanks and all associated samples.
- Qualification/Action codes:
  No Action - The sample result is greater than the RL and greater than five times (5X) the blank value.
  B - The sample result is less than five times (5X) the blank value. Report the value with a B flag.

Contamination was reported in the associated field QC blanks.

Blank ID	Compound	Conc (ug/L)	Action Level (ug/L)	Q Flag	Q Code
YS06-FB01-032609	1,3,5-trinitrobenzene	0.34JPM ug/L	1.7 ug/L	B	BL
YS06-EB01-032609	HMX	0.22J ug/L	1.1 ug/L	B	BL
YS06-FB01-040109	1,3,5-trinitrobenzene	0.15JPM ug/L	0.75 ug/L	B	BL
	RDX	0.13JP ug/L	0.65 ug/L	B	BL
YS06-EB02-040109	RDX	0.52JP ug/L	2.6 ug/L	B	BL
YS06-EB01-040309	1,3,5-trinitrobenzene	0.22JPM ug/L	1.1 ug/L	B	BL

Sample ID	Compound	Q Flag	Q Code
YS06-GW06A-0309, YS06-GW07-0309, YS06-GW05B-0309, YS06-GW05BP-0309, YS06-GW12-0409, YS06-GW09B-0409	1,3,5-trinitrobenzene	B	BL
YS06-GW07-0309	HMX	B	BL
YS06-GW13A-0409	RDX	B	BL

SURROGATE RECOVERIES

All surrogate recovery criteria were met with the exception of three samples requiring qualifications. All results in samples YS06-GW06-0309 and YS06-GW13-0409 were qualified as biased low L/UL. All reported positive results in sample YS06-GW04-0309 were qualified as biased high K.

MATRIX SPIKE PAIR SUMMARY

The MS/MSD pair of sample YS06-GW12-0409 exhibited acceptable recoveries (within QAPP limits) in the MS and/or the MSD. RPDs were OK. The LCS sample provided with this SDG also exhibited acceptable recoveries for the target compounds except for 1,3,5-trinitrobenzene, which was low in both LCS & LCSD. This analyte was flagged as biased low in all samples. RPDs were OK

FIELD DUPLICATE SAMPLE SUMMARY

Sample ID: YS06-GW12-0409 **Duplicate ID:** YS06-GW12P-0409

Compound	Sample Conc.	Duplicate Conc.	RPD
HMX	0.47	0.52	10%
RDX	0.91	0.9	1%
1,3,5-TNB	0.11	0	200%

Comments: No qualifications were required. All results were <RLs.

Sample ID: YS06-GW05B-0309 **Duplicate ID:** YS06-GW05BP-0309

Compound	Sample Conc.	Duplicate Conc.	RPD
HMX	7.2	8.3	14%
RDX	20	23	14%
1,3-DNB	0.34	0.37	8%
1,3,5-TNB	0.98	0.77	24%
2,4-DNT	2.6	4	42%
2,4,6-TNT	1	0.99	1%
2-amino-4,6-DNT	5.4	5.4	0%

Comments: J 2,4-DNT in field duplicate pair

SAMPLE RESULT VERIFICATION

All samples with results reported with P flags were qualified as estimated J. Some samples were reported with an M qualifier to indicate matrix issues. These results were qualified as estimated J if not already flagged due to another QC issue. One sample, YS06-GW04-0309, required dilution to accurately quantitate a target compound. Raw data was verified.

Reviewer JCleveland **Date:** 61109

Initial Calibration Date: 2/20/09, HPLC2, ULTRA C-18
RRF and %RSD Calculations: RF10, FILE ID 002V0401
Compound Name: rdx
Lab Value: 147.6000

Area of Compound	1476
Conc. Of Compund	10
Calculated CF	147.6000

Compound Name: rdx
Lab Value: 17.2

CF 1	147.6000
CF 2	110.4800
CF 3	195.5200
CF 4	157.8460
CF 5	139.9800
CF 6	142.6960
CF7	141.9630
Calculated % RSD	17.21

Continuing Calibration File ID: 4/15/09, 0722, File ID 037v3701.d
RRF and %D Calculations:
Compound Name: nitrobenzene
Lab Value: 388.00000

Area of Compound	388461
Conc. Of Compund	1000
Calculated CF	388.4610

Compound Name: nitrobenzene
Lab Value: 10.7

Average RRF	351.00000
Calibration Check RRF	388.00000
Calculated % D	-10.5

SAMPLE CALCULATION

Sample ID: YS06-GW05B-0309
Standard ID: ICAL
Compound: 2,4-DNT
Concentration: 2.6 ug/L

	Water (ug/L)	Soil (ug/Kg)	Soil ug/Kg)
Area of Compound	8756		
CF of Compound	25.15066		
Dilution Factor	1		
Weight of Sample	NA		
Extract Volume	8		
Volume of Sample	1050	NA	
% Moisture	NA		
injection volume	100	NA	
Conversion Factor	100		
Concentration	2.6500	#REF!	#REF!

ORGANIC CASE NARRATIVE – Explosives – REVISED 6/11/09
CH2M Hill, Inc. – YORKTOWN_NWS
SDG: SDG002/ CTO166
Workorder: 0903354, 0903355, 0904043 and 0904058

Sampled	Rec'd	Lab ID	Client ID
3/26/2009	3/28/2009	0903354-02	YS06-GW06-0309
3/26/2009	3/28/2009	0903354-03	YS06-GW06A-0309
3/26/2009	3/28/2009	0903354-04	YS06-EB02-032609
3/26/2009	3/28/2009	0903355-01	YS06-GW07-0309
3/26/2009	3/28/2009	0903355-02	YS06-GW05B-0309
3/26/2009	3/28/2009	0903355-03	YS06-GW05BP-0309
3/26/2009	3/28/2009	0903355-04	YS06-EB01-032609
3/31/2009	4/3/2009	0904043-01	YS06-GW08-0309
3/31/2009	4/3/2009	0904043-02	YS06-GW04-0309
3/31/2009	4/3/2009	0904043-03	YS06-EB01-033109
3/31/2009	4/3/2009	0904043-04	YS06-GW14-0309
3/31/2009	4/3/2009	0904043-05	YS06-GW15-0309
4/1/2009	4/3/2009	0904043-06	YS06-GW13-0409
4/1/2009	4/3/2009	0904043-07	YS06-GW13A-0409
4/1/2009	4/3/2009	0904043-08	YS06-GW12A-0409
4/1/2009	4/3/2009	0904043-09	YS06-FB01-040109
4/1/2009	4/3/2009	0904043-10	YS06-EB01-040109
4/1/2009	4/3/2009	0904043-11	YS06-EB02-040109
4/2/2009	4/7/2009	0904058-01	YS06-GW12-0409
4/2/2009	4/7/2009	0904058-02	YS06-GW12P-0409
4/2/2009	4/7/2009	0904058-03	YS06-EB01-040209
4/3/2009	4/7/2009	0904058-04	YS06-GW09B-0409
4/3/2009	4/7/2009	0904058-05	YS06-EB01-040309

Method: The samples were analyzed by USEPA SW-846 Method 8330A (solid phase extraction followed by packed column HPLC) for waters upon receipt to the laboratory in satisfactory condition.

Comments: The analyses for these samples were satisfactorily completed within sample holding times and met the corresponding specifications with the following exceptions:

- NOTE: Samples received 4/3/09 were on one COC but received in three separate coolers. Of the three coolers, one was at 8°C. Due to a misunderstanding as to the correct sample receiving procedure and the thought that temperature was acceptable so long as the cooler contained ice, no note was made as to which samples/containers were received at 8°C.
- Samples were analyzed for an extended target list including PETN and 3,5-dinitroaniline. Wavelengths 254nm and 210nm were used to obtain the requested quantitation limits.
- Initial Calibration Criteria: All method criteria were met for the analytes reported. Reported quantitation limits are validated with the low point of the initial calibration.
- Continuing Calibration Criteria: Most CCVs were within 20% difference or exceeded with a positive bias and were non-detect or were not required for confirmation. The 4/24/09 19:35 C-18 CCV exceeded 20% difference with a negative bias for the surrogate 1,2-dinitrobenzene. Associate surrogate recoveries were evaluated and determined not to have been biased into control.
- Blank Results: No target analytes were detected in the associated samples.
- Surrogate Recoveries: Recoveries of the surrogate were below the limit of 40% at 15%/14%/11% for sample YS06-GW06-0309. Pinnacle confirmation surrogate concentrations were masked by a matrix peak making results either non-detect or extremely high in samples analyzed 4/23/09 and 4/26/09. See form 2.
- LCS/LCSD Results: Recoveries of Tetryl, 1,3,5-trinitrobenzene and HMX were below

Resubmitted Rod 6/10
JAC 6.10.09

the limits of 20%, 65% and 80% at 0%/(62%), 55%/(96%) and 79%/(89%) in spike samples EW1BLK0331LCS/LCSD with 1,3,5-trinitrobenzene having an RPD exceeding the limit of 30 at 41. All other recoveries and relative percent differences were within limits. Results for tetryl are qualified with a "Q" in the associated samples. All other LCS/LCSD results were within limits.

- MS/MSD Results: Recoveries of tetryl and 3,5-dinitroaniline were below the limits of 80% and 60% at 78%/(85%) and 47%/52% while the relative percent difference for tetryl exceeded the limit of 30 at 34. All other recoveries and relative percent differences were within limits.
- Dilutions: All samples were analyzed without dilution. Sample YS06-GW04-0309 was also analyzed at a 2x dilution.
- Manual integrations: Quantitation signals were manually integrated in order to accurately reflect the peak areas based on the technical judgment of the analyst. A listing of the manual integrations performed and reason for the integration is included with the logs. Before and after "pictures" are available where manual integrations were performed.

I certify that, to the best of my knowledge and based upon my inquiry of those individuals immediately responsible for obtaining the information, the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, with the exception of the conditions detailed in the case narrative, as verified by the following signature.

Marcia K. McGinnity
Senior Project Manager

Resubmitted Rcd 6/10
JAC 61009

Jacqueline Cleveland

From: "Cathy Dover" <cdover@compuchemlabs.com>
To: "Jacqueline Cleveland" <cleve137@charter.net>
Cc: "Rebekha Shaw" <Rebekha.Shaw@CH2M.com>; "DataQual" <dataqual@charter.net>
Sent: Thursday, June 11, 2009 9:53 AM
Subject: RE: CH2M Yorktown, CTO-166 Empirical SDG # SDG002

Hi Jackie,

I finally heard back from the sub lab on the Explosive sample cooler with the temperature of 8.0 degrees C. Their response is below. If we had received the cooler here and some samples were out of temperature range---we would have segregated the sample containers that were affected.

I am waiting for the revised narrative. I will forward the revised narrative as soon as I receive it.

Response from Empirical:
At the time these samples were received, there was one COC and three coolers so we are unable to determine which samples were in the cooler that was received at 8C. I have also come to learn that at that point in time, there was a misunderstanding as to the correct procedure in sample receiving. If a cooler contained samples "on ice" and was delivered from a local entity, it was assumed that the samples just did not have time to get down to temperature. No corrective action form was filled out to document the samples affected.

Would you like us to revise the case narrative for the report (s) in question so this is documented?

Cathy Dover
Supervisor of Project Management
Compuchem
501 Madison Ave.
Cary, N.C. 27513
(919)379-4089 office
(919)379-4050 fax

From: Jacqueline Cleveland [mailto:cleve137@charter.net]
Sent: Tuesday, June 09, 2009 12:56 PM
To: Cathy Dover
Cc: Rebekha Shaw; DataQual
Subject: CH2M Yorktown, CTO-166 Empirical SDG # SDG002

Good Afternoon Cathy!

I need some information regarding the SDG sub-contracted to Empirical for Explosives/PETN analysis. There was a cooler with a temperature of 8 degrees. I need a list of samples that were in this cooler and I need to know if these containers were used for the extraction and analysis of these samples. Please let me know if you have any questions. Thanks!

Jackie

Jacqueline Cleveland

Vice-President

DQES, LLC

636-352-9391

cleve137@charter.net

Dat. del. – ship by FED EX plan to pick up start SDG2 more to come **S 12732**

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6
TAT: 20 calendar day TAT
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL
Contact: JANICE SCHILLING
Address: 621 MAINSTREAM DR, SUITE
NASHVILLE, TN 37228220
Phone: (615) 345 1115 X256
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X4089
Fax: (919) 379-4050
Sampling complete? Y or N (see Note 1)
Project-specific (PS) or Batch (B) QC? ____

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other field blk

BOX #2: A. HCl + Ice; B. HNO_3 + Ice; C. NaOH + Ice; D. H_2SO_4 + Ice; E. Unpreserved; F. Ice Only; G. Other ____; H. $NaHSO_4$ + Ice; I. ZnAc+NaOH + Ice; J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other ____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL. 8330 + PETN + 3,5 DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-FB01-032609	3/26	1510	9	2	F		S	1*		✓		*low volume 0903354-0
YS06-GW06-03009		1030	2					2		✓		-02
YS06-GW06A-03009		1415	2					2		✓		-03
YS06-EB02-032609		1515	~~9~~ 4					~~2~~ 1*		✓		*low volume -04

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Kelly Dove	Date: 3/27/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1400	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 3/28/09 11:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision D 2-10-99

Sat. delivery   Ship to [illegible] pick up   continue SDG + (can close after these samples)   S 12744

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

Project Name: CTO-166 NWSY SITE 6
TAT: 20 calendar days
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL
Contact: JANICE SCHILLING
Address: 621 MAINSTREAM DRIVE SUITE 270 NASHVILLE, TN 37228
Phone: (615) 245-1115 X2510
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050
Sampling complete? Y or (N) (see Note 1) SDG just complete
Project-specific (PS) or Batch (B) QC? ______

BOX #1: 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other ______

BOX #2: A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other ______ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3: F- Filtered U- Unfiltered

BOX #4: H- High M- Medium L- Low

BOX #5: C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other ______

Sample ID	Date / Year 2009	Time	Matrix (Box #1)	Preservative (Box #2)	Filtered / Unfiltered (Box #3)	Expected Conc. (Box #4)	Method (Box #5)	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPL 8330+PETN+3,5-DNA				CCN	Remarks / Comments (see Notes 2 & 3)
YSØ6-GWØ7-Ø3Ø9	3/26	1005	2	F	U		S	2		✓				0903141-17	0903355-01
YSØ6-GWØ5B-Ø3Ø9	↓	1400	2	↓	↓		↓	↓		✓				-18	-02
YSØ6-GWØ5BP-Ø3Ø9	↓	1405	2	↓	↓		↓	↓		✓				-19	-03
YSØ6-EBØ1-Ø326Ø9	↓	1500	4	↓	↓		↓	↓		✓				-20	-04

[signature] 3/27/09

Client Special Instructions: Temperature ______ °C

Lab: Received in good condition? Y or N   Describe any problems:

#1 Relinquished by:(sig) [signature]	Date: 3/27/09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: Compuchem	Time: 1402	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig) [signature]	Date: 3/28/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 11:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

"SDG 2" S 12729

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: CTO-166 NWSY SITE 6
TAT: 20 calendar days
Report style: level IV
Disk requirement: SNEDD

Samples shipped to: EMPIRICAL LABS
Contact: JANICE SHILLING
Address: 621 MAINSTREAM DRIVE SUITE 270
NASHVILLE, TN 37228
Phone: (615) 345-1115 X256
Project Locale (state)

CompuChem point-of-contact: (4) CATHY DOVER
Phone: (919) 379-4100 X 4089
Fax: (919) 379-4050
Sampling complete? Y or (N) (see Note 1)
Project-specific (PS) or Batch (B) QC? _____

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: Explosives 8330 HPLC + 3,5 - DNA	CCN	Remarks / Comments (see Notes 2 & 3)
YS06-GW08-0309	3/31/2009	1210	2	F	U			2		✓	0903168-05	0904043-01
YS06-GW04-0309		1630	2					2		✓	-06	-02
YS06-EB01-033109		1730	4					2		✓	-07	-03
YS06-GW14-0309		1420	2					2		✓	-08	-04
YS06-GW15-0309		1630	2					2		✓	-09	-05
YS06-GW13-0409	4/1	1200	2					2		✓	-10	-06
YS06-GW13A-0409		1145	2					2		✓	-11	-07
YS06-GW12A-0409		1515	2					2		✓	-12	-08
YS06-FB01-040109		1540	9					2		✓	-13	-09
YS06-EB01-040109		1600	4					2		✓	-14	-10
YS06-EB02-040109		1610	4					2		✓	-15	-11

Clients Special Instructions: Temperature 5.0 °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) J-Rdp	Date: 4.2.09	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name: CompuChem	Time: 1700	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 4/3/09
Company Name:	Time:	Company Name:	Time:	Company Name:	Time: 10:00

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

S 12743

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: NWSY CTO-166 SITE 6	Samples shipped to: EMPIRICAL LABS	CompuChem point-of-contact: (4) CATHY DOLER
TAT: 20 calendar days	Contact: JANICE SHILLING	Phone: (919) 379-4100 x 4089
Report style: level IV	Address: 621 MAINSTREAM DRIVE, SUITE 270 NASHVILLE, TN 37228	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: (615) 345-1115 X 256	Sampling complete? Y or (N) (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC?

BOX #1: 1. Surface Water, 2. Ground Water, 3. Leachate, 4. Rinsate, 5. Soil / Sediment / Sludge, 6. Trip Blank, 7. Oil, 8. Waste, 9. Other

BOX #2: A. HCl + Ice, B. HNO_3 + Ice, C. NaOH + Ice, D. H_2SO_4 + Ice, E. Unpreserved, F. Ice Only, G. Other, H. $NaHSO_4$ + Ice, I. ZnAc+NaOH + Ice, J. Methanol

BOX #3: F- Filtered, U- Unfiltered

BOX #4: H- High, M- Medium, L- Low

BOX #5: C- CLP, T- TCLP, S- SW-846, W- CWA 600-series, O- Other

Sample ID	Date / Year	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPLOSIVES 8330T PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3)
												0904058-
YS06-GW12-0409	4/2	1325	2	F	U		S	4 (5)	X	✓	0903168-16	USE FOR MS/MSD -01
YS06-GW12P-0409	4/2	1400	2	↓	↓		↓	2		✓	-17	-02
YS06-EB01-040209	4/2	1510	4	↓	↓		↓	2		✓	-18	-03

Clients Special Instructions:

Temperature ____ °C

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig) Kelly Dunlap Date: 4/6/09	#2 Relinquished by:(sig) Date:	Relinquished by:(sig) Date:
Company Name: Compuchem Time: 1317	Company Name: Time:	Company Name: Time:
#1 Received by:(sig) Date:	#2 Received by:(sig) R Miller Date: 4/7/09	#2 Received by:(sig) Date:
Company Name: Time:	Company Name: Time 0900	Company Name: Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

10:00

Revision 0 2-10-99

(Complete) S 11583

SUBCONTRACT CHAIN-OF-CUSTODY RECORD

COMPUCHEM
a division of Liberty Analytical Corp.

501 Madison Avenue
Cary, NC 27513
1-800-833-5097

Project Name: NWSY CTO-1166 Site 6	Samples shipped to: EMPIRICAL LABS	CompuChem point-of-contact: (4) CATHY DOVER
	Contact: JANICE SHILLING	
TAT: 20 Calendar Days	Address: 621 MAINSTREAM DRIVE, SUITE 270	Phone: (919) 379-4100 X 4089
Report style: level IV	NASHEVILLE, TN 37228	Fax: (919) 379-4050
Disk requirement: SNEDD	Phone: (615) 345-1115 X 256	Sampling complete? (Y) or N (see Note 1)
	Project Locale (state)	Project-specific (PS) or Batch (B) QC? _____

BOX #1 1. Surface Water 2. Ground Water 3. Leachate 4. Rinsate 5. Soil / Sediment / Sludge 6. Trip Blank 7. Oil 8. Waste 9. Other _____

BOX #2 A. HCl + Ice B. HNO_3 + Ice C. NaOH + Ice D. H_2SO_4 + Ice E. Unpreserved F. Ice Only G. Other _____ H. $NaHSO_4$ + Ice I. ZnAc+NaOH + Ice J. Methanol

BOX #3 F- Filtered U- Unfiltered

BOX #4 H- High M- Medium L- Low

BOX #5 C- CLP T- TCLP S- SW-846 W- CWA 600-series O- Other _____

Sample ID	Date / Year 2009	Time	Box #1 Matrix	Box #2 Preservative	Box #3 Filtered / Unfiltered	Box #4 Expected Conc.	Box #5 Method	# of Bottles	Use for Lab QC (MS or DUP)	PARAMETERS: EXPLOSIVES 8330 + PETN + 3,5-DNA	CCN	Remarks / Comments (see Notes 2 & 3) 0904058
YS06-GW09B-0409	4/3	11:30	2	F	U		S	2		✓	0903168-19	-04
YS06-EB01-040309	4/3	12:30	↓	↓	↓		↓	↓		✓	↓ -20	-05

Temperature _____ °C

Clients Special Instructions:

Lab: Received in good condition? Y or N Describe any problems:

#1 Relinquished by:(sig)	Date:	#2 Relinquished by:(sig)	Date:	Relinquished by:(sig)	Date:
Company Name:	Time:	Company Name:	Time:	Company Name:	Time:
#1 Received by:(sig)	Date:	#2 Received by:(sig)	Date: 4/7/09	#2 Received by:(sig)	Date:
Company Name:	Time:	Company Name:	Time: 10:00	Company Name:	Time:

Note (1) If "N" lab should batch samples to await remainder of project - maximizing batch size and minimizing QC ratio; if "Y" lab should begin processing batches now.
Note (2) Samples should be stored 60 days after date report mailed at no extra charge.
Note (3) All lab copies of data should be retained for a minimum of 3 years.
Note (4) Please call point-of-contact to verify receipt of samples.

Revision 0 2-10-99

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903354 Number of Coolers: 1 of 2

Client: Compuchem Project: CTO-166

Date/Time Received: **03/28/09 11:00** Date cooler(s) opened: **03/28/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9705

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 5.1°C

Dates samples were logged-in: 03/28/09 WS 3/30/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0903353 Number of Coolers: 1 of 2

Client: Chemtech Project: CTO-166

Date/Time Received: **03/28/09 11:00** Date cooler(s) opened: **03/28/09**

Opened By (print): **WILLIAM SCHWAB** (signature):

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other:

If applicable, enter airbill number here: 9690

2. Were custody seals on outside of cooler(s)? ..... Yes (No)

How many: — Seal date: — Seal Initials: —

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	(N/A)
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 2.4°C

Dates samples were logged-in: **03/28/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID:

CAR#:

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0904043 Number of Coolers: 3 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: **04/03/09 10:00** Date cooler(s) opened: **04/03/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9589

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 4/2/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 5.0°C

Dates samples were logged-in: 04/03/09

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 2 of 3

Client: Compuchem Project: CTO-166

Date/Time Received: 04/03/09 10:00 Date cooler(s) opened: 04/03/09

Opened By (print): WILLIAM SCHWAB (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 2395

2. Were custody seals on outside of cooler(s)? ..... Yes No

How many: 1 Seal date: 4/2/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival?	Yes	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	Yes	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	Yes	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	Yes	No	N/A
7. Was project identifiable from custody papers?	Yes	No	N/A
8. If required, was enough ice present in the cooler(s)?	Yes	No	N/A

Type of Coolant: WET DRY BLUE NONE Temperature of Samples upon Receipt: 6.0°C

Dates samples were logged-in: 04/03/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 3

Client: Conpuchem Project: CTO-166

Date/Time Received: **04/03/09 10:00** Date cooler(s) opened: **04/03/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 8803

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 4/2/09 Seal Initials: ?

3. Were custody seals unbroken and intact at the date and time of arrival? ..... (Yes) No N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler? ..... (Yes) No N/A
5. Were custody papers filled out properly (ink, signed, etc.)? ..... (Yes) No N/A
6. Did you sign custody papers in the appropriate place for acceptance? ..... (Yes) No N/A
7. Was project identifiable from custody papers? ..... (Yes) No N/A
8. If required, was enough ice present in the cooler(s)? ..... (Yes) No N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 8.0°C

corrected CN received-

Dates samples were logged-in: 04/03/09

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____
10. Were all bottle lids intact and sealed tightly? ..... Yes No N/A
11. Did all bottles arrive unbroken? ..... Yes No N/A
12. Was all required bottle label information complete? ..... Yes No N/A
13. Did all bottle labels agree with custody papers? ..... Yes No N/A
14. Were correct containers used for the analyses indicated? ..... Yes No N/A
15. Were preservative levels correct in all applicable sample containers? ..... Yes No N/A
16. Was sufficient amount of sample sent for the analyses required? ..... Yes No N/A
17. Was headspace present in any included VOA vials? ..... Yes No N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: 0904058 Number of Coolers: 1 of 1

Client: Compuchem Project: CTO-166

Date/Time Received: **04/07/09 10:00** Date cooler(s) opened: **04/07/09**

Opened By (print): **WILLIAM SCHWAB** (signature): [signature]

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 9830

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 4/6/09 Seal Initials: ICS

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 1.1°C

Dates samples were logged-in: **04/07/09**

9. Initial this form to acknowledge login of sample(s): (Name): Will Schwab (Initial): WS

10. Were all bottle lids intact and sealed tightly?	(Yes)	No	N/A
11. Did all bottles arrive unbroken?	(Yes)	No	N/A
12. Was all required bottle label information complete?	(Yes)	No	N/A
13. Did all bottle labels agree with custody papers?	(Yes)	No	N/A
14. Were correct containers used for the analyses indicated?	(Yes)	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	(N/A)
16. Was sufficient amount of sample sent for the analyses required?	(Yes)	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	(N/A)

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

LIMS Number: _____ Number of Coolers: 1 of 1

Client: Compuchem Project: CTO-166

Date/Time Received: **04/07/09 10:00** Date cooler(s) opened: **04/07/09**

Opened By (print): **WILLIAM SCHWAB** (signature): _____

Circle response below as appropriate

1. How did the samples arrive?: FedEx UPS DHL Hand Delivered
EL Courier Other: _____

If applicable, enter airbill number here: 2645

2. Were custody seals on outside of cooler(s)? ..... (Yes) No

How many: 1 Seal date: 4/6/09 Seal Initials: ES

3. Were custody seals unbroken and intact at the date and time of arrival?	(Yes)	No	N/A
4. Were custody papers sealed in a plastic bag included in the sample cooler?	(Yes)	No	N/A
5. Were custody papers filled out properly (ink, signed, etc.)?	(Yes)	No	N/A
6. Did you sign custody papers in the appropriate place for acceptance?	(Yes)	No	N/A
7. Was project identifiable from custody papers?	(Yes)	No	N/A
8. If required, was enough ice present in the cooler(s)?	(Yes)	No	N/A

Type of Coolant: (WET) DRY BLUE NONE Temperature of Samples upon Receipt: 3.2°C

Dates samples were logged-in: **04/07/09**

9. Initial this form to acknowledge login of sample(s): (Name): _____ (Initial): _____

10. Were all bottle lids intact and sealed tightly?	Yes	No	N/A
11. Did all bottles arrive unbroken?	Yes	No	N/A
12. Was all required bottle label information complete?	Yes	No	N/A
13. Did all bottle labels agree with custody papers?	Yes	No	N/A
14. Were correct containers used for the analyses indicated?	Yes	No	N/A
15. Were preservative levels correct in all applicable sample containers?	Yes	No	N/A
16. Was sufficient amount of sample sent for the analyses required?	Yes	No	N/A
17. Was headspace present in any included VOA vials?	Yes	No	N/A

If Non-Conformance issues were present, list by sample ID: _____

_____

_____ CAR#: _____

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\037V3701.D
Report Date: 16-Apr-2009 13:19

JLS 4.16.09

Empirical Laboratories, LLC

J.H. 4.22.09

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 07:22
Lab File ID: 037V3701.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.72700	0.010	-7.6	15.0	
	2 RDX	148	147	0.010	-0.7	15.0	
$	30 1,2-Dinitrobenzene	202	197	0.010	-2.2	15.0	
	3 1,3,5-Trinitrobenzene	350	350	0.010	-0.1	15.0	
	4 1,3-Dinitrobenzene	485	466	0.010	-3.7	15.0	
	5 Tetryl	239	191	0.010	-20.1	15.0	<-Low
	6 Nitrobenzene	351	388	0.010	10.7	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.70500	0.010	-12.9	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	11.83800	0.010	-12.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	322	0.010	-5.5	15.0	
	12 2,6-Dinitrotoluene	213	195	0.010	-8.7	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.07300	0.010	-12.2	15.0	
	14 2-Nitrotoluene	207	205	0.010	-1.2	15.0	
	15 4-Nitrotoluene	182	176	0.010	-3.6	15.0	
	16 3-Nitrotoluene	226	222	0.010	-1.7	15.0	

Ave.: 6.9% x

No field samples assoc

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\050V5001.D
Report Date: 16-Apr-2009 14:59

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

JLB 4-16-09

Instrument ID: hplc2.i Injection Date: 15-APR-2009 13:24
Lab File ID: 050V5001.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041409.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	X φ558	0.010	36.5	15.0	<-HIGH

No field samples assoc.

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\002V0201.D
Report Date: 25-Apr-2009 08:34

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 15:37
Lab File ID: 002V0201.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\8330.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	541	0.010	32.3	15.0	<-

J+ - No+

FB01-032609
GW06-0309
GW06A-0309
EB02-032609

4/30/09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\013V1301.D
Report Date: 25-Apr-2009 08:56

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 20:45
Lab File ID: 013V1301.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\8330LOW.m

4/17/2009

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.59700	0.010	-8.2	15.0	
	2 RDX	148	144	0.010	-2.6	15.0	
$	32 1,2-Dinitrobenzene	202	189	0.010	-6.2	15.0	
	3 1,3,5-Trinitrobenzene	350	335	0.010	-4.4	15.0	
	4 1,3-Dinitrobenzene	485	450	0.010	-7.1	15.0	
	5 Tetryl	239	199	0.010	-16.8	15.0	<-
	6 Nitrobenzene	351	362	0.010	3.3	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.58400	0.010	-13.5	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	11.84400	0.010	-12.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	311	0.010	-8.8	15.0	
	12 2,6-Dinitrotoluene	213	186	0.010	-12.5	15.0	
	13 2,4-Dinitrotoluene	25.15066	21.94000	0.010	-12.8	15.0	
	14 2-Nitrotoluene	207	196	0.010	-5.2	15.0	
	15 4-Nitrotoluene	182	165	0.010	-9.5	15.0	
	16 3-Nitrotoluene	226	212	0.010	-6.4	15.0	

✓ JMJ 8.67.

4/30/09

see prev page for assoc

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\014V1401.D
Report Date: 25-Apr-2009 08:56

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 15-APR-2009 21:13
Lab File ID: 014V1401.D Init. Cal. Date(s): 09-JAN-2008 01-APR-2009
Analysis Type: Init. Cal. Times: 17:56 08:54
Lab Sample ID: DNA 1ppm 09D0178 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041509.b\8330LOW.m

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
28 3,5-Dinitroaniline	409	559	0.010	36.8	15.0	<-

Not-NQ see prev page for assoc'd quals

H.V. 4/30/09

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\011V1102.D
Report Date: 20-Apr-2009 10:18

JLG 4-20-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 16-APR-2009 21:44
Lab File ID: 011V1102.D Init. Cal. Date(s): 09-JAN-2008 16-APR-2009
Analysis Type: Init. Cal. Times: 17:56 20:21
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	20.26359	18.81200	0.010	-7.2	15.0	
	2 RDX	148	145	0.010	-1.7	15.0	
$	32 1,2-Dinitrobenzene	202	192	0.010	-4.8	15.0	
	3 1,3,5-Trinitrobenzene	350	341	0.010	-2.7	15.0	
	4 1,3-Dinitrobenzene	485	461	0.010	-5.0	15.0	
	5 Tetryl	239	192	0.010	-19.6	15.0	<-LOW JLJ
	6 Nitrobenzene	351	373	0.010	6.3	15.0	
	9 2,4,6-Trinitrotoluene	21.47950	18.95900	0.010	-11.7	15.0	
	10 4-Amino-2,6-dinitrotoluene	13.53216	12.11800	0.010	-10.5	15.0	
	11 2-Amino-4,6-dinitrotoluene	341	318	0.010	-6.6	15.0	
	12 2,6-Dinitrotoluene	213	191	0.010	-10.2	15.0	
	13 2,4-Dinitrotoluene	25.15066	22.34200	0.010	-11.2	15.0	
	14 2-Nitrotoluene	207	200	0.010	-3.6	15.0	
	15 4-Nitrotoluene	182	172	0.010	-5.5	15.0	
	16 3-Nitrotoluene	226	218	0.010	-3.6	15.0	

7.390

GW07-0309
GW05B
GW05BP
EB01-032609

4/20/2009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\024V2401.D
Report Date: 20-Apr-2009 10:19

JLB 4-20-09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i Injection Date: 17-APR-2009 03:46
Lab File ID: 024V2401.D Init. Cal. Date(s): 09-JAN-2008 16-APR-2009
Analysis Type: Init. Cal. Times: 17:56 20:21
Lab Sample ID: Expl 1ppm09D0248 Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\8330LOW.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
1	HMX	20.26359	ϕ 19.12200	0.010	-5.6	15.0	
2	RDX	148	145	0.010	-1.8	15.0	
$ 32	1,2-Dinitrobenzene	202	205	0.010	1.9	15.0	
3	1,3,5-Trinitrobenzene	350	372	0.010	6.1	15.0	
4	1,3-Dinitrobenzene	485	473	0.010	-2.3	15.0	
5	Tetryl	239	169	0.010	-29.5	15.0	<-low
6	Nitrobenzene	351	362	0.010	3.2	15.0	
9	2,4,6-Trinitrotoluene	21.47950	19.17400	0.010	-10.7	15.0	
10	4-Amino-2,6-dinitrotoluene	13.53216	12.36200	0.010	-8.6	15.0	
11	2-Amino-4,6-dinitrotoluene	341	321	0.010	-5.7	15.0	
12	2,6-Dinitrotoluene	213	193	0.010	-9.3	15.0	
13	2,4-Dinitrotoluene	25.15066	22.66300	0.010	-9.9	15.0	
14	2-Nitrotoluene	207	201	0.010	-2.8	15.0	
15	4-Nitrotoluene	182	172	0.010	-5.5	15.0	
16	3-Nitrotoluene	226	220	0.010	-2.8	15.0	

2.5%

See prev page for assoc. 8 grabs

BR 042009

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\062V6201.D
Report Date: 26-Apr-2009 16:27

JLG 4.26.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc2.i
Lab File ID: 062V6201.D
Analysis Type:
Lab Sample ID: mix#4 1/5ppm
Method: \\ELABNSH05\TARGET\chem\hplc2.i\042309.b\8332C.m

Injection Date: 24-APR-2009 19:35
Init. Cal. Date(s): 29-NOV-2004 12-MAR-2009
Init. Cal. Times: 16:41 05:41
Quant Type: ESTD

COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
$ 29 1,2-Dinitrobenzene	384	Φ 208	0.010	-45.8	15.0	<- Low Surrogate - NI
8 Nitroglycerin	9.72121	Δ 12.02140	0.010	23.7	15.0	<- HIGH (not used)
17 PETN	380	213	0.010	18.0	15.0	<- <20%

High J+

~~No field samples associated.~~

JLC 4/10/09

GW13-0409 LWL
GW13A-0409 ✓ 4/22/09
GW12A-0409

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\116V1601.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 00:52
Lab File ID: 116V1601.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.96000	0.010	4.6	15.0	
	2 RDX	275	290	0.010	5.4	15.0	
	4 3,5-Dinitroaniline	1000	1024	0.010	-2.4	15.0	
	5 Nitrobenzene	258	251	0.010	-2.6	15.0	
	6 4-Amino-2,6-dinitrotolune	359	285	0.010	-20.7	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.11000	0.010	-0.5	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.20500	0.010	-13.6	15.0	
	10 2-Nitrotoluene	367	349	0.010	-4.9	15.0	
	12 3-NT/4-NT	242	234	0.010	-3.4	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	974	0.010	2.6	15.0	
	14 2,6-Dinitrotoluene	1000	969	0.010	3.1	15.0	
	15 1,3,5-Trinitrobenzene	1000	917	0.010	8.3	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.59800	0.010	-5.6	15.0	
	17 Tetryl	1000	940	0.010	6.0	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.20600	0.010	-15.2	15.0	<- NQ

04/24/09

YS06-FB01-032809
GW06-0309
GW06A-0309
FB02-032609

all quanted from primary column

4/27/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\129V2901.D
Report Date: 24-Apr-2009 13:28

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i
Lab File ID: 129V2901.D
Analysis Type:
Lab Sample ID: Expl+ 1.0ppm
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

Injection Date: 24-APR-2009 08:55
Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Init. Cal. Times: 17:34 00:29
Quant Type: ESTD

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	32.24700	0.010	2.3	15.0	
	2 RDX	275	272	0.010	-0.8	15.0	
	4 3,5-Dinitroaniline	1000	1019	0.010	-1.9	15.0	
	5 Nitrobenzene	258	249	0.010	-3.5	15.0	
	6 4-Amino-2,6-dinitrotolune	359	282	0.010	-21.4	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.01100	0.010	-1.2	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.27900	0.010	-12.7	15.0	
	10 2-Nitrotoluene	367	362	0.010	-1.4	15.0	
	12 3-NT/4-NT	242	239	0.010	-1.2	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	989	0.010	1.1	15.0	
	14 2,6-Dinitrotoluene	1000	1010	0.010	-1.0	15.0	
	15 1,3,5-Trinitrobenzene	1000	969	0.010	3.1	15.0	
	16 2,4-Dinitrotoluene	6.99064	6.95600	0.010	-0.5	15.0	
	17 Tetryl	1000	998	0.010	0.2	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.23500	0.010	-14.7	15.0	

4/14/09

1.5 J.

See prev. page for assoc +

GW070309
GW05B
GW05BP
EB01-032609

WL 4/22/09

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\142V4201.D
Report Date: 25-Apr-2009 13:37

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 24-APR-2009 18:19
Lab File ID: 142V4201.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PII.m

cl 4/25/09

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	33.14400	0.010	5.2	15.0	
	2 RDX	275	271	0.010	-1.2	15.0	
	4 3,5-Dinitroaniline	1000	1052	0.010	-5.2	15.0	
	5 Nitrobenzene	258	252	0.010	-2.3	15.0	
	6 4-Amino-2,6-dinitrotolune	359	303	0.010	-15.6	15.0	<- NQ
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.68500	0.010	3.3	15.0	
	9 1,3-Dinitrobenzene	8.33521	7.60100	0.010	-8.8	15.0	
	10 2-Nitrotoluene	367	360	0.010	-1.8	15.0	
	12 3-NT/4-NT	242	248	0.010	2.3	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	1005	0.010	-0.5	15.0	
	14 2,6-Dinitrotoluene	1000	1088	0.010	-8.8	15.0	
	15 1,3,5-Trinitrobenzene	1000	1015	0.010	-1.5	15.0	
	16 2,4-Dinitrotoluene	6.99064	7.75700	0.010	11.0	15.0	
	17 Tetryl	1000	1080	0.010	-8.0	15.0	
	18 2,4,6-Trinitrotoluene	6.13691	5.56800	0.010	-9.3	15.0	

Y506-GW07-0309
GW05B
GW05BP
EB01-032609

LC 4/27/09

Data File: \\elabnsh04\dd\chem\hplc1.i\042609.b\126V2601.D
Report Date: 28-Apr-2009 16:17

J.H. 4.28.09
JL 4.29.09

Empirical Laboratories, LLC

CONTINUING CALIBRATION COMPOUNDS

Instrument ID: hplc1.i Injection Date: 27-APR-2009 03:41
Lab File ID: 126V2601.D Init. Cal. Date(s): 09-APR-2009 17-APR-2009
Analysis Type: Init. Cal. Times: 17:34 00:29
Lab Sample ID: Expl+ 1.0ppm Quant Type: ESTD
Method: \\elabnsh04\dd\chem\hplc1.i\042609.b\8330PII.m

	COMPOUND	RRF	RF1000	MIN RRF	%D	MAX %D	
	1 HMX	31.51536	✓ 33.21200	0.010	5.4	15.0	
	2 RDX	275	✓ 297	0.010	8.2	15.0	
	4 3,5-Dinitroaniline	1000	1050	0.010	-5.0	15.0	
	5 Nitrobenzene	258	264	0.010	2.5	15.0	
	6 4-Amino-2,6-dinitrotolune	359	323	0.010	-10.1	15.0	
	8 2-Amino-4,6-dinitrotoluene	15.18576	15.58700	0.010	2.6	15.0	
	9 1,3-Dinitrobenzene	8.33521	8.61300	0.010	3.3	15.0	
	10 2-Nitrotoluene	367	398	0.010	8.5	15.0	
	12 3-NT/4-NT	242	256	0.010	5.7	15.0	
$	13 1-Chloro-3-Nitrobenzene	1000	1089	0.010	-8.9	15.0	
	14 2,6-Dinitrotoluene	1000	1163	0.010	-16.3	15.0	<- HIGH NQ
	15 1,3,5-Trinitrobenzene	1000	861	0.010	13.9	15.0	
	16 2,4-Dinitrotoluene	6.99064	5.95300	0.010	-14.8	15.0	
	17 Tetryl	1000	707	0.010	-29.3	15.0	<- LOW NQ
	18 2,4,6-Trinitrotoluene	6.13691	5.35900	0.010	-12.7	15.0	

quanted from primary

YS06-EB02-040109
GW12-0409
GW12P-0409
EB01-040209*
GW09B-0409
EB01-040309

AVE. < 15.0%D

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Column(1): ULTRA C-18 ID: 4.60 (mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC #	S1 2 %REC #	S2 1 %REC #	S2 2 %REC #	S3 1 %REC #	S3 2 %REC #	TOT OUT
01	EW1BLK0331	106	92					0
02	EW1BLK0331LC	102						0
03	EW1BLK0331LC	104						0
04	EW1BLK0331LC							0
05	EW1BLK0331LC							0
06	YS06-FB01-03	92	64					0
07	YS06-GW06-03	15*	11*	LHL				1
08	YS06-GW06A-0	114	110					0
09	YS06-EB02-03	87	62					0
10	YS06-GW07-03	125	98					0
11	YS06-GW05B-0	111	324*	NQ				1
12	YS06-GW05BP-	121	346*	NQ				1
13	YS06-EB01-03	120	93					0
14	EW1BLK0406	113	112					0
15	EW1BLK0406LC	120						0
16	EW1BLK0406LC							0
17	EW1BLK0406LC							0
18	YS06-GW08-03	100						0
19	YS06-GW04-03	316*	47650*	K+				2
20	YS06-GW15-03	96	0*	matrix	interference			1
21	YS06-GW13-04	46	0*	LHL				1
22	YS06-GW13A-0	81	0*	matrix	interference			1
23	YS06-GW12A-0	118	85					0
24	YS06-GW04-03	0D						0
25	YS06-EB01-03	103	69					0
26	YS06-GW14-03	109	0*	matrix	interference			1
27								
28								
29								
30								

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

QAPP Limits 60-140

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 2
WATER EXPL SURROGATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Column(1): ULTRA C-18 ID: 4.60 (mm)

	CLIENT SAMPLE NO.	S1 1 %REC	#	S1 2 %REC	#	S2 1 %REC	#	S2 2 %REC	#	S3 1 %REC	#	S3 , 2 %REC	#	TOT OUT
01	EW1BLK0331	106												0
02	EW1BLK0331LC	108												0
03	EW1BLK0331LC	96												0
04	YS06-FB01-03	66												0
05	YS06-GW06-03	14*		LHL										1
06	YS06-GW06A-0	99												0
07	YS06-EB02-03	73												0
08	YS06-GW07-03	88												0
09	YS06-GW05B-0	89												0
10	YS06-GW05BP-	94												0
11	YS06-EB01-03	100												0
12	EW1BLK0406	101												0
13	EW1BLK0406LC	98												0
14	EW1BLK0406LC	100												0
15	YS06-GW08-03	97												0
16	YS06-GW04-03	104												1
17	YS06-EB01-03	102												0
18	YS06-GW14-03	98												0
19	YS06-GW15-03	94												0
20	YS06-GW13-04	60												0
21	YS06-GW13A-0	81												1
22	YS06-GW12A-0	124												0
23														
24														
25														
26														
27														
28														
29														
30														

		EL QC LIMITS	SPIKE CONC (ug/L)
S1	= 1,2-Dinitrobenzene	(40-145)	2.0

Column to be used to flag recovery values
* Values outside of QC limits
D Surrogate results reported from a diluted analysis

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: YS06-GW12-0409 Lab Sample ID: 0904058-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.	
HMX	10.00	0.4662	8.289	78*	80-115	MSOOK
RDX	10.00	0.9092	9.605	87	50-160	
Nitrobenzene	10.00	0.0000	6.857	68	50-140	
1,3-Dinitrobenzene	10.00	0.0000	7.783	78	45-160	
1,3,5-Trinitrobenzene	10.00	0.1069	7.731	76	65-140	
2,4-Dinitrotoluene	10.00	0.0000	7.668	77	60-135	
2,6-Dinitrotoluene	10.00	0.0000	7.579	76	60-135	
2,4,6-Trinitrotoluene	10.00	0.0000	6.779	68	50-145	
2-Amino-4,6-dinitrotolu	10.00	0.0000	6.536	65	50-155	
Tetryl	10.00	0.0000	4.704	47	20-175	MSOOI
4-Amino-2,6-dinitrotolu	10.00	0.0000	7.055	70	55-155	
2-Nitrotoluene	10.00	0.0000	5.984	60	45-135	
4-Nitrotoluene	10.00	0.0000	6.089	61	50-130	
3-Nitrotoluene	10.00	0.0000	6.094	61	50-130	

50-140 } QAPP limits
50% }
No Quals Required

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: YS06-GW12-0409 Lab Sample ID: 0904058-01

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	8.942	85	8	30	80-115
RDX	10.00	10.01	91	4	30	50-160
Nitrobenzene	10.00	6.834	68	0	30	50-140
1,3-Dinitrobenzene	10.00	8.118	81	4	30	45-160
1,3,5-Trinitrobenzene	10.00	8.352	82	8	30	65-140
2,4-Dinitrotoluene	10.00	7.983	80	4	30	60-135
2,6-Dinitrotoluene	10.00	7.874	79	4	30	60-135
2,4,6-Trinitrotoluene	10.00	7.608	76	12	30	50-145
2-Amino-4,6-dinitrotolu	10.00	7.206	72	10	30	50-155
Tetryl	10.00	6.608	66	34*	30	20-175
4-Amino-2,6-dinitrotolu	10.00	7.728	77	9	30	55-155
2-Nitrotoluene	10.00	5.694	57	5	30	45-135
4-Nitrotoluene	10.00	5.883	59	3	30	50-130
3-Nitrotoluene	10.00	5.815	58	5	30	50-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 14 outside limits
Spike Recovery: 1 out of 28 outside limits

COMMENTS: _____

FORM 3
WATER EXPL MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: YS06-GW12-0409 Lab Sample ID: 0904058-01

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC #	QC. LIMITS REC.
3,5-Dinitroaniline	10.00	0.0000	4.740	47*	60-120

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
3,5-Dinitroaniline	10.00	5.219	52* OK	10	40	60-120

50-140% QAPP limits
50%
No Quals Required

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 1 outside limits
Spike Recovery: 2 out of 2 outside limits

COMMENTS: _____

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC #	QC. LIMITS REC.	
HMX	10.00	0.0000	7.946	79*	80-115	NQ LCSD t
RDX	10.00	0.0000	8.884	89	50-160	
Nitrobenzene	10.00	0.0000	7.924	79	50-140	
1,3-Dinitrobenzene	10.00	0.0000	8.711	87	45-160	
1,3,5-Trinitrobenzene	10.00	0.0000	5.478	55*	65-140	L/uL
2,4-Dinitrotoluene	10.00	0.0000	7.829	78	60-135	
2,6-Dinitrotoluene	10.00	0.0000	8.199	82	60-135	
2,4,6-Trinitrotoluene	10.00	0.0000	7.041	70	50-145	
2-Amino-4,6-dinitrotolu	10.00	0.0000	8.228	82	50-155	
Tetryl	10.00	0.0000	0.0000	0*	20-175	LCSD OK
4-Amino-2,6-dinitrotolu	10.00	0.0000	8.745	87	55-155	
2-Nitrotoluene	10.00	0.0000	8.322	83	45-135	
4-Nitrotoluene	10.00	0.0000	8.263	83	50-130	
3-Nitrotoluene	10.00	0.0000	8.464	85	50-130	

60-120 - QAPP Limits

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

COMMENTS: _____

FORM 3
WATER EXPL LAB CONTROL SAMPLE

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Matrix Spike - Client Sample No.: EW1BLK0331

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
HMX	10.00	8.918	89	10	30	80-115
RDX	10.00	10.11	101	12	30	50-160
Nitrobenzene	10.00	10.60	106	29	30	50-140
1,3-Dinitrobenzene	10.00	9.708	97	11	30	45-160
1,3,5-Trinitrobenzene	10.00	9.580	96	41*	30	65-140
2,4-Dinitrotoluene	10.00	8.907	89	13	30	60-135
2,6-Dinitrotoluene	10.00	9.249	92	12	30	60-135
2,4,6-Trinitrotoluene	10.00	8.435	84	18	30	50-145
2-Amino-4,6-dinitrotolu	10.00	9.319	93	12	30	50-155
Tetryl	10.00	6.165	62	N/A	30	20-175
4-Amino-2,6-dinitrotolu	10.00	8.700	87	0	30	55-155
2-Nitrotoluene	10.00	8.969	90	7	30	45-135
4-Nitrotoluene	10.00	9.058	90	9	30	50-130
3-Nitrotoluene	10.00	9.230	92	7	30	50-130

60-120

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 1 out of 14 outside limits
Spike Recovery: 3 out of 28 outside limits

COMMENTS: _____

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\015V1501.D
Report Date: 20-Apr-2009 10:19

Primary JLG 4.20.09

Empirical Laboratories, LLC

Data file : \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\015V1501.D
Lab Smp Id: 0903355-03 Client Smp ID: YS06-GW05BP-0309
Inj Date : 16-APR-2009 23:35
Operator : GM Inst ID: hplc2.i
Smp Info : 0903355-03
Misc Info : com.e03355;1060;8;9C31005;ug/L;;exph2o.sub;31-MAR-2009
Comment :
Method : \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\8330LOW.m
Meth Date : 20-Apr-2009 10:18 jjames Quant Type: ESTD
Cal Date : 16-APR-2009 20:21 Cal File: 009V0901.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ch2wp.sub
Target Version: 4.04
Processing Host: TARGET07_VM

Concentration Formula: Amt * DF * Uf*Vt*100/(Amt*Vi*(Solids/100))

Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit Correction Factor
Vt	8.000	Extract Volume (ml)
Amt	1060.000	Sample Volume (ml)
Vi	100.000	Injection Volume (ul)
Solids	100.000	Percent Solids

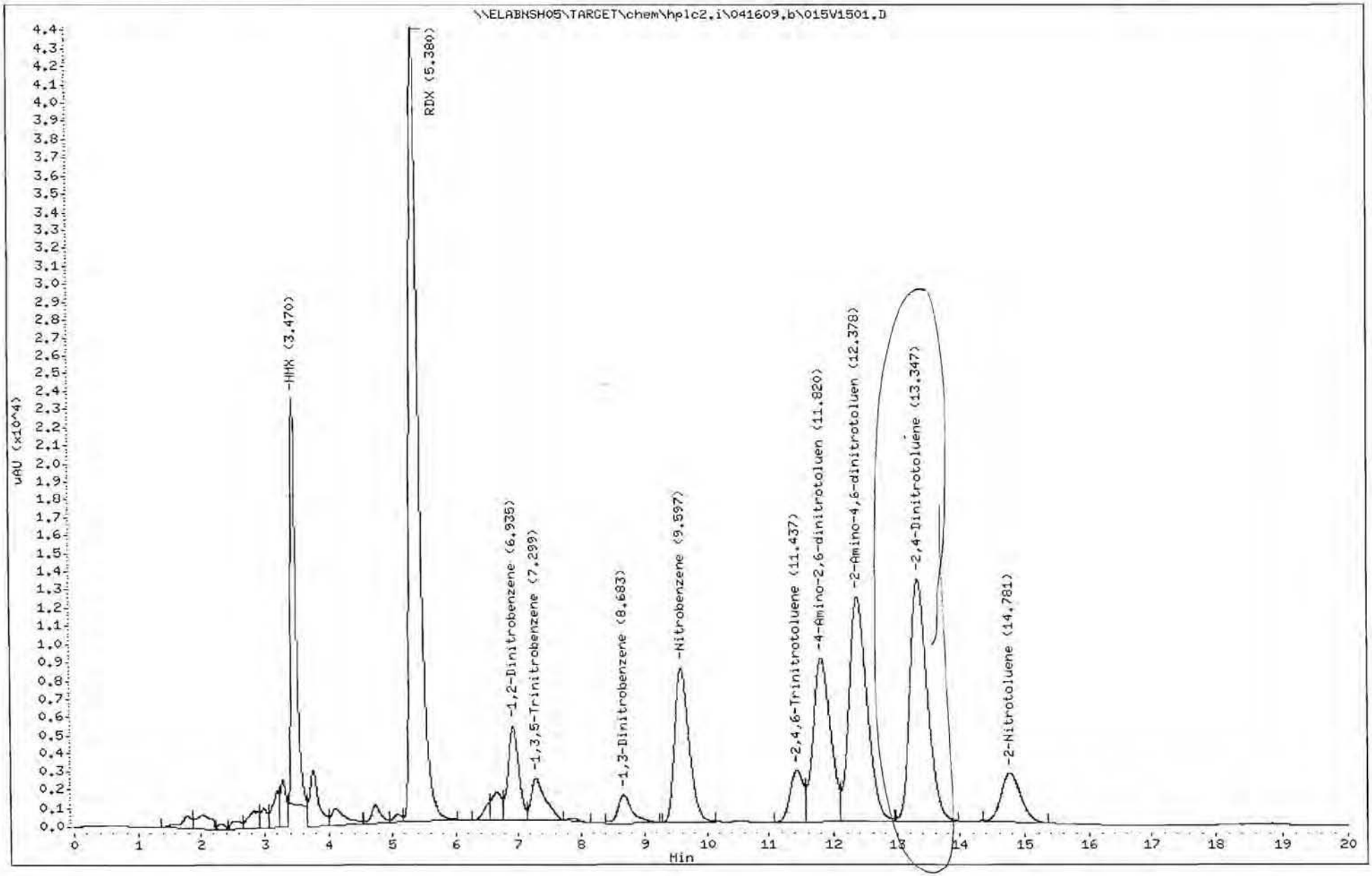
BM 04/28/09

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/ml)	CONCENTRATIONS FINAL (ug/L)
1	HMX	3.470	3.453	0.017	22370	1103.95	8.332(M)
2	RDX	5.379	5.316	0.063	450393	3042.95	22.96
$ 32	1,2-Dinitrobenzene	6.935	6.838	0.097	60807	301.743	2.277
3	1,3,5-Trinitrobenzene	7.299	7.204	0.095	35765	102.074	0.7704(a)
4	1,3-Dinitrobenzene	8.682	8.558	0.124	23877	49.2767	0.3719(a)
6	Nitrobenzene	9.597	9.580	0.017	134371	382.954	2.890
9	2,4,6-Trinitrotoluene	11.436	11.245	0.191	2808	130.729	0.9866
10	4-Amino-2,6-dinitrotoluene	11.820	11.555	0.265	9084	671.290	5.066
11	2-Amino-4,6-dinitrotoluene	12.378	12.128	0.250	243774	715.539	5.400
13	2,4-Dinitrotoluene	13.346	13.101	0.245	13424	533.744	4.028
14	2-Nitrotoluene	14.780	15.256	-0.476	56666	273.533	2.064

Flag as NJ, OT

Data File: \\ELABNSH05\TARGET\chem\hplc2.i\041609.b\015V1501.D
Date : 16-APR-2009 23:35
Client ID: YS06-GW05BP-0309
Sample Info: 0903355-03
Volume Injected (uL): 100.0
Column phase: Ultra C-18

Instrument: hplc2.i
Operator: GM
Column diameter: 4.60



Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\133V3301.D
Report Date: 28-Apr-2009 14:02

Confirmation JLS 4.28.09

Empirical Laboratories, LLC

Data file : \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\133V3301.D
Lab Smp Id: 0903355-03 Client Smp ID: YS06-GW05BP-0309
Inj Date : 24-APR-2009 11:23
Operator : GM Inst ID: hplc1.i
Smp Info : 0903355-03
Misc Info : com.e03355;1060;8;9C31005;ug/L;;explh2o.sub;31-Mar-2009
Comment :
Method : \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\8330PIILOW.m
Meth Date : 28-Apr-2009 10:32 jjames Quant Type: ESTD
Cal Date : 16-APR-2009 15:58 Cal File: 103V0301.D
Als bottle: 133
Dil Factor: 1.00000
Integrator: Falcon Compound Sublist: ch2wp.sub
Target Version: 4.04
Processing Host: TARGET07_VM

Concentration Formula: Amt * DF * Uf*Vt*100/(Amt*Vi*(Solids/100))

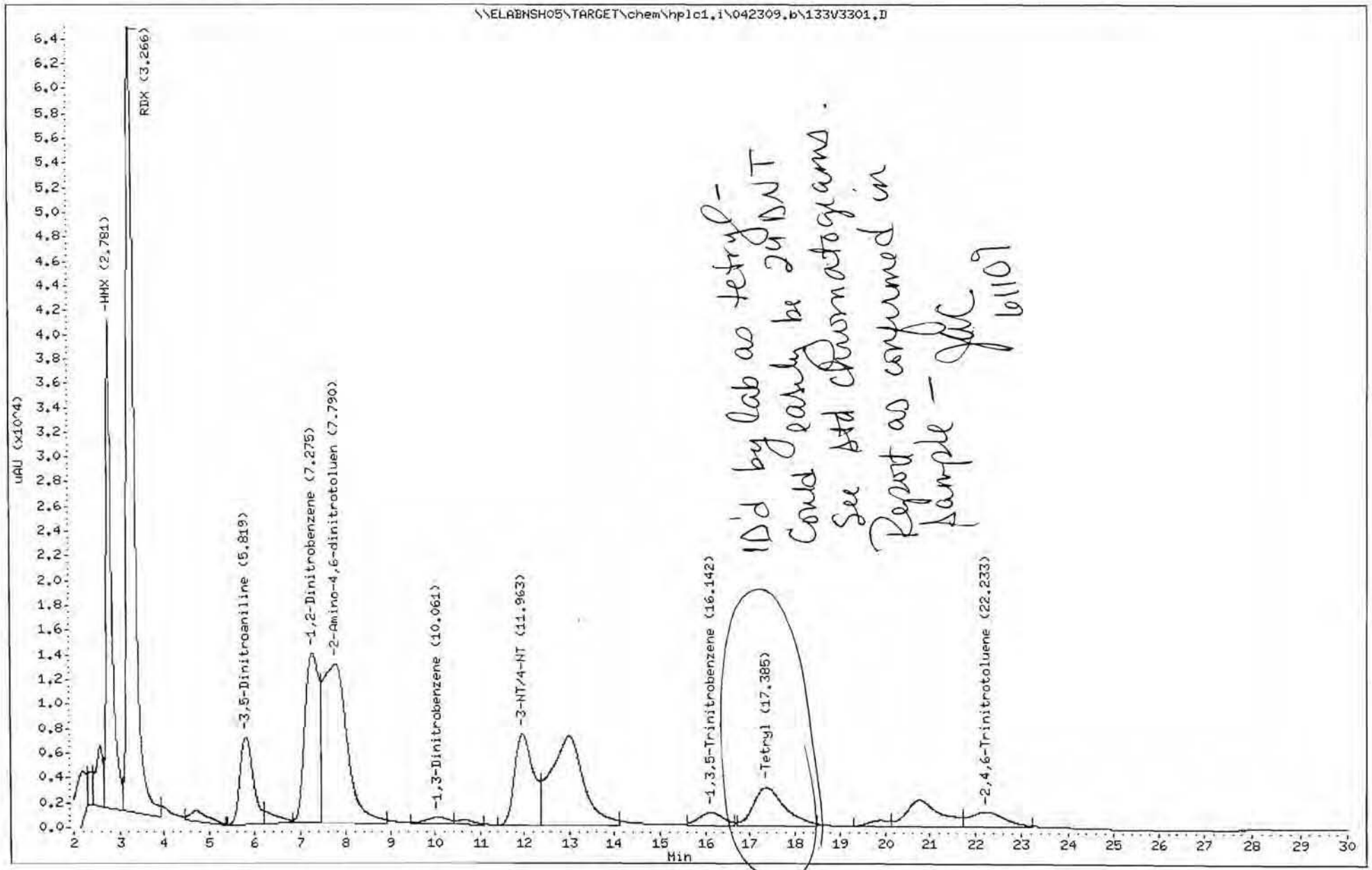
Name	Value	Description
DF	1.000	Dilution Factor
Uf	1.000	Unit Correction Factor
Vt	8.000	Extract Volume (ml)
Amt	1060.000	Sample Volume (ml)
Vi	100.000	Injection Volume (ul)
Solids	100.000	%Solids

BM 4/28/09

	Compounds	RT	EXP RT	DLT RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ng/ml)	CONCENTRATIONS FINAL (ug/L)
1	HMX	2.780	2.800	-0.020	39665	1258.59	9.499
2	RDX	3.266	3.295	-0.029	768432	2796.95	21.11
4	3,5-Dinitroaniline	5.819	5.921	-0.102	143202	330.724	2.496(M)
$ 7	1,2-Dinitrobenzene	7.275	7.343	-0.068	297959	865.632	6.533(R)
8	2-Amino-4,6-dinitrotoluene	7.789	7.721	0.068	12910	850.139	6.416
9	1,3-Dinitrobenzene	10.060	10.366	-0.306	578	69.3443	0.5234(aM)
12	3-NT/4-NT	11.963	12.414	-0.451	219282	905.213	6.832
15	1,3,5-Trinitrobenzene	16.142	16.506	-0.364	44292	104.334	0.7874(a)
17	Tetryl	17.384	18.331	-0.947	153408	363.476	2.743
18	2,4,6-Trinitrotoluene	22.233	22.912	-0.679	1200	195.538	1.476(M)

Data File: \\ELABNSH05\TARGET\chem\hplc1.i\042309.b\133V3301.D
Date : 24-APR-2009 11:23
Client ID: YS06-GW05BP-0309
Sample Info: 0903355-03
Volume Injected (uL): 100.0
Column phase: Pinnacle2 Biphenyl

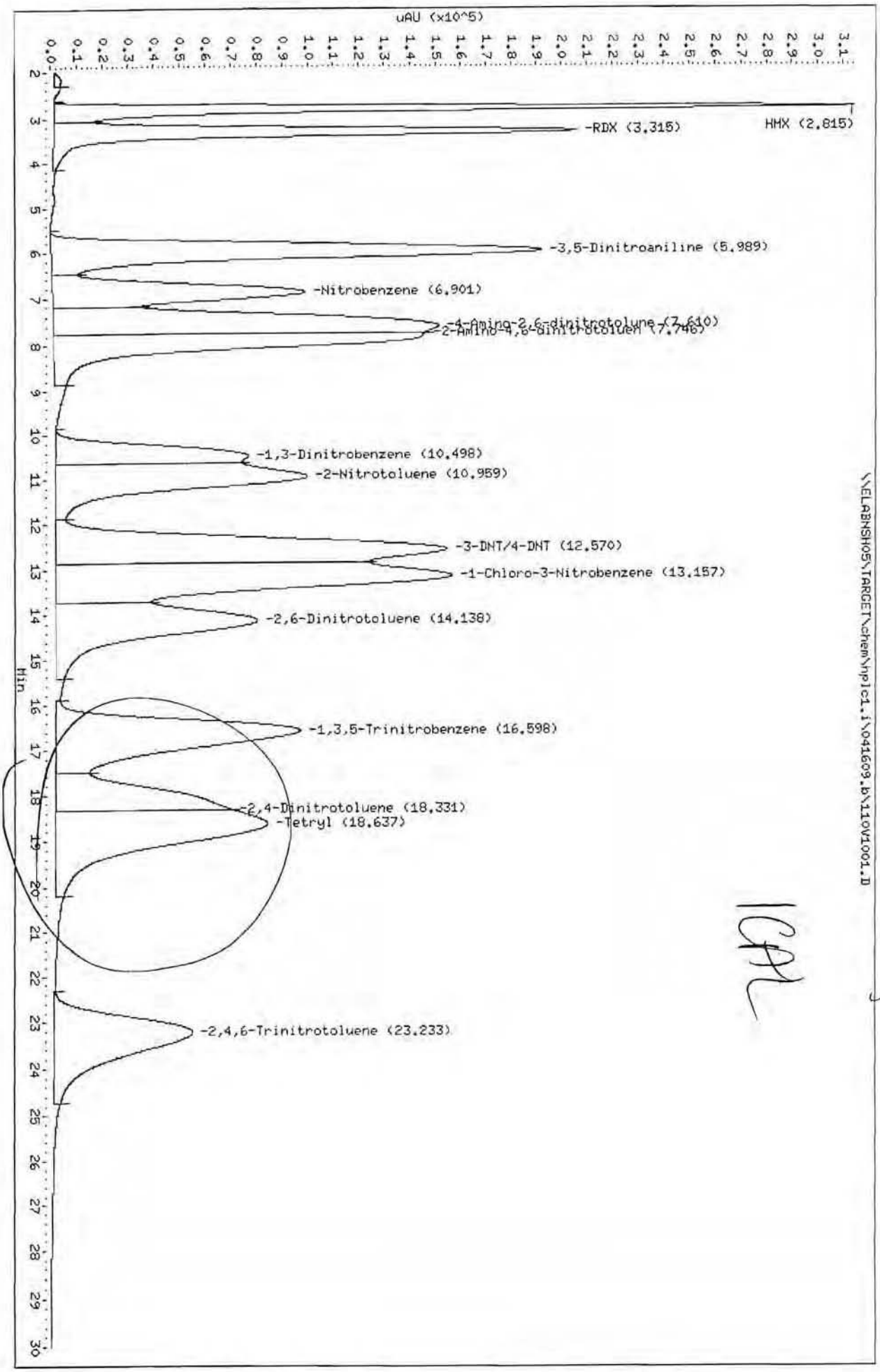
Instrument: hplc1.i
Operator: GM
Column diameter: 4.60



ID'd by lab as tetryl - could easily be 2,4 DNT See ATA chromatograms. Report as contained in sample - JLC 6/11/09

115

100



B.C 4.21.09

ICAL

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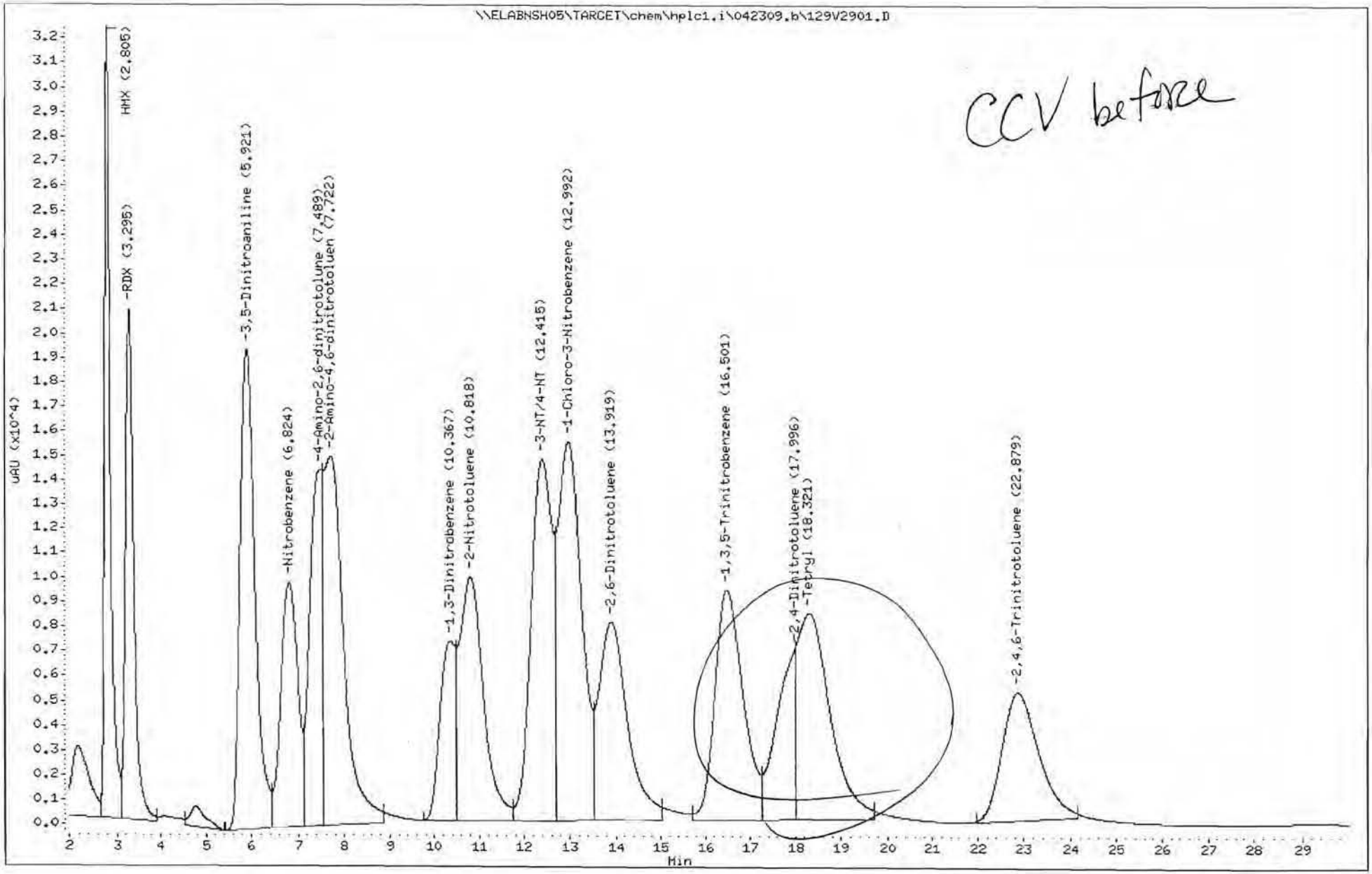
Date : 24-APR-2009 08:55
Client ID:
Sample Info: Expl+ 1.0ppm

Instrument: hplc1.i

Operator: GH
Column diameter: 4.60

Column phase: Pinnacle2 Biphenyl

616
102



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Date : 24-APR-2009 18:19
Client ID:
Sample Info: Expl+ 1.0ppm

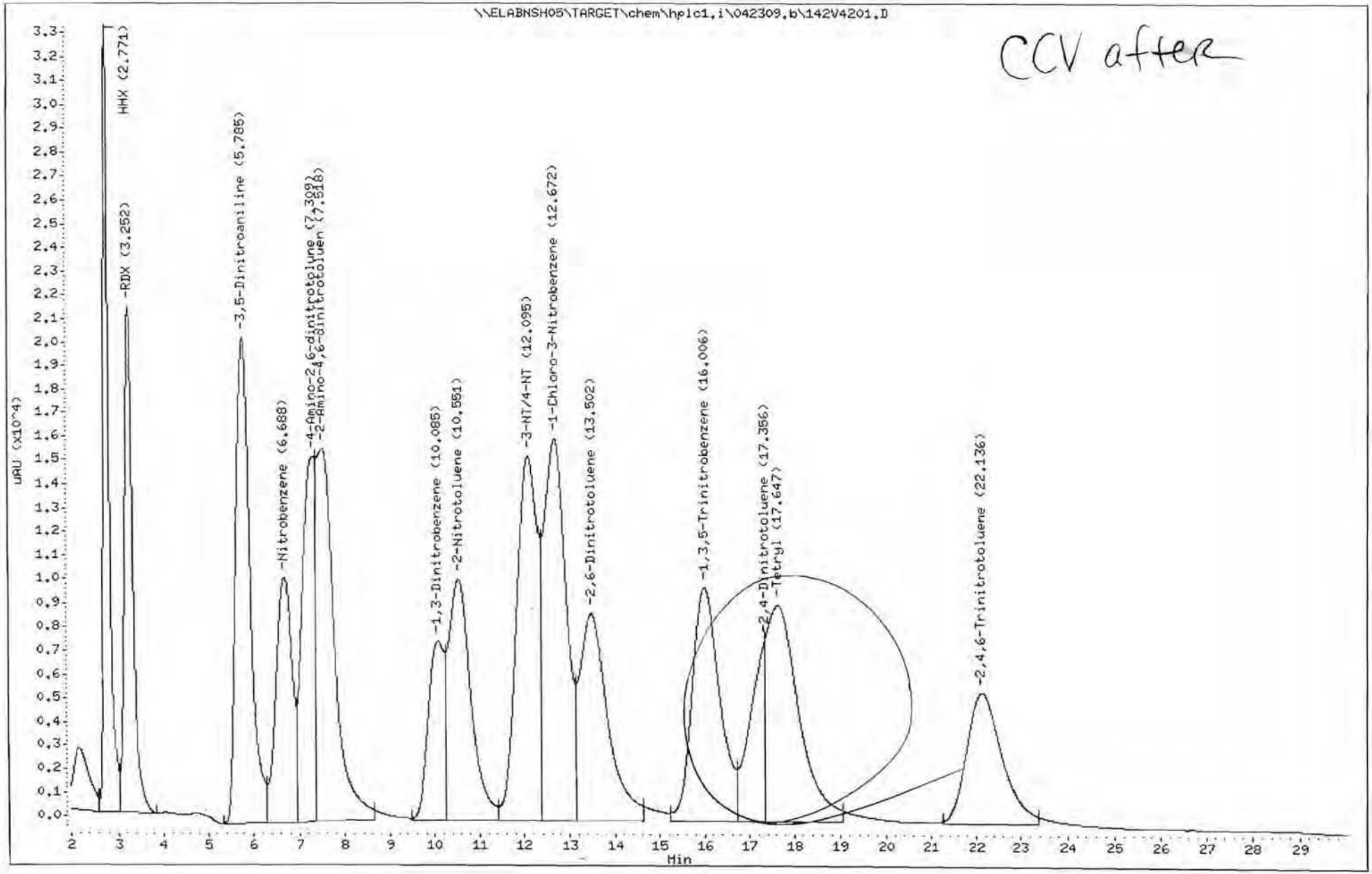
Column phase: Pinnacle2 Biphenyl

Instrument: hplc1.i

Operator: CH
Column diameter: 4.60

Obr 4/15/09

621 103



FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903354-01 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.55	6.86	7.70	1.086	
	2	16.45	15.86	17.16	0.3389	104.9 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW06A-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903354-03 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D	
1,3,5-Trinitrobenzene	1	7.55	6.86	7.70	0.08811		
	2	16.61	15.86	17.16	0.3310	115.9	J
2,4,6-Trinitrotoluene	1	11.40	10.78	12.04	0.3004		
	2	23.07	21.81	24.01	0.9597	104.6	J
2-Amino-4,6-dinitrotoluen	1	12.34	11.58	13.10	0.4438		
	2	8.07	7.31	8.13	4.202	161.8	J
	1						
	2						
	1						
	2						
	1						
	2						
	1						
	2						
	1						
	2						

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903354-04 Date(s) Analyzed: 04/15/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.19	3.75	0.7335	
	2	2.83	2.49	3.11	0.2178	108.4 J
RDX	1	5.51	5.00	5.72	0.3817	
	2	3.21	3.09	3.51	0.2140	56.3 J
1,3,5-Trinitrobenzene	1	7.56	6.86	7.70	1.014	
	2	16.55	15.86	17.16	0.3138	105.5 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW07-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-01 Date(s) Analyzed: 04/16/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.45	3.17	3.73	0.1887	
	2	2.79	2.49	3.11	0.1023	59.4 J
RDX	1	5.38	4.96	5.68	0.3189	
	2	3.28	3.09	3.51	0.2105	41.0 J
1,3,5-Trinitrobenzene	1	7.44	6.78	7.62	1.469	
	2	16.29	15.86	17.16	0.3608	121.1 J
2,4-Dinitrotoluene	1	13.34	12.46	13.74	6.408	
	2	17.58	17.43	18.59	5.198	20.8
2,4,6-Trinitrotoluene	1	11.43	10.62	11.88	0.1147	
	2	22.33	21.81	24.01	0.6557	140.4 J
2-Amino-4,6-dinitrotoluen	1	12.37	11.37	12.89	0.2425	
	2	7.94	7.31	8.13	4.474	179.4 J
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW05B-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-02 Date(s) Analyzed: 04/16/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.17	3.73	7.159	
	2	2.78	2.49	3.11	8.122	12.6
RDX	1	5.38	4.96	5.68	19.87	
	2	3.27	3.09	3.51	17.57	12.3
1,3-Dinitrobenzene	1	8.66	8.06	9.06	0.3350	
	2	10.12	10.03	10.71	0.2440	31.4
1,3,5-Trinitrobenzene	1	7.29	6.78	7.62	0.9811	
	2	16.19	15.86	17.16	0.8635	12.8
2,4-Dinitrotoluene	1	13.34	12.46	13.74	2.652	
	2	17.46	17.43	18.59	2.136	21.6
2,4,6-Trinitrotoluene	1	11.43	10.62	11.88	1.051	
	2	22.31	21.81	24.01	1.609	42.0 J
2-Amino-4,6-dinitrotoluen	1	12.37	11.37	12.89	5.358	
	2	7.82	7.31	8.13	6.836	24.2
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW0
5BP-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-03 Date(s) Analyzed: 04/16/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.17	3.73	8.332	
	2	2.78	2.49	3.11	9.499	13.1
RDX	1	5.38	4.96	5.68	22.96	
	2	3.27	3.09	3.51	21.11	8.4
1,3-Dinitrobenzene	1	8.68	8.06	9.06	0.3719	
	2	10.06	10.03	10.71	0.5234	33.8
1,3,5-Trinitrobenzene	1	7.30	6.78	7.62	0.7704	
	2	16.14	15.86	17.16	0.7874	2.2
2,4,6-Trinitrotoluene	1	11.44	10.62	11.88	0.9866	
	2	22.23	21.81	24.01	1.476	39.7
2-Amino-4,6-dinitrotoluen	1	12.38	11.37	12.89	5.400	
	2	7.79	7.31	8.13	6.416	17.2
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-032609

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0903355-04 Date(s) Analyzed: 04/17/09 04/24/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.42	3.17	3.73	0.2219	
	2	2.80	2.49	3.11	0.1807	20.5
1,3,5-Trinitrobenzene	1	7.57	6.78	7.62	0.6446	
	2	16.03	15.86	17.16	0.2304	94.7 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW04-0309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-02 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.28	6.78	7.62	1.600	
	2	15.92	15.38	16.68	3.752	80.4 J
2,4-Dinitrotoluene	1	13.17	12.46	13.74	36.11	
	2	17.07	16.79	17.95	27.43	27.3
2-Amino-4,6-dinitrotoluen	1	12.04	11.37	12.89	8266	
	2	7.27	7.10	7.92	2949	94.8 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-033109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-03 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4,6-Trinitrotoluene	1	11.18	10.48	11.74	0.1040	
	2	22.13	21.03	23.23	0.8055	154.3 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-07 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.33	4.96	5.68	0.2786	
	2	3.20	3.05	3.47	0.2230	22.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW13A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-07 Date(s) Analyzed: 04/24/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
PETN	1	20.38	19.50	20.90	1.981	11%
	2	9.73	9.60	11.28	~~16.08~~ 2.2	156.1 J
	1					JAC 4/10/09
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW12A-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-08 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
2,4,6-Trinitrotoluene	1	11.27	10.62	11.88	0.2086	
	2	21.89	21.03	23.23	0.1273	48.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-FB0
1-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-09 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.23	4.96	5.68	0.1315	
	2	3.25	3.05	3.47	0.3962	100.3 J
1,3,5-Trinitrobenzene	1	7.51	6.78	7.62	0.6773	
	2	15.41	15.38	16.68	0.1501	127.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
2-040109

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904043-11 Date(s) Analyzed: 04/18/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	4.97	4.96	5.68	0.5256	
	2	3.24	3.05	3.47	0.9438	56.9 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW12-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-01 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.47	3.15	3.71	0.4662	
	2	2.79	2.47	3.09	0.4993	6.8
RDX	1	5.31	4.91	5.63	0.9092	
	2	3.27	3.05	3.47	0.6570	32.2
1,3,5-Trinitrobenzene	1	7.43	6.72	7.56	0.1069	
	2	15.96	15.38	16.68	0.2255	71.4 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW12P-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-02 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
HMX	1	3.46	3.15	3.71	0.5172	
	2	2.79	2.47	3.09	0.4051	24.3
RDX	1	5.30	4.91	5.63	0.8965	
	2	3.27	3.05	3.47	0.6747	28.2
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-040209

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-03 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.43	4.91	5.63	0.1487	
	2	3.23	3.05	3.47	0.4446	99.7 J
Tetryl	1	9.16	8.68	9.70	0.09394	
	2	17.93	16.29	18.99	0.2060	74.7 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-GW09B-0409

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

Lab Sample ID: 0904058-04 Date(s) Analyzed: 04/19/09 04/26/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
1,3,5-Trinitrobenzene	1	7.42	6.72	7.56	0.1124	
	2	15.88	15.38	16.68	0.3077	93.0 J
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

EXPL

FORM 10
EXPL IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

CLIENT SAMPLE NO.

YS06-EB0
1-040309

Lab Name: EMPIRICAL LABS Contract: COMPUCHEM

Lab Code: Case No.: SAS No.: NA SDG No.: SDG002

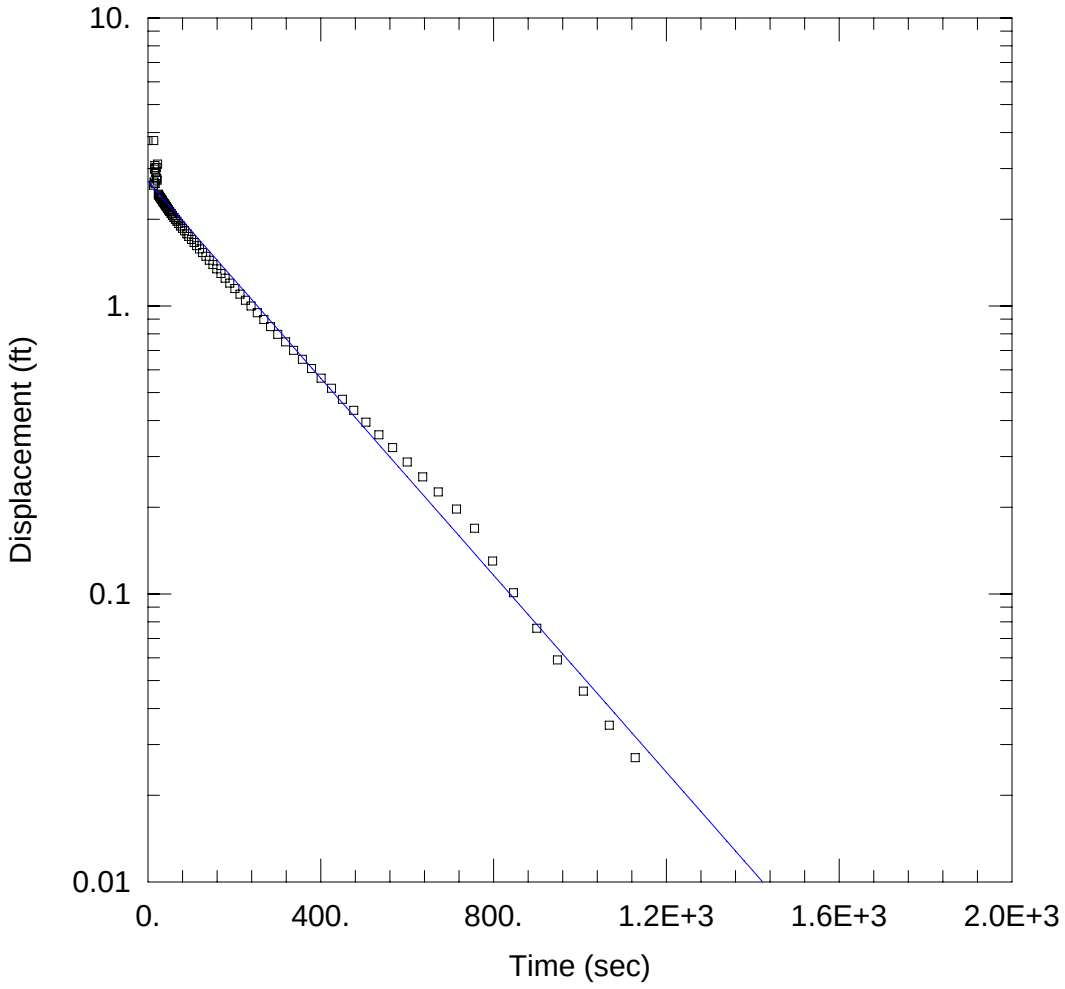
Lab Sample ID: 0904058-05 Date(s) Analyzed: 04/19/09 04/27/09

Instrument ID (1): HPLC2 Instrument ID (2): HPLC1

Column(1): ULTRA C-18 ID: 4.60(mm) Column(2): PINNACLE2 BIPHENYL ID: 4.60(mm)

ANALYTE	COL	RT	RT WINDOW FROM	RT WINDOW TO	CONCENTRATION	%D
RDX	1	5.44	4.91	5.63	0.1113	
	2	3.23	3.05	3.47	0.3155	95.7
1,3,5-Trinitrobenzene	1	7.42	6.72	7.56	0.2210	
	2	15.75	15.38	16.68	0.2182	1.3
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					
	1					
	2					

Appendix F
Slug Test Data



1GW05A FALLING HEAD TEST 1

Data Set: C:\...\1GW05AR1.aqt
Date: 09/16/09 Time: 11:38:42

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

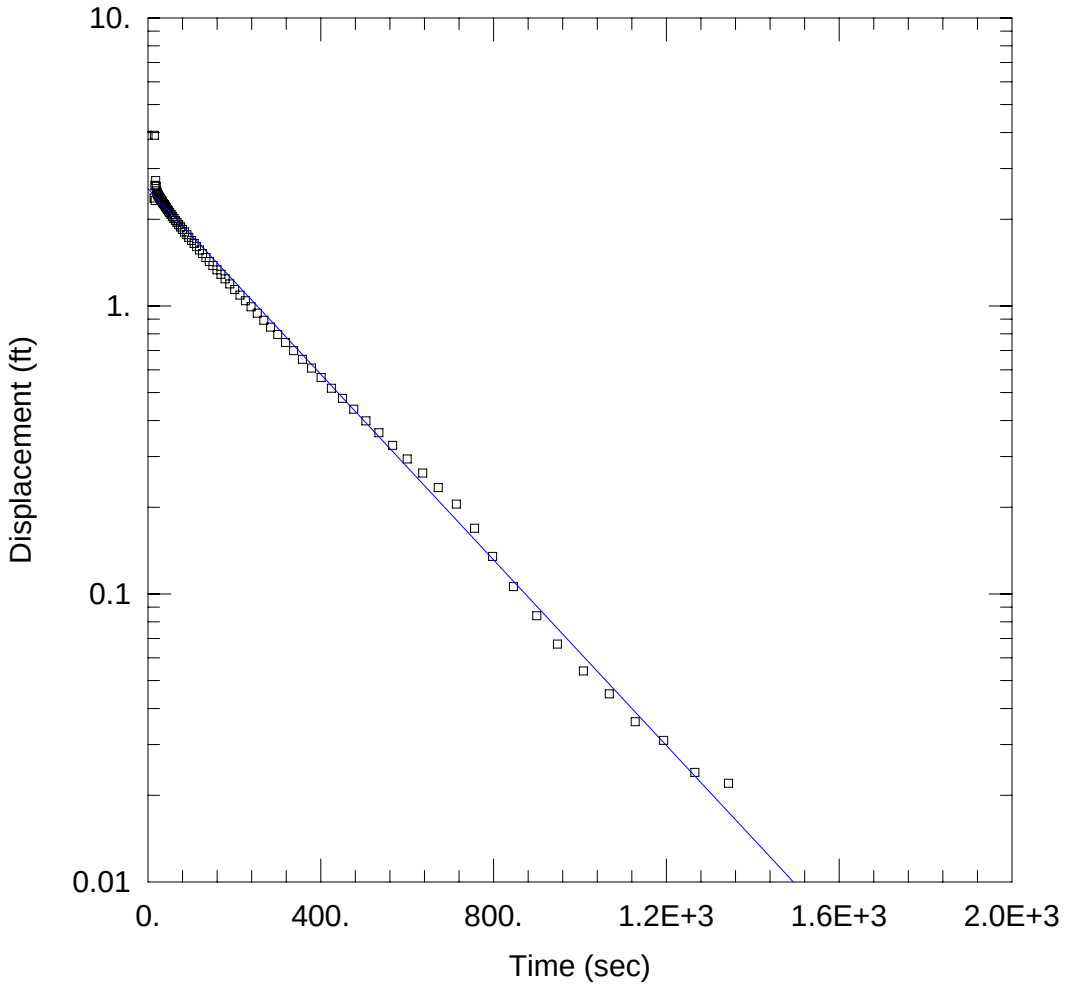
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (1GW05A)

Initial Displacement: 3.752 ft
Total Well Penetration Depth: 40. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 39.52 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.4269 ft/day
y0 = 2.708 ft



1GW05A FALLING HEAD TEST 2

Data Set: C:\...\1GW05AR2.aqt
Date: 09/16/09 Time: 11:46:11

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

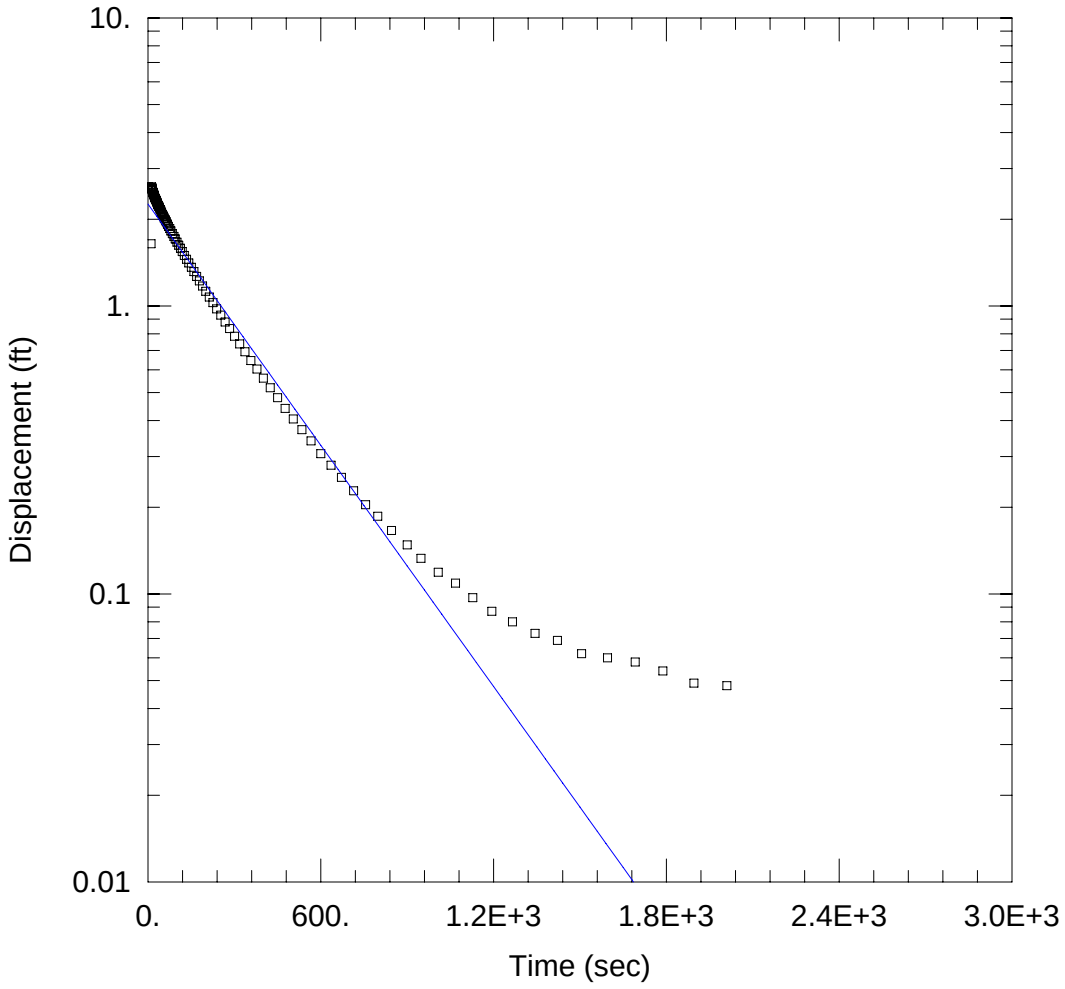
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (1GW05A)

Initial Displacement: 3.913 ft
Total Well Penetration Depth: 40. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 39.52 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.4023 ft/day
y0 = 2.551 ft



1GW05A RISING HEAD TEST 1

Data Set: C:\...\1GW05AF1.aqt
Date: 09/16/09 Time: 11:49:38

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

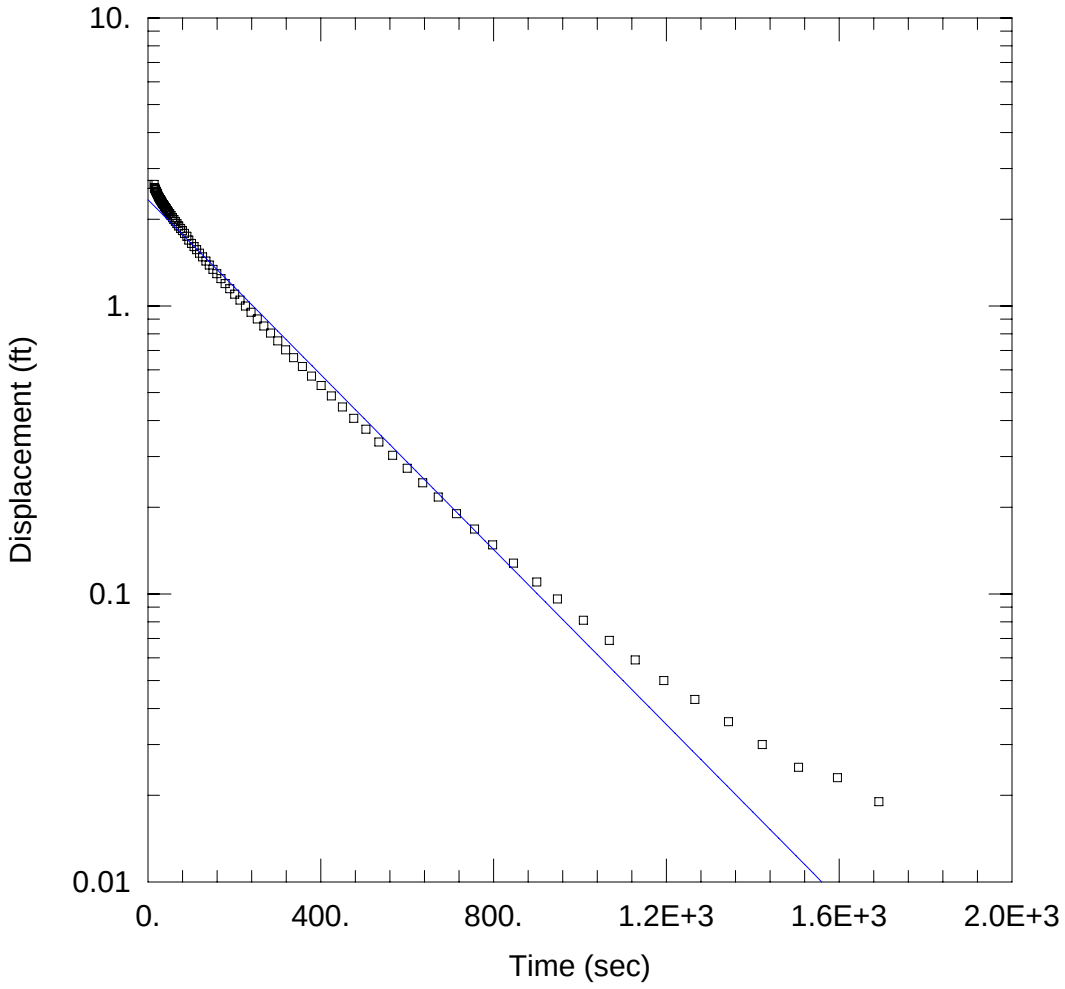
Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (1GW05A)

Initial Displacement: 2.592 ft
Static Water Column Height: 39.52 ft
Total Well Penetration Depth: 40. ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.3486 ft/day
y0 = 2.258 ft



1GW05A RISING HEAD TEST 2

Data Set: C:\...\1GW05AR2.aqt
Date: 09/16/09 Time: 11:56:47

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

Saturated Thickness: 40. ft Anisotropy Ratio (Kz/Kr): 1.

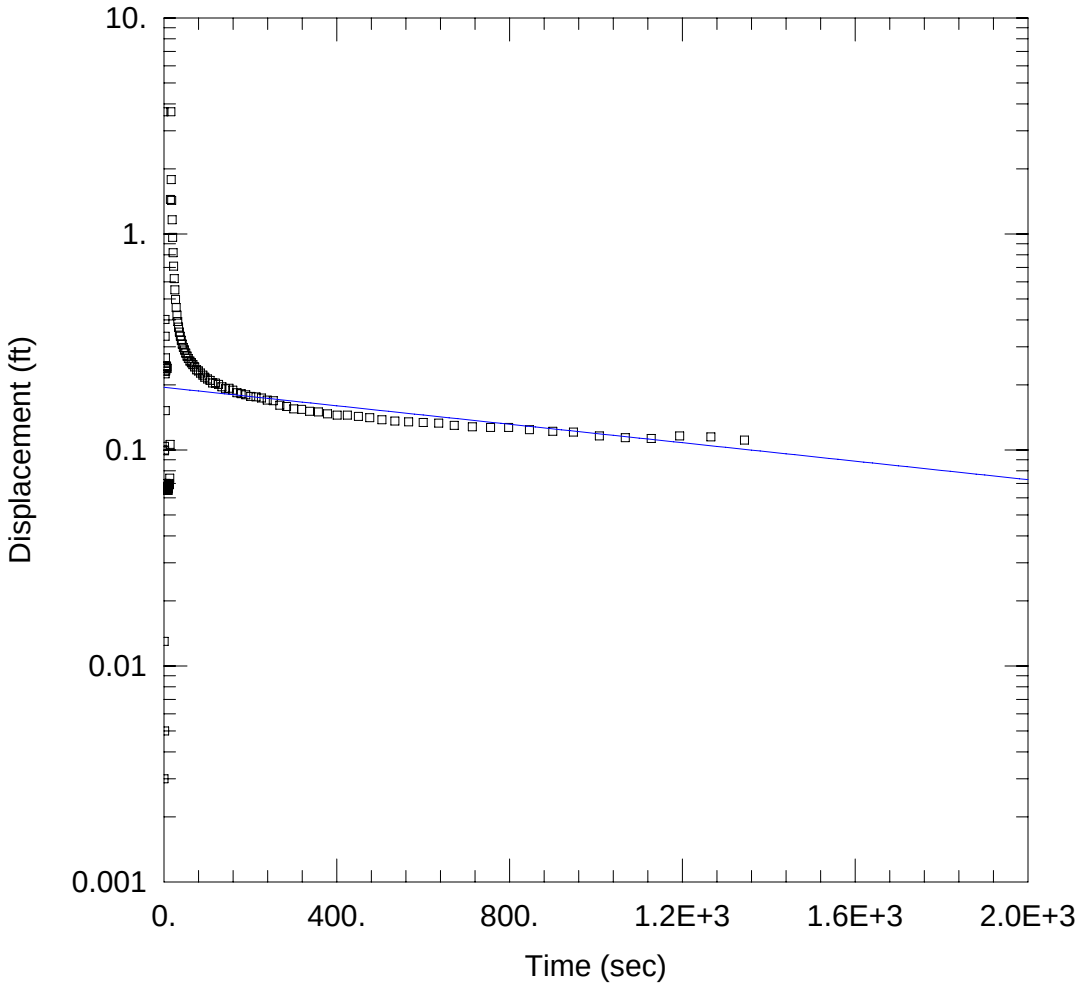
WELL DATA (1GW05A)

Initial Displacement: 2.641 ft Static Water Column Height: 39.52 ft
Total Well Penetration Depth: 40. ft Screen Length: 10. ft
Casing Radius: 0.0861 ft Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.3792 ft/day y0 = 2.337 ft



1GW18 FALLING HEAD TEST 1

Data Set: C:\...\1GW18F1.aqt
Date: 09/16/09 Time: 12:14:54

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

Saturated Thickness: 8. ft Anisotropy Ratio (Kz/Kr): 1.

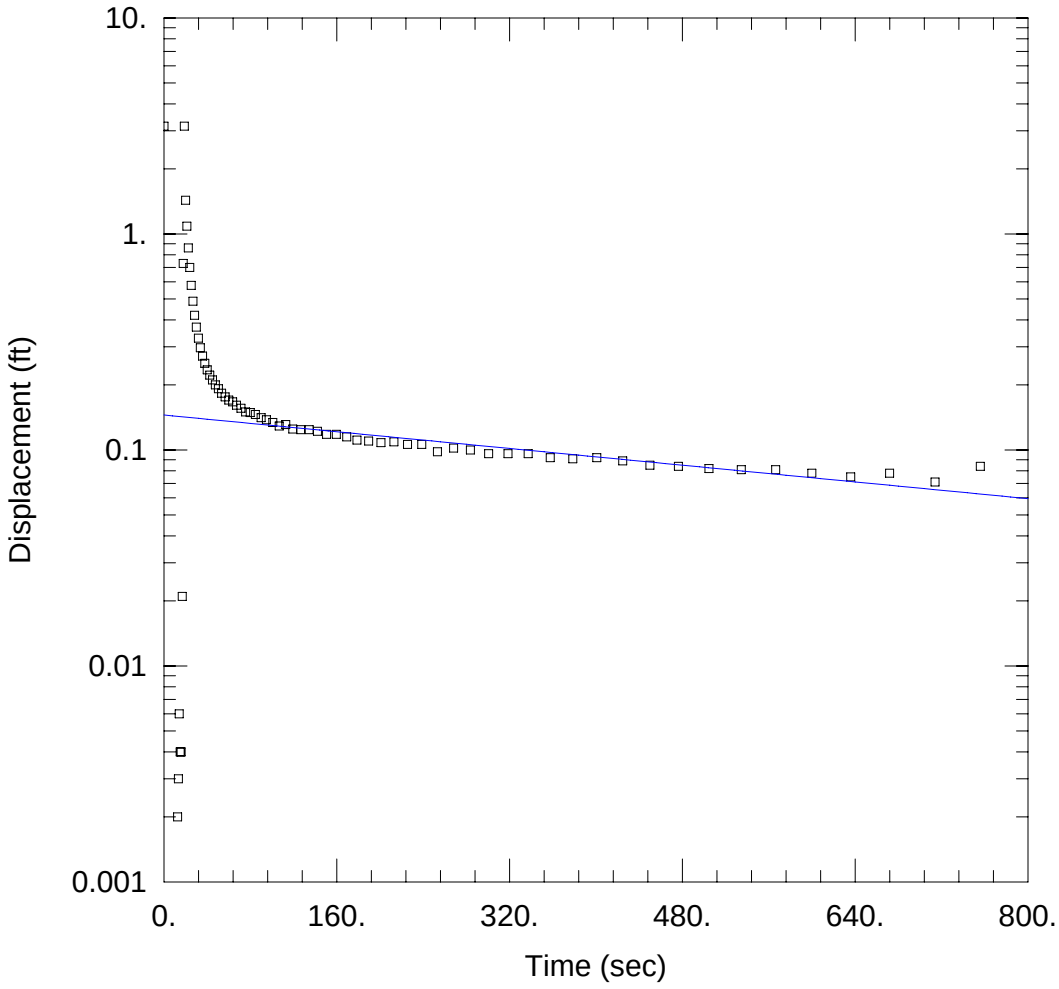
WELL DATA (1GW18)

Initial Displacement: 3.68 ft Static Water Column Height: 7.52 ft
Total Well Penetration Depth: 8. ft Screen Length: 10. ft
Casing Radius: 0.0861 ft Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.03829 ft/day y0 = 0.1949 ft



1GW18 FALLING HEAD TEST 2

Data Set: C:\...\1GW18F2.aqt
Date: 09/16/09 Time: 12:17:23

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

Saturated Thickness: 8. ft Anisotropy Ratio (Kz/Kr): 1.

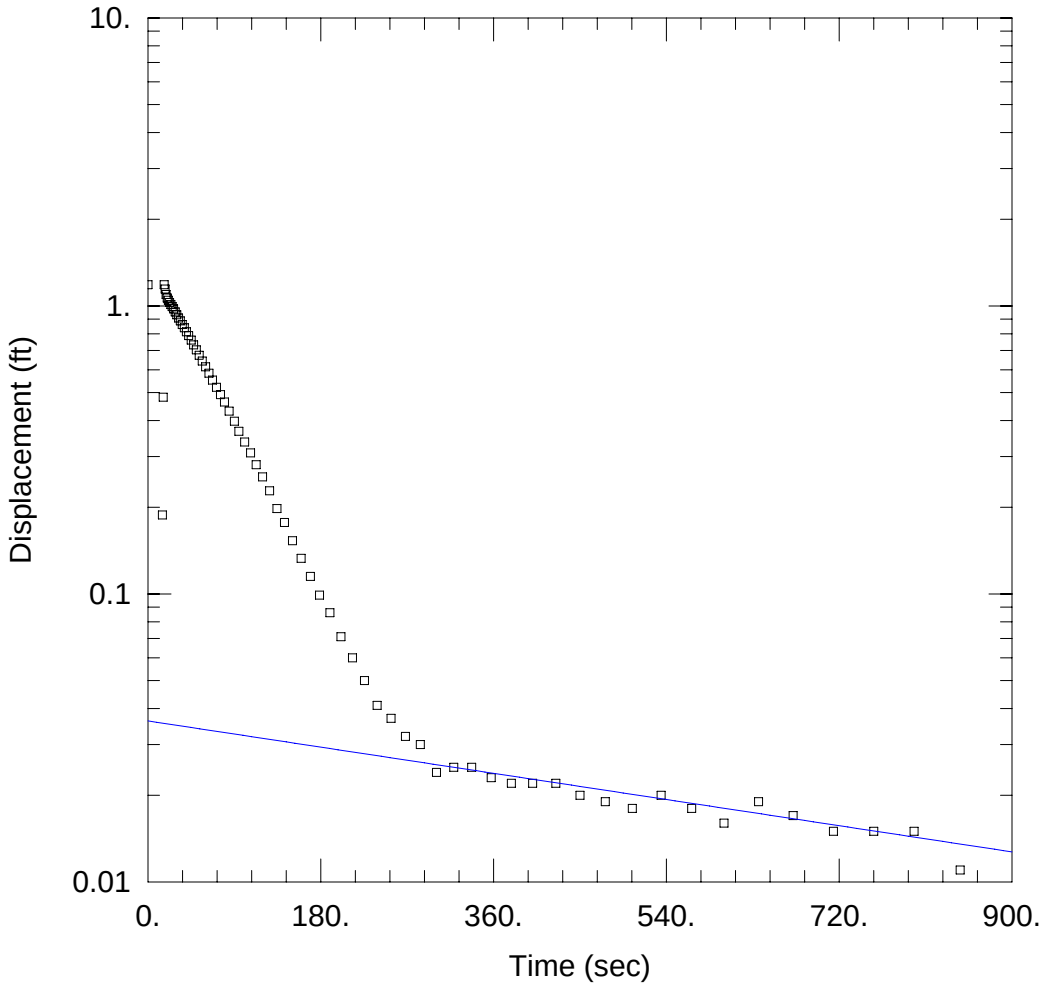
WELL DATA (1GW18)

Initial Displacement: 3.152 ft
Total Well Penetration Depth: 8. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 7.52 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0867 ft/day
y0 = 0.1451 ft



1GW18 RISING HEAD TEST 1

Data Set: C:\...\1GW18R1.aqt
Date: 09/16/09 Time: 12:20:38

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

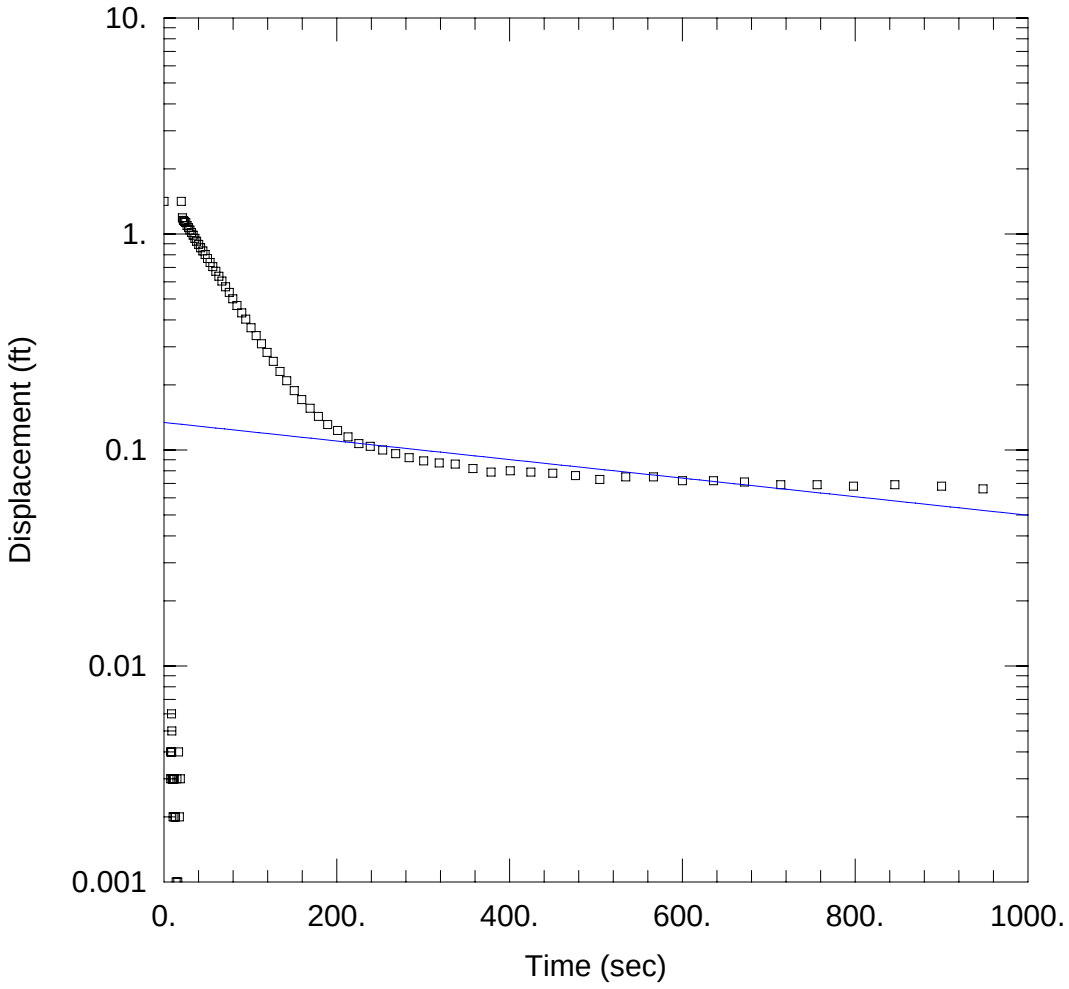
Saturated Thickness: 8. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (1GW18)

Initial Displacement: 1.185 ft
Total Well Penetration Depth: 8. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 7.52 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.0905 ft/day
y0 = 0.03622 ft



1GW18 RISING HEAD TEST 2

Data Set: C:\...\1GW18R2.aqt
Date: 09/16/09 Time: 12:21:45

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

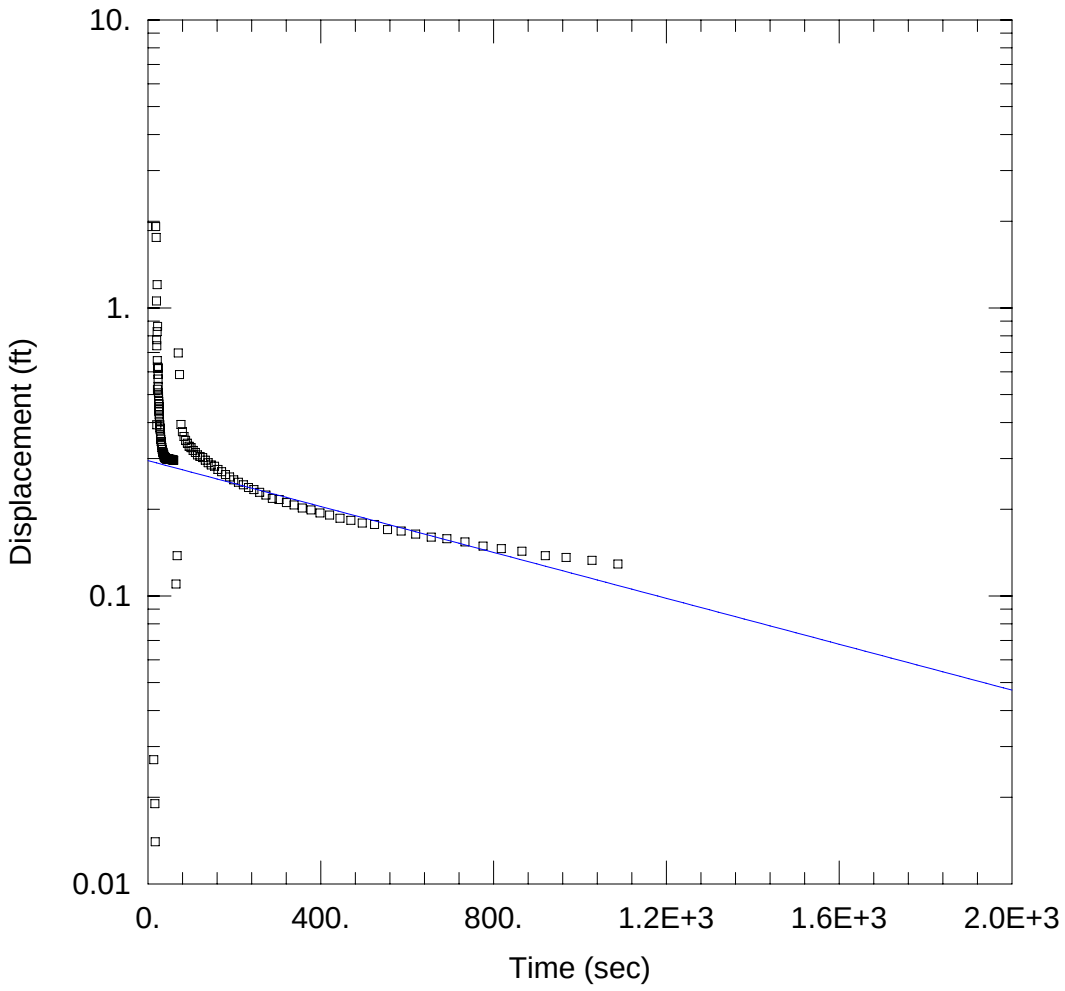
Saturated Thickness: 8. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (1GW18)

Initial Displacement: 1.416 ft
Total Well Penetration Depth: 8. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 7.52 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.07696 ft/day
y0 = 0.134 ft



3GW19 FALLING HEAD TEST 1

Data Set: C:\...\3GW19F1.aqt
Date: 09/16/09 Time: 09:32:11

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/3/09

AQUIFER DATA

Saturated Thickness: 12. ft Anisotropy Ratio (Kz/Kr): 1.

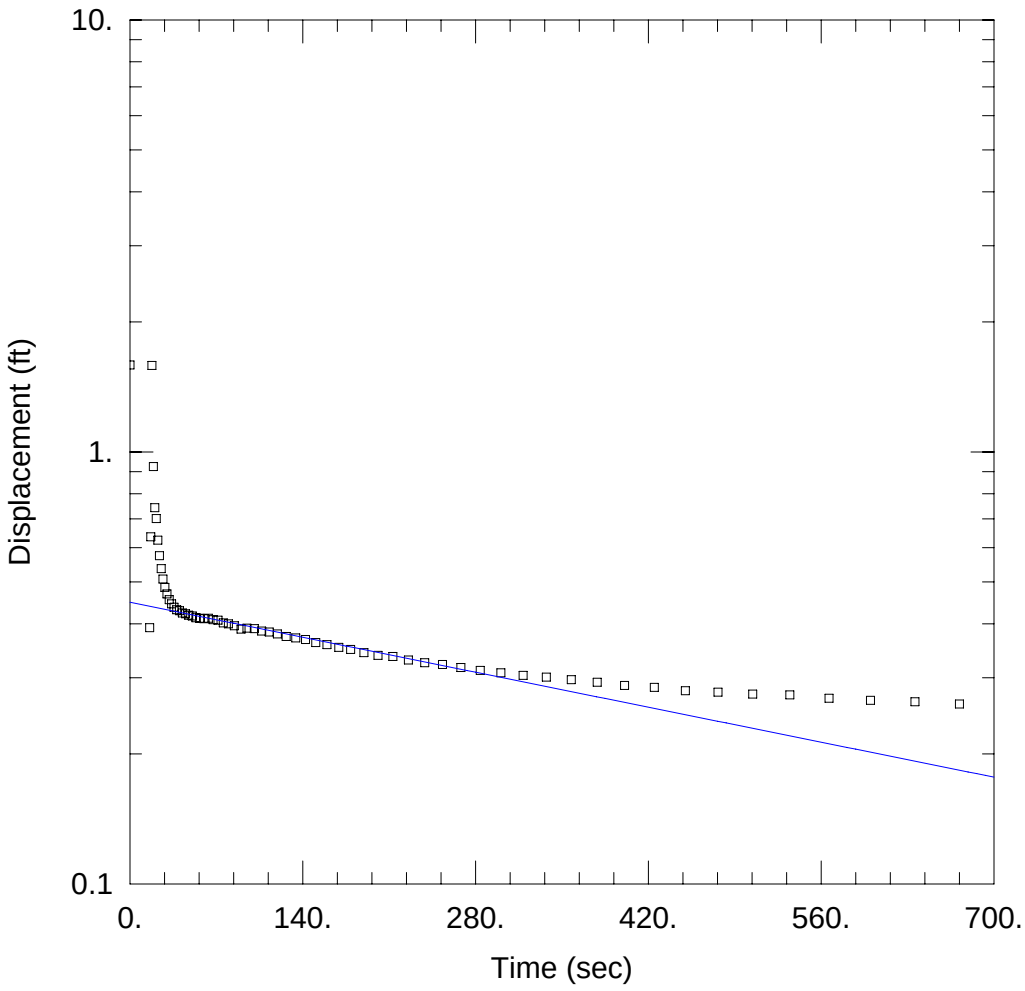
WELL DATA (3GW19)

Initial Displacement: 1.917 ft Static Water Column Height: 11.36 ft
Total Well Penetration Depth: 12. ft Screen Length: 15. ft
Casing Radius: 0.0861 ft Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.05417 ft/day y0 = 0.295 ft



3GW19 FALLING HEAD TEST 2

Data Set: C:\...\3GW19F2.aqt
Date: 09/16/09 Time: 09:36:23

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/3/09

AQUIFER DATA

Saturated Thickness: 12. ft Anisotropy Ratio (Kz/Kr): 1.

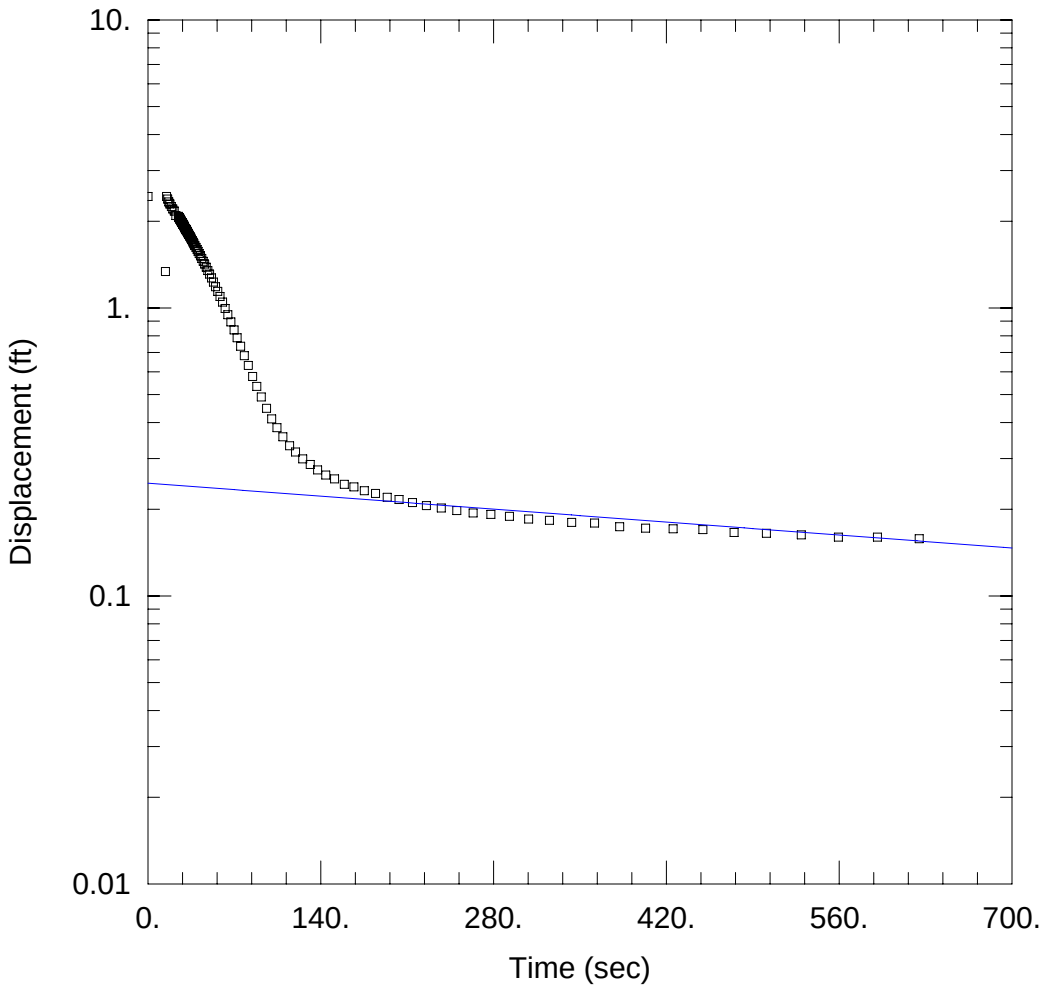
WELL DATA (3GW19)

Initial Displacement: 1.589 ft Static Water Column Height: 11.36 ft
Total Well Penetration Depth: 12. ft Screen Length: 15. ft
Casing Radius: 0.0861 ft Wellbore Radius: 0.3333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.07859 ft/day y0 = 0.4487 ft



3GW19 RISING HEAD TEST 1

Data Set: C:\...\3GW19R1.aqt
Date: 09/16/09 Time: 09:38:34

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/3/09

AQUIFER DATA

Saturated Thickness: 12. ft Anisotropy Ratio (Kz/Kr): 1.

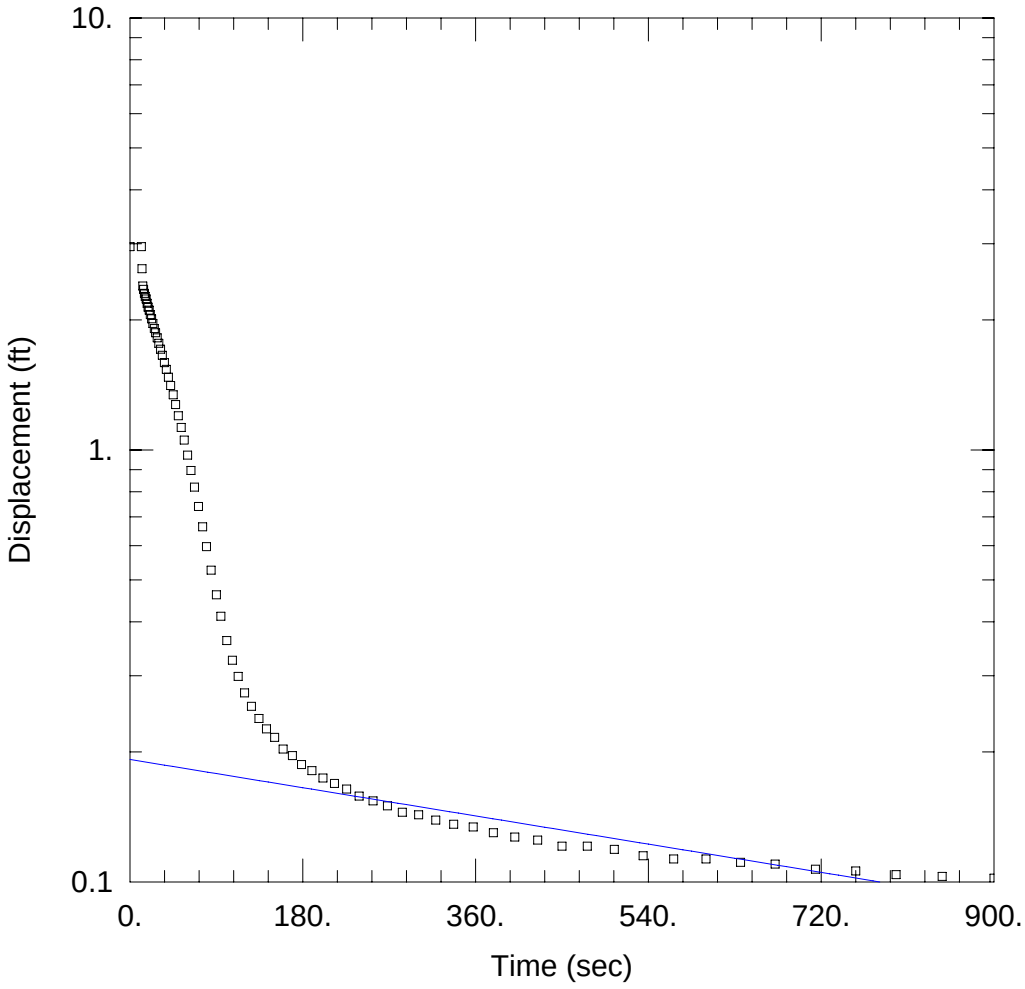
WELL DATA (3GW19)

Initial Displacement: 2.439 ft
Total Well Penetration Depth: 12. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 11.36 ft
Screen Length: 15. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 0.0437 ft/day
y0 = 0.2463 ft



3GW19 RISING HEAD TEST 2

Data Set: C:\...\3GW19R2.aqt
Date: 09/16/09 Time: 09:39:47

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/3/09

AQUIFER DATA

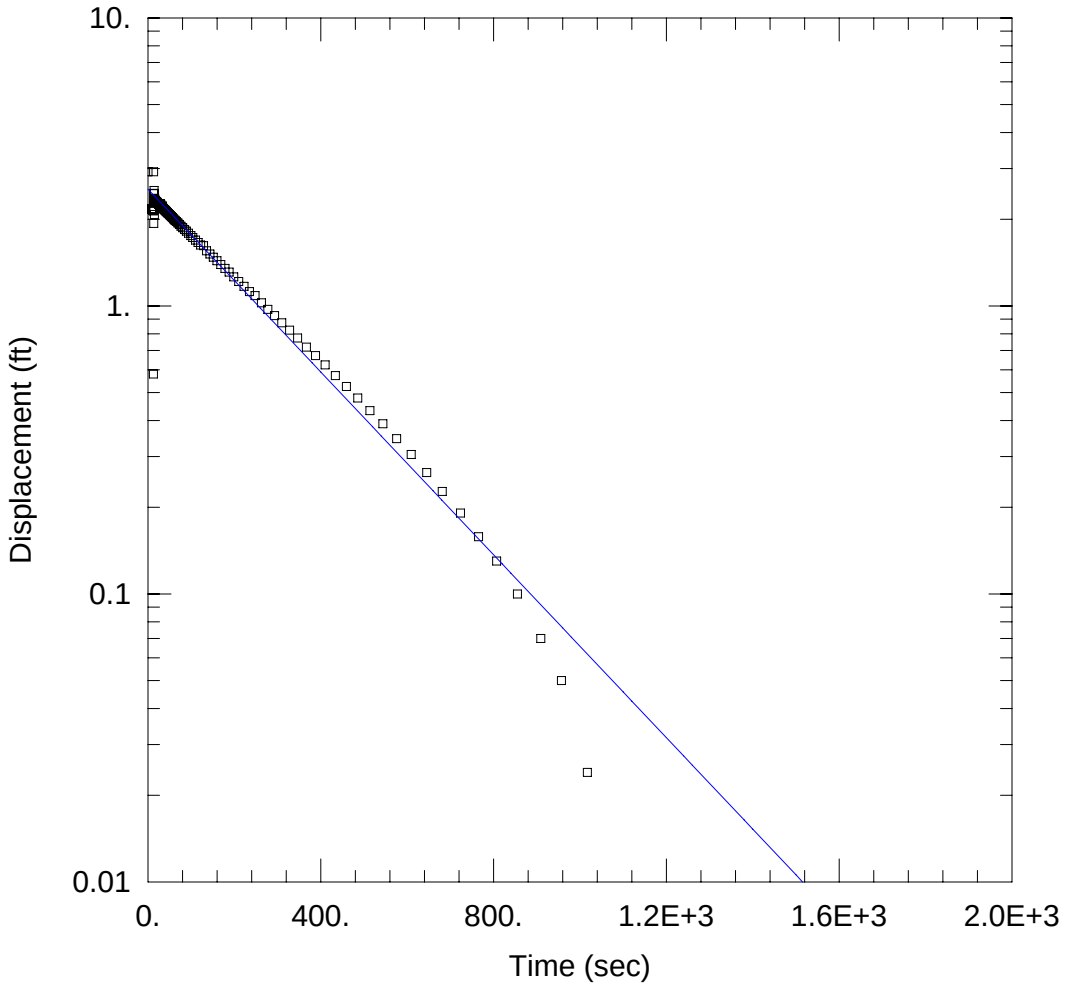
Saturated Thickness: 12. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (3GW19)

Initial Displacement: 2.956 ft
Total Well Penetration Depth: 12. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 11.36 ft
Screen Length: 15. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.04932 ft/day
y0 = 0.1921 ft



3GW20A FALLING HEAD TEST 1

Data Set: C:\...\3GW20AF1.aqt
Date: 09/16/09 Time: 09:33:14

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

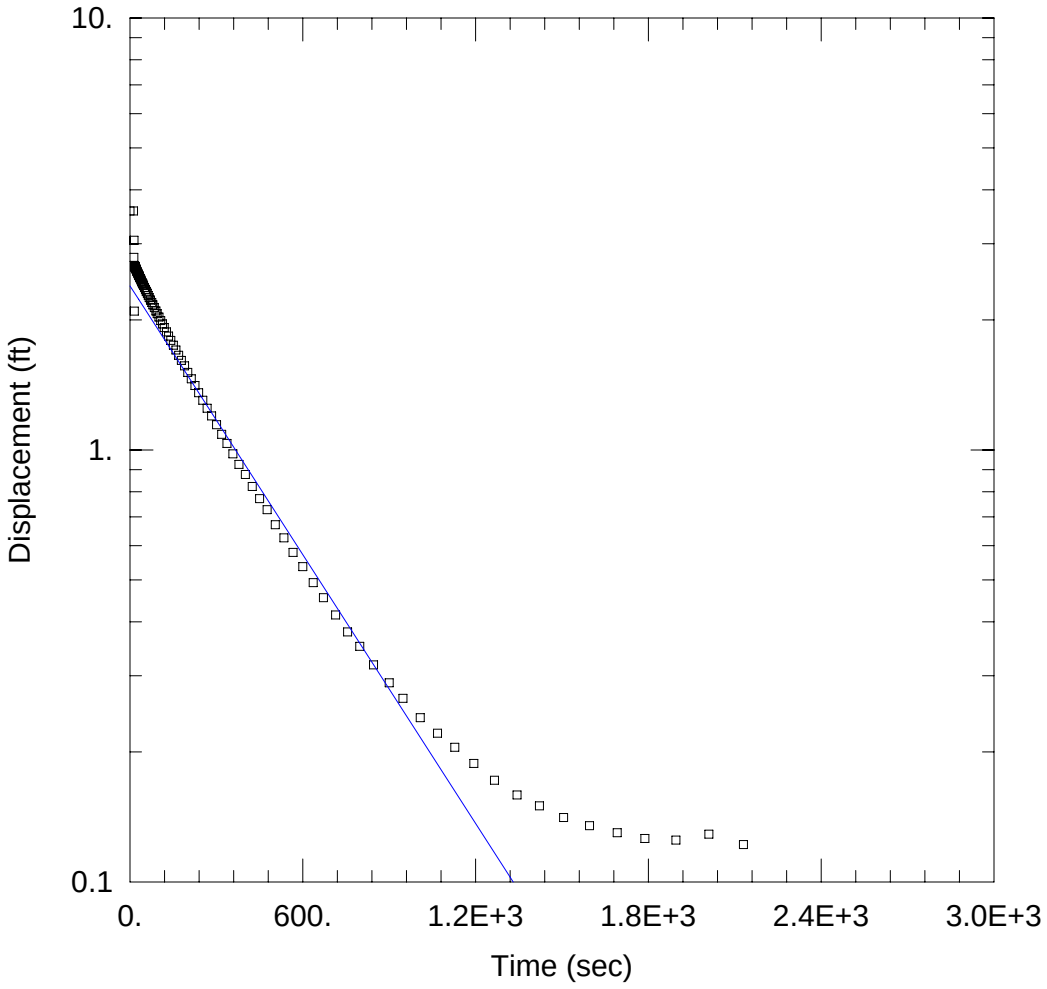
Saturated Thickness: 54. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (3GW20A)

Initial Displacement: 2.922 ft
Total Well Penetration Depth: 53.94 ft
Casing Radius: 0.0861 ft
Static Water Column Height: 53.94 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.4257 ft/day
y0 = 2.544 ft



3GW20A FALLING HEAD TEST 2

Data Set: C:\...\3GW20AF2.aqt
Date: 09/16/09 Time: 10:58:03

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

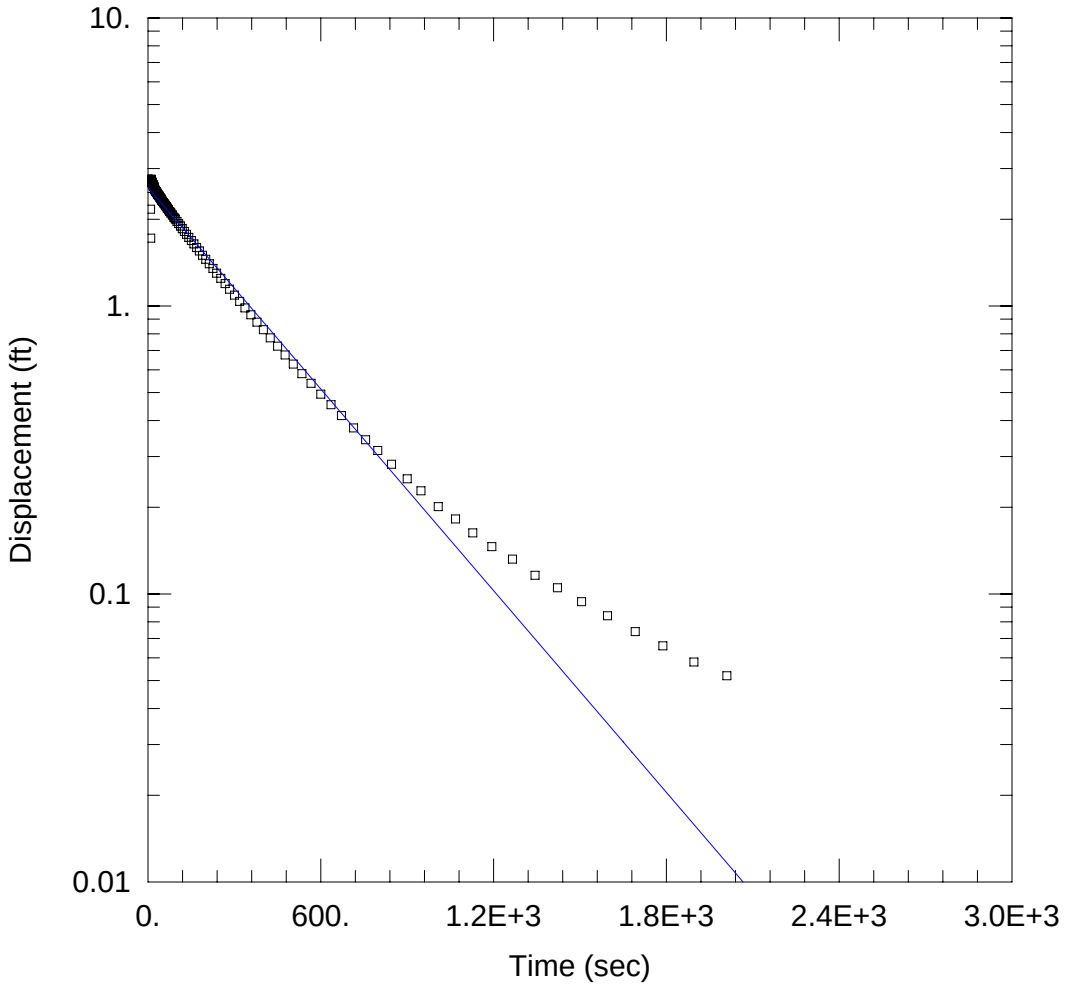
Saturated Thickness: 54. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (3GW20A)

Initial Displacement: 3.573 ft
Total Well Penetration Depth: 54. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 53.94 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.2713 ft/day
y0 = 2.397 ft



3GW20A RISING HEAD TEST 1

Data Set: C:\...\3GW20AR1.aqt
Date: 09/16/09 Time: 11:05:10

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

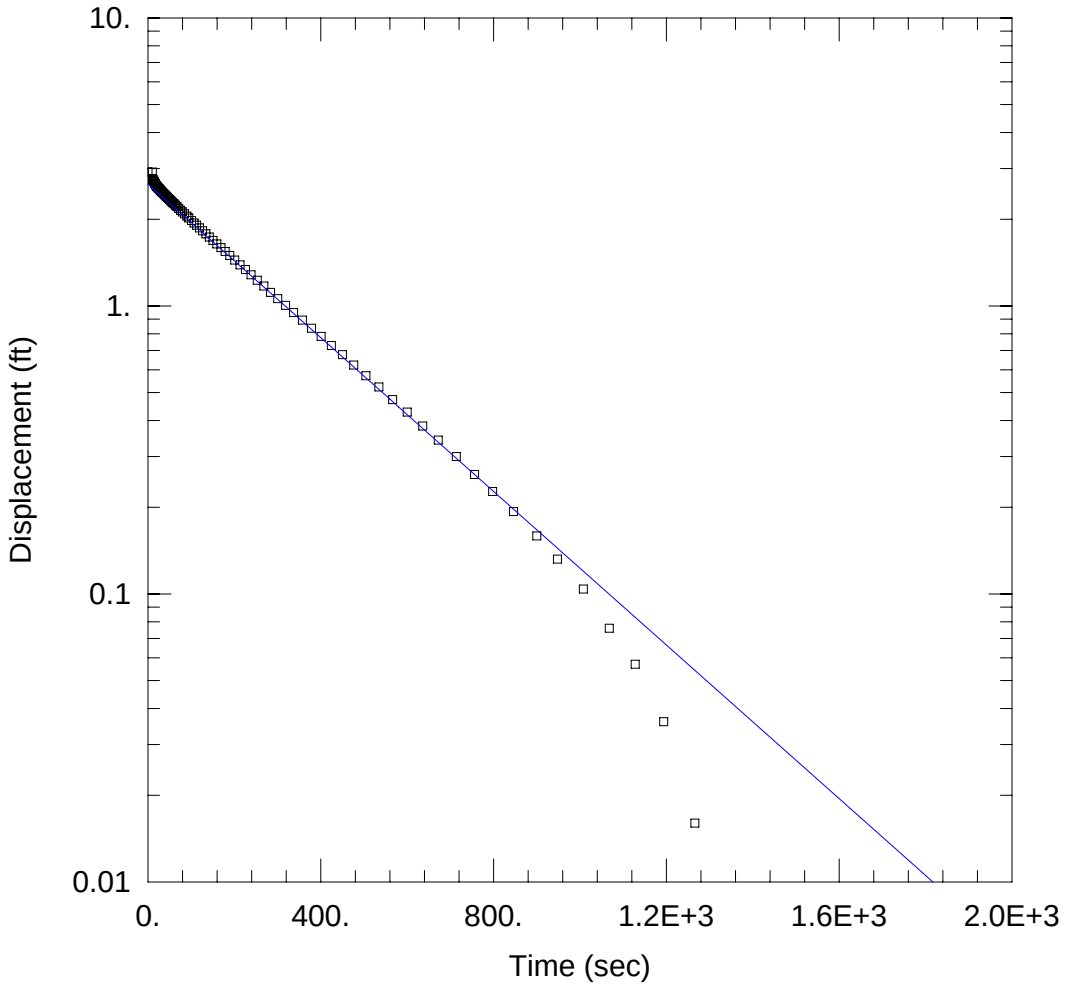
Saturated Thickness: 54. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (3GW20A)

Initial Displacement: 2.756 ft
Total Well Penetration Depth: 54. ft
Casing Radius: 0.0861 ft
Static Water Column Height: 53.94 ft
Screen Length: 10. ft
Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice
K = 0.3054 ft/day
y0 = 2.579 ft



3GW20A RISING HEAD TEST 2

Data Set: C:\...\3GW20AR2.aqt
Date: 09/16/09 Time: 11:13:14

PROJECT INFORMATION

Client: Navy CLEAN
Location: Yorktown
Test Date: 9/10/09

AQUIFER DATA

Saturated Thickness: 54. ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (3GW20A)

Initial Displacement: 2.914 ft Static Water Column Height: 53.94 ft
Total Well Penetration Depth: 54. ft Screen Length: 10. ft
Casing Radius: 0.0861 ft Wellbore Radius: 0.333 ft

SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

K = 0.349 ft/day y0 = 2.648 ft