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OCTOBER 2012 SECOND QUARTERLY GROUNDWATER MONITORING REPORT FOR TRUCK FILL STAND REVISION 1 NAS KEY WEST FL

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Revision 1

October 2012 (Second) Quarterly Groundwater Monitoring Report Truck Fill Stand

Naval Air Station Key West
Boca Chica Key, Florida

Naval Facilities Engineering Command

Prepared for

Department of the Navy

Naval Facilities Engineering Command Southeast

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CTO-JM08

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Prepared by

CH2MHILL®

PROFESSIONAL CERTIFICATION

This Quarterly Groundwater Monitoring Report for the Truck Fill Stand located at the Naval Air Station Key West, Boca Chica Key, Florida, was prepared under the direction of a Florida-licensed professional geologist in accordance with Florida Rules and Regulations, as authorized by Chapters 492 or 471, Florida Statutes. The undersigned certifies that, to the best of his knowledge and belief, the technical data provided herein are complete and accurate, and comply with all requirements for such assessments.

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Executive Summary

Between October 23 and 26, 2012, CH2M HILL conducted a quarterly groundwater monitoring event at the Truck Fill Stand (TFS) site located at the Naval Air Station (NAS) Key West, Boca Chica Key, Florida. The work was performed under the Naval Facilities Engineering Command Southeast (NAVFAC SE) Multimedia Contract No. N62470-10-D-3009, Task Order JM08. The work consisted of performing a comprehensive round of well gauging and collecting groundwater samples from nine monitoring wells (TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-8D, TFS-MW-11, TFS-MW-12, TFS-MW-15, TFS-MW-16, and TFS-MW-17) for the analysis of Appendix IX volatile organic compounds (VOCs), Appendix IX semivolatile organic compounds (SVOCs), and total recoverable petroleum hydrocarbons (TRPH). In addition, two surface water samples (TFS-SW-03 and Seawater) and five monitoring wells (TFS-MW-04, TFS-MW-8D, TFS-MW-15, TFS-MW-16, and TFS-MW-17) were sampled for the water quality parameters chloride and sulfate (U.S. Environmental Protection Agency [EPA] Method 300.1); total dissolved solids (TDS) (A2540C); and salinity (A2520B).

Gauging data indicate groundwater elevations ranged from 1.69 feet above mean sea level (msl) to 2.57 feet above msl, and the direction of groundwater flow was radial from a groundwater high located at well TFS-MW-06. The average horizontal gradient of the water table aquifer was estimated to be 0.005 foot per foot (ft/ft) and the seepage velocity was calculated to be 0.30 foot per day (ft/day) or 109.5 feet per year (ft/year). Light non-aqueous phase liquid (LNAPL) was not detected in groundwater.

Groundwater quality results were as follows:

- Four of the five monitoring wells sampled in October 2012 had conductivity values greater than the range identified for potable freshwater, which indicates the TFS site groundwater to be more saline in nature. Deeper groundwater below 25 feet below ground surface (bgs) has higher conductivity than the shallower groundwater at the site.
- The four shallow groundwater samples from site monitoring wells had chloride concentrations between 144 milligrams per liter (mg/L) and 413 mg/L, and the deep well (TFS-MW-8D) had a chloride concentration of 6,100 mg/L. Chloride concentrations in three of the five monitoring wells indicate groundwater beneath the site is slightly to moderately saline in nature.
- Salinity concentrations in groundwater ranged between 1.08 parts per thousand (ppt) in shallow well TFS-MW17 to 10.7 ppt in the deep monitoring well TFS-MW-8D. The data shows that the salinity of groundwater increases with increasing depth.
- Sulfate concentrations in shallow groundwater ranged between 1.9 mg/L and 96.6 mg/L. These concentrations were below the groundwater cleanup target level (GCTL) criterion of 250 mg/L. However, deep well TFS-MW-8D had a sulfate concentration of 732 mg/L, indicating better connectivity to saline water at depths below 25 feet.
- TDS concentrations in groundwater were compared to the 500 mg/L value for freshwater. The shallow wells had TDS concentrations ranging between 786 mg/L and 1,290 mg/L and deep well (TFS-MW-8D) had a TDS value of 11,300 mg/L. All monitoring wells had TDS values greater than what is considered freshwater.

Based on comparison of the water quality data to U.S. Geological Survey (USGS) and Florida Department of Environmental Protection (FDEP) potable water quality standards, groundwater quality beneath at the TFS site is saline. The data also indicates salinity increases with depth, and groundwater beneath the site is not of freshwater water quality, and could not be used as a potable water source without desalination. Because groundwater is not suitable for potable use, CH2M HILL recommends the site groundwater protection criteria should be based upon “poor quality” GCTLs.

Test results from the nine monitoring wells were as follows:

- VOCs benzene, ethylbenzene, toluene, xylenes, and carbon disulfide were detected in monitoring well TFS-MW-15; benzene was the only VOC detected in well TFS-MW-04; carbon disulfide was the only VOC detected in well TFS-MW-17. All concentrations were below their respective “poor quality” GCTLs. No VOCs were detected in the remaining six monitoring wells.
- Thirteen SVOCs were detected in groundwater. SVOCs were detected in monitoring wells TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-11, TFS-MW-15, and TFS-MW-17. All concentrations were below their respective “poor quality” GCTLs.
- SVOCs were not detected in wells TFS-MW-8D, TFS-MW-12, and TFS-MW-16.
- TRPH was detected eight of the nine monitoring wells sampled at concentrations ranging from 310J micrograms per liter (µg/L) (well TFS-MW-12) to 24,300 µg/L (well TFS-MW-15). The GCTL for TRPH of 50,000 µg/L was not exceeded based upon the “poor quality” criterion. TRPH was not detected in well TFS-MW-16.
- Overall, the water quality parameters measured during well purging and sampling indicate that conditions are favorable for the biodegradation of hydrocarbons to occur.

Based upon the groundwater sampling for VOCs, SVOCs, and TRPH collected during the site assessment addendum (April 2012), the first quarter monitoring event (July 2012), and the October 2012 monitoring event, the data demonstrate that the “poor quality” GCTLs have been met for three consecutive groundwater sampling events. Therefore, in accordance with the requirements of Chapter 62-770.690(8)(g) of the Florida Administrative Code, only two consecutive sampling events are required to demonstrate compliance at sites remediated through natural attenuation processes. Therefore, CH2M HILL recommends:

- Consideration of no further action (NFA) for groundwater
- Discontinuing groundwater monitoring at the TFS site
- Completion of an ecological risk assessment to evaluate the potential risk to ecological receptors in the wetland area to the west of the TFS
- Preparation of a site rehabilitation completion report (SRCR) for groundwater documenting the rationale and formal request for NFA
- Plugging and abandoning of the existing groundwater monitoring wells

Contents

Executive Summary **ES-1**

Acronyms and Abbreviations ..... **iii**

1 Introduction **1-1**
1.1 Site Description 1-1
1.2 Site History 1-3

2 Field Activities **2-1**
2.1 Field Activity Summary 2-1
2.2 Groundwater Level Measurements and Sampling 2-1
2.3 Investigation-Derived Waste 2-4

3 Investigation Findings **3-1**
3.1 Hydrogeology 3-1
3.1.1 Groundwater 3-1
3.2 Field Parameters 3-3
3.2.1 Temperature 3-3
3.2.2 Specific Conductance 3-3
3.2.3 Dissolved Oxygen 3-3
3.2.4 Oxidation-Reduction Potential 3-3
3.2.5 pH 3-3
3.3 Sample Results 3-7
3.3.1 Groundwater 3-10

4 Conclusions and Recommendations **4-1**
4.1 Conclusions 4-1
4.1.1 Hydrogeology 4-1
4.1.2 Groundwater 4-1
4.2 Recommendations 4-2

5 References **5-1**

Tables

2-1 Field Activity Summary 2-1
2-2 Water Level Elevation Data 2-4
3-1 Historical Calculated Vertical Hydraulic Gradients 3-1
3-2 Field Parameters 3-5
3-3 Groundwater Quality Data Summary 3-8
3-4 Water Quality Types and Site Data Comparison 3-9
3-5 Groundwater Analytical Data Summary 3-11

Figures

1-1 Site Location Map 1-2
2-1 Monitoring Well Locations 2-3
3-1 Potentiometric Surface Map (October 2012) 3-2
3-2 Compounds Detected in Groundwater 3-13

Appendixes

A Well Purge and Sample Logs
B Water IDW Non-Hazardous Waste Manifest
C Data Validation Summary and Laboratory Data

Acronyms and Abbreviations

°C	degrees Celsius
µg/L	microgram per liter
AFVR	aggressive fluid vapor recovery
AST	aboveground storage tank
BBL	Blasland, Bouck, & Lee, Inc.
BCTF	Boca Chica Tank Farm
bgs	below ground surface
BTOC	below top of casing
CO_2	carbon dioxide
DO	dissolved oxygen
EPA	U.S. Environmental Protection Agency
F.A.C.	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
FL PRO	Florida Petroleum Residual Organic
ft	foot/feet
ft/day	feet per day
ft/ft	foot per foot
ft/year	feet per year
GCTL	Groundwater Cleanup Target Level
IDW	investigation-derived waste
IRA	interim remedial action
JP-5	jet propulsion fuel no. 5
LNAPL	light non-aqueous phase liquid
mg/L	milligrams per liter
MNA	monitored natural attenuation
msl	mean sea level
mS/cm	milliSiemens per centimeter
mV	millivolts
NA	not available
NAS	Naval Air Station
NAVFAC SE	Naval Facilities Engineering Command Southeast
NFA	no further action
NM	not measured

NTU	nephelometric turbidity unit
OES	Omega Environmental Services, Inc.
ORP	oxidation-reduction potential
OVA	organic vapor analyzer
PAH	polynuclear aromatic hydrocarbon
POL	petroleum, oils, and lubricants
ppt	parts per thousand
QA	quality assurance
QC	quality control
SAR	Site Assessment Report
SQAG	Sediment Quality Assessment Guidelines
SRCR	site rehabilitation completion report
SSAR	Supplemental Site Assessment Report
SVOC	semivolatile organic compound
SWCTL	Surface Water Cleanup Target Level
TDS	total dissolved solids
TFS	Truck Fill Stand
TPH	total petroleum hydrocarbon
TRPH	total recoverable petroleum hydrocarbon
TtNUS	Tetra Tech NUS, Inc.
USGS	U.S. Geological Survey
UST	underground storage tank
V	velocity
VOC	volatile organic compound

SECTION 1

Introduction

CH2M HILL, Inc. has been contracted by Naval Facilities Engineering Command Southeast (NAVFAC SE), to conduct quarterly groundwater monitoring activities and prepare quarterly groundwater monitoring reports under Multimedia Contract No. N62470-10-D-3009, Contract Task Order JM08. The purpose of this quarterly report is to document the field activities, results, conclusions, and recommendations obtained from the sampling event performed in October 2012. Field activities included completion of a site-wide comprehensive groundwater gauging event, and collection of groundwater samples from nine monitoring wells at the Truck Fill Stand (TFS) site located at the Naval Air Station (NAS) Key West in Boca Chica Key, Florida. In addition, two surface water samples were also collected.

This quarterly report is organized into the following sections:

- Section 1, Introduction
- Section 2, Field Activities
- Section 3, Investigation Findings
- Section 4, Conclusions and Recommendations
- Section 5, References

Tables and figures are presented in each section to support the discussions. Appendixes A, B, and C provide supporting information including sampling logs, non-hazardous waste manifest, data validation, and laboratory reports.

1.1 Site Description

NAS Key West is located in southern Monroe County, Florida, approximately 150 miles southwest of Miami. The TFS is located on Boca Chica Key, Florida (Figure 1-1). The TFS is an active facility used to fill tanker trucks for refueling aircraft. Fuel from the Boca Chica Tank Farm (BCTF) located approximately 4,000 feet southwest of the TFS is pumped to the southwest portion of the TFS through twin 6-inch-diameter steel underground pipelines. Fuel is pumped and transferred at the fueling area to tanker trucks. Trucks routinely leave and return to the site for fueling missions and related airfield operations. The TFS is also referred to as Building A-902 in reference to the former operations building that stood on the southeast side of this facility (Tetra Tech NUS, Inc. [TtNUS], 2011).

The TFS, including former Building A-902, dates back to the 1940s and was part of the original NAS Key West infrastructure. Building A-902 was the original Administration Building for NAS Key West. The layout of the site has changed since it was first used as a fueling point in 1945. Documented environmental management activities began in the mid-1970s with the reporting of tank removals, implementation of numbering systems, and tank replacements. No other documented uses of the site exist (TtNUS, 2011).

Land surface at the TFS is generally flat and is mostly paved with asphalt and concrete. The site is not paved at the northern and western areas. Wetland areas are located immediately east and northeast of the site (TtNUS, 2011).

North

0 25 50 100
Feet

FIGURE 1-1
Site Location Map
NAS Key West
Boca Chica Key, Florida

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1.2 Site History

Several spills and cleanup actions have been documented at the TFS. A 1,000-gallon underground storage tank (UST) designated Tank A-935 (also known as Tank A-902B), used for storing oily wastewater from the jet fuel filter system, was removed from the site in 1995. One 250-gallon aboveground storage tank (AST), Tank A-935-R, used for the same purpose, remains on site (Blasland, Bouck, & Lee, Inc. [BBL], 2001). The UST closure report for Tank A-935 indicated that the tank was in excellent condition; however, light non-aqueous phase liquid (LNAPL) was observed floating on groundwater during the tank excavation (Omega Environmental Services, Inc. [OES], 1995).

In April 1999, NAVFAC SE submitted a Site Assessment Report (SAR) for Building A-902 to the Florida Department of Environmental Protection (FDEP) (TtNUS, 1999). The SAR indicated that site soil and groundwater had been contaminated by petroleum hydrocarbons, presumably from past tanker truck spills. The SAR included recommendations for interim remedial action (IRA) followed by a supplemental assessment. FDEP approved the SAR on May 10, 1999.

In late January 2000, less than 25 gallons of fuel were inadvertently released into a catch basin that was under repair, resulting in the contamination of soil. The Navy excavated the contaminated soil and screened soil samples using an organic vapor analyzer (OVA) to confirm that all affected soil had been removed. In late February/early March 2000, approximately 100 gallons of fuel were released in the same area. However, the catch basin had been repaired and all fuel was reportedly contained within the catch basin and later pumped out (BBL, 2001).

In March 2000, workers constructing the new Petroleum, Oils, and Lubricants (POL) Laboratory building adjacent to the TFS discovered discolored soil with a strong petroleum odor in trenches excavated for the building footers. Based on these findings, the Navy retained BBL to perform an investigation of the area. Two monitoring wells (TFS-MW-09 and TFS-MW-10) were installed on the north and south sides of the building and sampled for petroleum hydrocarbons. Benzene was detected in groundwater samples from both wells at concentrations that exceeded the Groundwater Cleanup Target Level (GCTL) of 1 microgram per liter (µg/L), as specified in Florida Administrative Code (F.A.C.) Chapter 62-777, Table I. BBL concluded that the plume was not adequately defined in the area of the new POL Laboratory building and additional assessment was necessary. In addition, on March 29, 2000 approximately 1.9 inches of LNAPL were measured in monitoring well TFS-MW-01 (BBL, 2001).

On April 27, 2000, approximately 3,200 gallons of jet propulsion fuel no. 5 (JP-5) were released at the TFS when a valve was left open for 3 hours. Upon discovery, LNAPL recovery commenced and soil excavation began on April 28, 2000. In some areas, excavation was limited by cement foundations. The entire footprint of the spill was excavated and stockpiled. Stockpiled soil was later removed from the site and disposed. During the excavation work, dark brown oil was visible near the water table (BBL, 2001).

Because these releases potentially affected the findings of the 1999 SAR, the Navy contracted BBL to conduct a supplemental site assessment to define the extent of petroleum hydrocarbon contamination. The Supplemental Site Assessment Report (SSAR) concluded that dissolved petroleum hydrocarbons above the GCTLs were present in groundwater in the vicinity of the new POL Laboratory building, the TFS, and AST A-935-R. Concentrations of petroleum hydrocarbons in sediments and surface water in the adjacent wetland also exceeded Sediment Quality Assessment Guidelines (SQAGs) and marine Surface Water Cleanup Target Levels (SWCTLs). LNAPL was also detected in several monitoring wells. The SSAR concluded that remedial measures should be initiated (BBL, 2001).

Subsequently, a treatability study was planned for the TFS site, to include aggressive fluid vapor recovery (AFVR). TtNUS was tasked with performing the treatability study, and in May 2003 collected groundwater samples to establish baseline conditions at the TFS. The baseline data were compared with the 1999 SAR and test data showed that volatile organic compound (VOC) and polynuclear aromatic hydrocarbon (PAH) concentrations had decreased in the area west of the TFS, but remained above the GCTLs. In addition, gauging data showed LNAPL thickness had decreased from about 1 foot in monitoring well TFS-

MW-04 (October 2000) to a sheen in May 2003. Due to the decrease in LNAPL thickness, TtNUS determined that an AFVR was no longer an appropriate remedy for monitoring well TFS-MW-04. Instead, TtNUS recommended that quarterly monitoring be implemented to evaluate the extent to which natural attenuation was occurring (TtNUS, 2003). Monitored natural attenuation (MNA) sampling was conducted from May 2003 to June 2009. The results of the MNA sampling indicated that MNA was occurring, but concentrations of benzene, naphthalene, and total petroleum hydrocarbons (TPH) remained above the GCTLs in monitoring well TFS-MW-04, located in the southwest portion of the TFS.

Between June 2009 and March 2010, TtNUS performed an extensive site investigation in the TFS area. The sites investigated included: (1) the perimeter of the POL Laboratory building where LNAPL was observed in the building footing excavations; (2) the northern area adjacent to the POL Laboratory associated with the reported location of a former AST; (3) the area south of the POL Laboratory; (4) the area south of the current TFS fueling and tanker parking area/containment area extending to the edge of the taxiway; and (5) the area west of the pumping area where fuel lines have been known to leak, including the current MNA area and west beyond the edge of the taxiway. Surface water samples were also collected from the wetlands southwest of the POL Laboratory building during the site investigation (Navy, 2011).

Conclusions of the 2009/2010 Site Investigation in the JP-5 spill area were to: (1) revaluate this area since a distinct source area was not detected; and (2) collect sediment and additional surface water samples from the wetlands west of the site, as contamination has migrated to the wetlands (Navy, 2011).

Between April 9 and May 21, 2012, CH2M HILL performed additional site assessment activities at the TFS. The work included monitoring well installation, groundwater sampling, surface water and sediment sampling, aquifer slug testing, and a tidal influence evaluation. Findings from the additional site investigation activities showed petroleum compounds persist in groundwater, surface water, and sediment. Petroleum impacts to groundwater exceeded the FDEP GCTLs in one well while the FDEP SWCTLs were exceeded in the surface water samples. No FDEP regulatory standards were exceeded in the sediment samples.

Recommendations from the 2012 additional site investigation included quarterly groundwater monitoring to further evaluate the petroleum-contaminant trends over time. In addition, CH2M HILL also recommended conducting an ecological risk assessment to evaluate the potential risk to ecological receptors in the wetland area to the west of the TFS. Upon completion of an ecological risk assessment, recommendations for no further action (NFA), additional monitoring, or corrective actions for the surface water and sediment would be determined (CH2M HILL, 2012b).

Between July 17 and 19, 2012, CH2M HILL conducted a quarterly groundwater monitoring event at the TFS (CH2M HILL, 2012c). The work included a comprehensive round of well gauging and collecting groundwater samples from nine monitoring wells. Findings from the first quarter monitoring event showed petroleum compounds persist in groundwater. Petroleum impacts to groundwater exceeded the FDEP GCTLs in two monitoring wells. Recommendations from the first quarterly sampling event included continuation of the quarterly groundwater monitoring to further evaluate the petroleum-contaminant trends over time. In addition, CH2M HILL also recommended collection of water quality samples to determine the potability of the aquifer and to evaluate reclassification of the groundwater at the site as poor quality.

SECTION 2

Field Activities

This section describes the field activities conducted during the October 2012 quarterly groundwater monitoring event at the TFS. Activities followed the guidelines presented in the *Final Site Assessment Work Plan for the Truck Fill Stand* CH2M HILL, 2012a).

2.1 Field Activity Summary

The groundwater monitoring fieldwork was conducted between October 23 and 26, 2012 in accordance with the *Final Site Assessment Work Plan for the Truck Fill Stand* (CH2M HILL, 2012a) and the investigation-derived waste (IDW) was removed, transported, and disposed of on November 29, 2012. The work consisted of the following activities:

- **Site-wide Groundwater level Measurements** – Groundwater levels were measured and recorded from 16 side-wide monitoring wells.
- **Groundwater Sampling Event**—Groundwater samples were collected from the nine monitoring wells (TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-8D, TFS-MW-11, TFS-MW-12, TFS-MW-15, TFS-MW-16, and TFS-MW-17).
- **IDW Disposal**—Liquid IDW generated from the first and second quarter groundwater monitoring events was disposed.

A field activity summary is provided in Table 2-1. Figure 2-1 shows the locations of the monitoring wells.

TABLE 2-1
Field Activity Summary
Truck Fill Stand, NAS Key West, Boca Chica Key, Florida

Date	Specific Activity	Comments
October 23, 2012	Collected site-wide water level measurements	Measured groundwater levels in 16 monitoring wells
October 24-26, 2012	Collected groundwater samples	Purged and sampled nine monitoring wells (TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-8D, TFS-MW-11, TFS-MW-12, TFS-MW-15, TFS-MW-16, and TFS-MW-17); collected two surface water sample (TFS-SW-03 and Seawater)
November 29, 2012	Disposed of IDW	Removed, transported, and disposed of liquid IDW

The following sections present a summary of the site-specific activities conducted at the truck fill stand.

2.2 Groundwater Level Measurements and Sampling

Static water levels were measured in 16 wells on October 23, 2012 (Table 2-2). Water levels were measured using an interface probe and measurements were made from a survey mark located on the top of the well casing.

Between October 24 and 26, 2012, groundwater samples were collected from monitoring wells TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-8D, TFS-MW-11, TFS-MW-12, TFS-MW-15, TFS-MW-16, and TFS-MW-17. Prior to sampling, the wells were purged using a peristaltic pump fitted with new disposable polyethylene tubing. The monitoring wells were sampled following the U.S. Environmental Protection Agency (EPA) guidance entitled *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures* (EPA, 1996).The intake tubing was placed approximately 2 feet below the top of the water column in each well.

Pump discharge was monitored for pH, temperature, turbidity, specific conductance, oxidation-reduction potential (ORP), and dissolved oxygen (DO). Groundwater samples were collected after the water levels in the wells had stabilized, a minimum of one well volume per well had been purged, and field parameters were stable. Well purging forms are provided in Appendix A. Groundwater samples were analyzed for Appendix IX VOCs (EPA Method 8260B), Appendix IX semivolatile organic compounds (SVOCs) (EPA Method 8270D/8270SIM), and total recoverable petroleum hydrocarbons (TRPH) (Florida Petroleum Residual Organic [FL PRO]).

Two surface water samples (TFS-SW-03 and Seawater) and monitoring wells TFS-MW-04, TFS-MW-8D, TFS-MW-15, TFS-MW-16, and TFS-MW-17 were sampled for water quality parameters that included chloride and sulfate (EPA Method 300.1), total dissolved solids (TDS) (A2540C), and salinity (A2520B).

North

0 25 50 100
Feet

LEGEND

- Monitoring Well Location
- Abandoned Monitoring Well Location

FIGURE 2-1
Monitoring Well Locations
NAS Key West
Boca Chica Key, Florida

CH2MHILL.

ES082112065335KNV F2-1_MWlocations_r1 9/27 lk

TABLE 2-2
Water Level Elevation Data
Truck Fill Stand, NAS Key West, Boca Chica Key, Florida

Monitoring Well ID	Total Well Depth (ft BTOC)	Screen Interval (ft bgs)	Ground Elevation (ft msl)	Top of Casing Elevation (ft msl)	Depth to Groundwater (ft BTOC)	Groundwater Elevation (ft msl)
					10/23/2012	10/23/2012
TFS-MW-01	11.99	NA	NA	4.44	2.13	2.31
TFS-MW-02	11.97	NA	NA	3.09	0.86	2.23
TFS-MW-03	11.50	NA	NA	4.17	2.13	2.04
TFS-MW-04	11.97	NA	NA	2.63	0.62	2.01
TFS-MW-05	11.95	NA	NA	4.55	2.04	2.51
TFS-MW-06	11.94	NA	NA	4.21	1.64	2.57
TFS-MW-8D	35.00	NA	NA	4.12	1.94	2.18
TFS-MW-09	12.00	NA	NA	3.05	0.66	2.39
TFS-MW-10	NA	NA	NA	2.73	0.61	2.12
TFS-MW-11	11.31	NA	NA	2.62	0.41	2.21
TFS-MW-12	11.28	NA	NA	3.80	1.47	2.33
TFS-MW-13	11.00	NA	NA	2.58	0.46	2.12
TFS-MW-14	11.00	NA	NA	2.49	0.40	2.09
TFS-MW-15	11.00	1.00-11.00	2.4	2.28	0.59	1.69
TFS-MW-16	12.15	2.15-12.15	3.5	3.20	1.21	1.99
TFS-MW-17	11.75	1.75-11.75	2.5	2.26	0.41	1.85

Notes:
ft bgs = feet below ground surface
ft BTOC = feet below top of casing
ft msl = feet mean sea level
NA = not available
Construction details and survey information for wells TFS-MW-01 through TFS-MW-14 taken from the *Site Assessment for Truck Fill Stand* Report (TtNUS, 2011).

2.3 Investigation-Derived Waste

IDW (decontamination water and well purge water) was containerized in a labeled 55-gallon drum and stored at the TFS. On November 29, 2012, one properly labeled 55-gallon drum of IDW was transported to World Petroleum located in Davie, Florida. A copy of the non-hazardous waste manifest for the water IDW is provided in Appendix B.

SECTION 3

Investigation Findings

This section presents the findings from the quarterly groundwater monitoring event.

3.1 Hydrogeology

3.1.1 Groundwater

Groundwater was observed at depths ranging from 0.40 feet bgs at well TFS-MW-14 to 2.13 feet bgs at wells TFS-MW-01 and TFS-MW-03. Water table elevations beneath the site ranged from 1.69 to 2.57 feet msl in October 2012. The groundwater elevations measured on October 23, 2012 were used to develop a potentiometric surface map (Figure 3-1) of the water-table aquifer. The potentiometric surface for October 2012 indicates that the direction of groundwater flow across the site is radial from a groundwater high located at well TFS-MW-06. The radial flow is probably attributable to the fact that well TFS-MW-06 is located in an unpaved grassy area and receives more recharge. The average horizontal gradient of across the site in October 2012 was estimated to be 0.005 foot per foot (ft/ft).

Historical and current vertical gradient calculations are summarized in Table 3-1. Vertical gradients were calculated using well cluster TFS-MW-01/TFS-MW-8D. During October 2012, a downward hydraulic gradient of -0.006 ft/ft was measured.

TABLE 3-1
Historical Calculated Vertical Hydraulic Gradients
Truck Fill Stand, NAS Key West, Boca Chica Key, Florida

Date	Well Cluster	Vertical Gradient (ft/ft)	Gradient Direction
4/20/2012	TFS-MW-01/TFS-MW-8D	0.006	Up
5/21/2012	TFS-MW-01/TFS-MW-8D	-0.017	Down
7/17/2012	TFS-MW-01/TFS-MW-8D	-0.018	Down
10/23/2012	TFS-MW-01/TFS-MW-8D	-0.006	Down

The rate of groundwater moving beneath the site was estimated by the average seepage velocity. The following equation was used to calculate the average seepage velocity:

$$V_x = \frac{Ki}{n_e}$$

where:

V_x = average seepage velocity in feet per day (ft/day)

K = hydraulic conductivity (geometric mean hydraulic conductivity of 8.99 ft/day)

i = hydraulic gradient (average horizontal gradient of across the site in October 2012 of 0.005 ft/ft)

n_e = effective porosity (assumed to be 0.15 for weathered limestone)

The horizontal seepage velocity (V) across the site is estimated to be 0.30 ft/day or 109.5 feet per year (ft/year) (V=[8.99 ft/day][0.005 ft/ft]/0.15).

North

0 25 50 100
Feet

LEGEND

- Monitoring Well Location
- Groundwater Flow Direction

NOTES

1. Groundwater elevations were measured on October 23, 2012
2. All elevations in feet
3. Deep well TFS-MW-8D was not used to create this potentiometric surface map
4. Contour interval = 0.02 ft

FIGURE 3-1
Potentiometric Surface Map (October 2012)
NAS Key West
Boca Chica Key, Florida

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ES092412162320KNV F3-1_PotMap_Oct2012 12/24/12 lk

3.2 Field Parameters

Water quality parameters (temperature, specific conductivity, ORP, DO, and pH) were measured during well purging. The measured water quality parameters convey the groundwater conditions and provide information necessary to evaluate natural attenuation. Table 3-2 presents the water quality parameter results. Results are discussed below as they relate to the suitability of an aquifer as an environment for hydrocarbon degradation to occur.

3.2.1 Temperature

Groundwater temperature directly affects the solubility of oxygen and other geochemical species. The solubility of DO is temperature dependent, being more soluble in cold water than in warm water. Groundwater temperature also affects the metabolic activity of bacteria. The optimum temperature range for microbial activity is between 8 to 30 degrees Celsius (°C) and rates of hydrocarbon biodegradation roughly double for every 10°C increase in temperature over the temperature range between 5 and 25°C. Groundwater temperatures below 5°C tend to inhibit biodegradation and slow rates of biodegradation are generally observed.

During the October 2012 groundwater monitoring event, temperatures varied from approximately 26.9 to 30.5°C and averaged 28.7°C in the monitoring wells. These groundwater temperatures are within the upper range for optimal microbial activity and are extremely favorable for biodegradation of hydrocarbons to occur.

3.2.2 Specific Conductance

Specific conductance measurements indicate whether groundwater extracted from wells is representative of the same water-bearing zone at a site. Specific conductance measurements ranged from 0.535 to 9.16 milliSiemens per centimeter (mS/cm). The specific conductance measurements from the October 2012 monitoring event were similar with the exception of well TFS-MW-8D. The significant increase in specific conductance in the deep well TFS-MW-8D is likely due to higher salinity due to salt water intrusion.

3.2.3 Dissolved Oxygen

DO is a measure of oxygen dissolved in a solution. DO is often depleted in groundwater contaminated with hydrocarbons as a result of in situ biodegradation of hydrocarbons. As oxygen is consumed, carbon dioxide (CO_2) is produced in the biodegradation process. DO concentrations less than 0.5 milligrams per liter (mg/L) typically are indicative of an environment supportive of anaerobic reactions. DO concentrations greater than 2 mg/L reflect well aerated groundwater.

During the October 2012 monitoring event, DO ranged from 0.95 mg/L (well TFS-MW-17) to 1.86 mg/L (well TFS-MW-8D) and averaged 1.29 mg/L across the site. Overall, the DO concentrations are indicative of aerobic conditions at the site.

3.2.4 Oxidation-Reduction Potential

ORP is a measure of electron activity and an indicator of the relative tendency of a solution to accept or transfer electrons. As electron acceptors are utilized, the redox potential of the groundwater decreases. Negative or relatively low redox values can be used to identify areas under anaerobic conditions. The ORP in groundwater samples was negative in each of the nine monitoring wells sampled during October 2012, indicating a reducing groundwater environment. ORP ranged from -364.0 millivolts (mV) at well TFS-MW-8D to -205.0 mV at well TFS-MW-05. The range in ORP values suggests that the aquifer is a reducing environment.

3.2.5 pH

The pH of groundwater has an effect on the presence and activity of microbial populations in groundwater and the optimum pH range for microbial activity is between 6 and 8 standard units. pH ranged from 6.61 to 7.53 units during the October 2012 monitoring event, indicating the pH of groundwater at the site is within the optimal range for microbial activity to occur.

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TABLE 3-2
Field Parameters
Truck Fill Stand, NAS Key West, Boca Chica Key, Florida

Location	TFS-MW-01		TFS-MW-03	TFS-MW-04		TFS-MW-05		TFS-MW-06	TFS-MW-8D		TFS-MW-11		TFS-MW-12	
Field Parameter **Date**	7/17/2012	10/25/2012	4/19/2012	7/19/2012	10/26/2012	7/18/2012	10/25/2012	4/19/2012	7/17/2012	10/26/2012	7/18/2012	10/24/2012	7/19/2012	10/25/2012
Temperature (°C)	29.33	28.68	29.05	27.96	28.36	33.15	30.49	26.45	27.32	26.86	32.22	28.70	29.82	29.39
Specific Conductance (mS/cm)	0.862	0.914	0.868	1.260	1.320	0.362	0.535	0.827	23.600	9.160	0.324	0.718	0.536	0.681
Dissolved Oxygen (mg/L)	1.11	1.03	0.00	0.57	1.85	1.44	1.03	0.00	0.66	1.86	3.52	1.05	1.52	1.02
Oxidation-Reduction Potential (mV)	-183.0	-259.0	109.0	-173.0	-267.0	-111.0	-205.0	-260.0	-355.0	-364.0	-230.0	-285.0	-108.0	-248.0
pH	6.64	6.81	7.19	6.59	6.76	7.38	7.41	6.80	6.99	7.04	7.47	7.20	7.27	7.36
Turbidity (NTU)	0.0	15.0	16.0	0.0	20.6	0.0	33.3	9.1	0.0	4.8	0.0	14.5	124.0	70.8
Ferrous Iron (mg/L)	NM	NM	0.0	NM	NM	NM	NM	0.0	NM	NM	NM	NM	NM	NM

Location	TFS-MW-15			TFS-MW-16			TFS-MW-17		
Field Parameter **Date**	4/19/2012	7/18/2012	10/24/2012	4/19/2012	7/19/2012	10/26/2012	4/19/2012	7/18/2012	10/24/2012
Temperature (°C)	27.66	27.67	28.03	29.00	28.62	28.92	28.14	28.16	28.55
Specific Conductance (mS/cm)	2.110	1.470	1.820	3.390	1.520	2.110	3.500	1.330	2.500
Dissolved Oxygen (mg/L)	0.00	0.59	1.01	5.09	0.46	1.82	0.00	0.67	0.95
Oxidation-Reduction Potential (mV)	-350.0	-296.0	-327.0	-187.0	-306.0	-343.0	-364.0	-334.0	-345.0
pH	6.44	6.62	6.61	7.03	7.53	7.53	6.77	7.20	7.13
Turbidity (NTU)	45.1	17.1	159.0	67.9	0.0	23.3	18.9	0.0	13.5
Ferrous Iron (mg/L)	0.0	NM	NM	0.0	NM	NM	0.0	NM	NM

Notes:
°C - degrees centigrade
mS/cm - millisiemens per centimeter
mg/L - milligrams per liter
mV - millivolts
NTU - nephelometric turbidity unit
NM - not measured

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3.3 Sample Results

The laboratory results were reviewed and validated to assess the accuracy, precision, and completeness based upon procedures described in guidance documents such as the EPA's *National Functional Guidelines for Organic Data Review* (EPA, 2008). Both lab quality assurance/quality control (QA/QC) summary forms and data reports were reviewed. Based on the validation process, the analytical results are usable as qualified in the decision-making process. CH2M HILL's data validation reports and laboratory analytical reports for groundwater samples are provided in Appendix C on CD.

Following the data validation process, the GCTLs, as listed in F.A.C. Chapter 62-777 were used to compare groundwater analytical results. Sample results are discussed in the text that follows.

3.3.1 Water Quality Evaluation

In October 2012, water quality parameters were analyzed to evaluate the groundwater at the TFS site for qualification as potable freshwater or poor quality saline water that would be unsuitable for potable use. Table 3-3 includes the water quality parameters measured in groundwater monitoring wells during the monitoring event.

The groundwater from four shallow monitoring wells, TFS-MW-04, TFS-MW-15, TFS-MW-16, and TFS-MW-17, and one deep well, TFS-MW-8D were monitored for salinity, total dissolved solids, sulfate, chloride levels, and specific conductance to evaluate whether groundwater beneath the site is fresh or saline. The measured water quality parameters were compared to published water quality data from U.S. Geological Survey (USGS) (1990), the potable use criteria from FDEP, and to two surface water samples (TFS-SW-03 and Seawater).

The USGS report on *Water-Resources Potential of the Freshwater Lens at Key West, Florida* (1990) identified a well defined relationship between specific conductance and chloride concentration in groundwater at Key West. General dissolved salt content, or salinity, is used to relate specific conductance and chloride concentration to water type. Water quality types identified by USGS with a comparison to site measured data are listed in Table 3-4.

The TFS site water quality from the well data indicated the following:

- **Conductivity** - The specific conductance (conductivity) measurements were compared against a value of 0 to 1,400 µmhos/cm (or µS/cm) identified for potable freshwater. The range of specific conductivity values in the four shallow groundwater samples from site monitoring wells ranged from 1,326 to 2,479 µmhos/cm. The specific conductivity measurement in the deep well was 9,145 µmhos/cm. Four of the five monitoring wells sampled in October 2012 indicate conductivity values greater than the range identified for potable freshwater, which indicates the TFS site groundwater to be saline. Deeper groundwater below 25 feet bgs has higher conductivity than the shallower groundwater at the site.
- **Chloride** – Potable water with chloride levels at 250 mg/L and above exhibits a salty taste. The concentrations of chloride in the shallow monitoring wells sampled during October 2012 were compared against the potable water quality criterion of 250 mg/L. Based on literature reports, the seawater at Key West has a chloride ion concentration of about 19,000 mg/L (USGS, 1990). For comparison, the surface water samples TFS-SW-03 and Seawater had sulfate concentrations of 27.8 mg/L and 21,100 mg/L, respectively. The four shallow groundwater samples from site monitoring wells had chloride levels ranging between 144 mg/L and 413 mg/L. The deep well (TFS-MW-8D) had chloride levels at 6,100 mg/L. Chloride levels in three of the five monitoring wells evaluated indicate site groundwater to be slightly to moderately saline.

TABLE 3-3
Groundwater Quality Data Summary

		Sample Data							
	Location	TFS-MW-04	TFS-MW-8D	TFS-MW-15	TFS-MW-16	TFS-MW-17	TFS-SW-03	Seawater	**Regulatory Limit for Potable Water**
	Sample ID	Q2-TFS-MW-04	Q2-TFS-MW-8D	Q2-TFS-MW-15	Q2-TFS-MW-16	Q2-TFS-MW-17	Q2-TFS-SW-03	Q2-Seawater	
	Sample Date	10/26/2012	10/26/2012	10/24/2012	10/26/2012	10/24/2012	10/23/2012	10/23/2012	
Analyte	**Units**								
Chloride/Nitrate/Nitrite/Sulfate (E300.1)									
Chloride	mg/L	144	**6100**	157	**413**	**372**	27.8	**21100**	250
Sulfate	mg/L	1.9	**732**	7.5 J	91.8	96.6	3.00	**2790**	250
Total Dissolved Solids (A2540C)									
Residue, Filterable (TDS)	mg/L	**786**	**11300**	**1020**	**1100**	**1290**	**1300**	**38200**	500
Manganese (SW6010B)									
Manganese	mg/L	0.0208	0.00293 J	0.00488 J	0.00164 J	0.00265 J	**7.78 J**	**0.717 J**	0.05
Salinity (A2520B)									
Salinity	ppt	ND	**10.7**	ND	ND	**1.08**	ND	**35.4**	1
Field Parameters									
Conductance	µmhos/cm	**1320**	**9160**	**1820**	**2110**	**2500**	NM	NM	1275
Turbidity	NTU	20.6	4.8	**159**	23.3	13.5	NM	NM	29

TFS = Truck Fill Stand

MW = monitoring well

SW = surface water

NM = not measured

ND = not detected

mg/L = milligrams per liter

ppt = parts per trillion

µmhos/cm = µS/cm - microSiemens per centimeter

NTU = nephelometric turbidity unit

Bold and shaded values indicate the analyte exceeded the Regulatory Limit for Potable Water

TABLE 3-4
Water Quality Types and Site Data Comparison

Type of Water*	Specific Conductance (µS/cm)	Chloride (mg/L)	Comment
Fresh	0 – 1,400	0 – 250	
Very slightly saline	1,400 – 1,900	250 – 400	
Slightly saline	1,900 – 5,000	400 – 1,500	
Moderately saline	5,000 – 17,000	1,500 – 5,000	
Very Saline	17,000 – 52,000	5,0000 – 19,000	
Seawater	> 52,000	> 19,000	
TFS-Site Data**			
Shallow Groundwater***	1,326 - 2,479	144 - 413	Slightly saline
Deep Groundwater (TFS-MW-08D)	9,145	6,100	Moderately saline
Sea Water	NM	21,100	

* - Source: USGS, 1990
** - See Table 3-3 for well-specific details on various water quality parameters
*** - includes wells TFS-MW04, TFS-MW15, TFS-MW16 and TFS-MW17
mg/L = milligrams per liter
µS/cm - microSiemens per centimeter

- **Salinity** – Salinity was compared against the freshwater quality criterion of 1 part per thousand (ppt). The literature reported salinity level in seawater is at about 35 ppt (35,000 mg/L), while brackish estuaries may have salinity levels between 1 and 10 ppt (USGS, 1990). For comparison, the surface water samples TFS-SW-03 and Seawater had salinity concentrations of <1.0 ppt and 35.4 ppt, respectively. The site monitoring well water salinity ranged between 1.08 ppt in one shallow well TFS-MW-17 to 10.7 ppt in the deep monitoring well TFS-MW-8D. The site groundwater appears to be slightly saline in shallower depths and moderately saline in groundwater below 25 feet.
- **Sulfate** – The concentrations of sulfate in the shallow monitoring wells sampled during October 2012 were compared against the potable water quality criterion of 250 mg/L. For comparison, the surface water samples TFS-SW-03 and Seawater had sulfate concentrations of 3.00 mg/L and 2,790 mg/L, respectively. The four shallow groundwater samples had sulfate concentrations ranging between 1.9 mg/L and 96.6 mg/L, which is well below the criterion of 250 mg/L. However, the deep well (TFS-MW-8D) had a sulfate concentration of 732 mg/L, indicating better connectivity to saline water at depths below 25 feet.
- **Total Dissolved Solids (TDS)** – TDS measured in site groundwater was compared against the 500 mg/L value for freshwater. The shallow wells had TDS values ranging between 786 mg/L to 1,290 mg/L, and deep well (TFS-MW-8D) had 11,300 mg/L, and all wells have higher TDS than what is considered freshwater. For comparison, the surface water samples TFS-SW-03 and Seawater had TDS concentrations of 1,300 mg/L and 38,200 mg/L, respectively.

3.3.2 Groundwater Evaluation

Groundwater samples were collected from monitoring wellsTFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-8D, TFS-MW-11, TFS-MW-12, TFS-MW-15, TFS-MW-16, and TFS-MW-17 and analyzed for Appendix IX VOCs, Appendix IX SVOCs, and TRPH. Figure 3-2 presents the compounds detected in the groundwater samples, and Table 3-3 presents the analytical results.

Based on comparison of the water quality data to USGS and FDEP potable water quality standards, groundwater quality beneath at the TFS site is saline and could not be used as a potable water source without desalination. Because groundwater is not suitable for potable use, CH2M HILL recommends the site groundwater protection criteria should be based upon “poor quality” GCTLs. Because the water quality evaluation above indicates groundwater at the site is saline, the evaluation of groundwater test results below is based on the use of the “poor quality” GCTLs.

3.3.2.1 VOCs

Benzene was detected in monitoring wells TFS-MW-04 and TFS-MW-15 and carbon disulfide was detected in monitoring wells TFS-MW-15 and TFS-MW-17. Ethylbenzene, toluene, and xylenes were also detected in monitoring well TFS-MW-15. All concentrations were below their respective GCTLs. No VOCs were detected in the remaining six monitoring wells.

3.3.2.2 SVOCs

Thirteen SVOCs were detected in groundwater. SVOCs were detected in monitoring wells TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-11, TFS-MW-15, and TFS-MW-17. Based on poor quality criteria, no SVOCs exceeded their respective GCTLs. SVOCs were not detected in wells TFS-MW-8D, TFS-MW-12, and TFS-MW-16.

3.3.2.3 TRPH

TRPH was detected eight of the nine monitoring wells sampled in October 2012. TRPH concentrations ranged from 310J µg/L (well TFS-MW-12) to 24,300 µg/L (well TFS-MW-15); however, the GCTL of 50,000 µg/L, based on poor quality criterion, was not exceeded. TRPH was not detected in well TFS-MW-16.

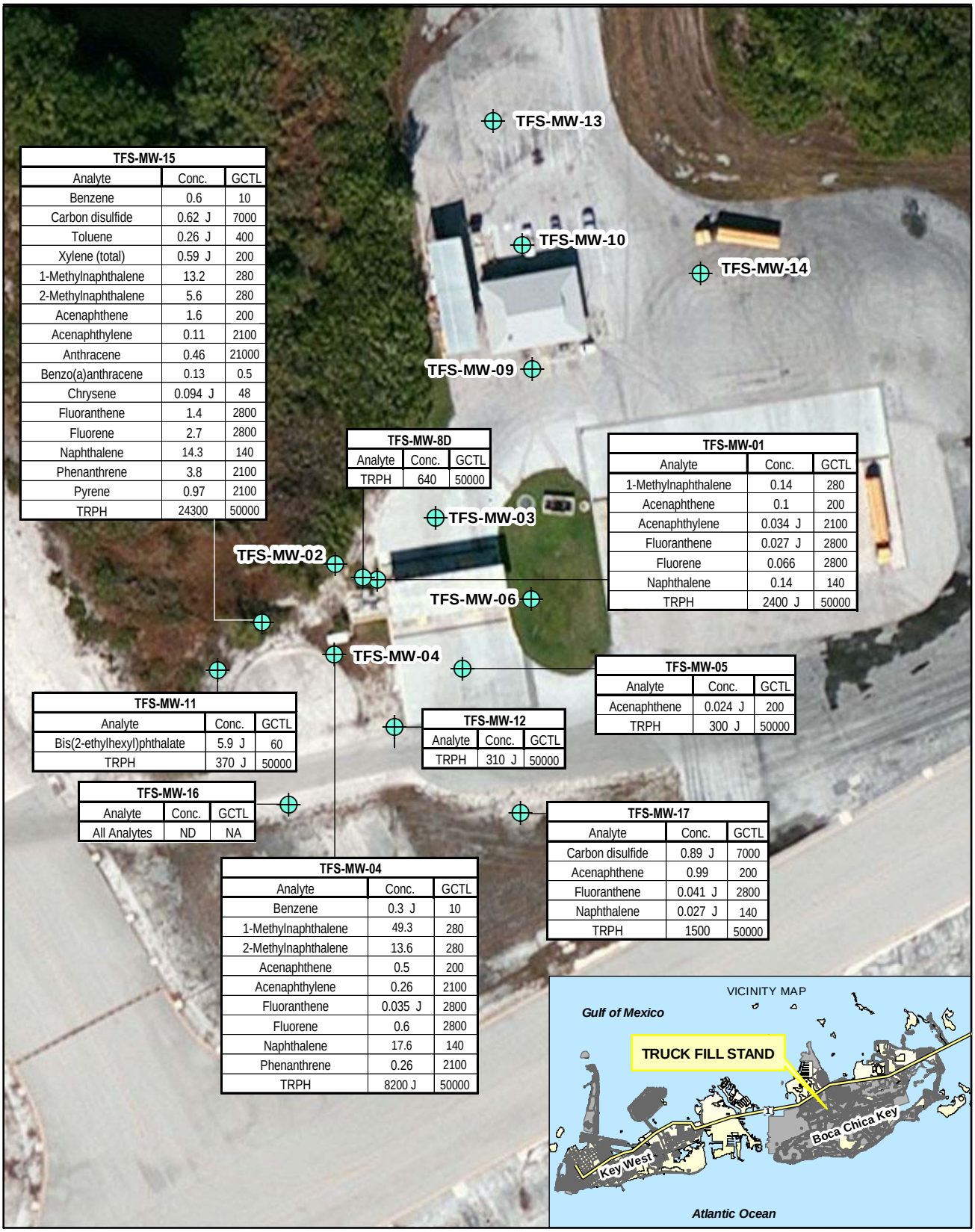
TABLE 3-5
Groundwater Analytical Data Summary
Truck Fill Stand, NAS Key West, Boca Chica Key, Florida

		Groundwater Sample Data											
	Location	TFS-MW-01	TFS-MW-04	TFS-MW-05	TFS-MW-8D	TFS-MW-11	TFS-MW-12	TFS-MW-15		TFS-MW-16	TFS-MW-17	**GCTL[1]**	**GCTL (Low Yield/ Poor Quality)[1]**
	Sample ID	Q2-TFS-MW-01	Q2-TFS-MW-04	Q2-TFS-MW-05	Q2-TFS-MW-8D	Q2-TFS-MW-11	Q2-TFS-MW-12	Q2-TFS-MW-15	Q2-TFS-MW-15-DUP	Q2-TFS-MW-16	Q2-TFS-MW-17		
	Sample Date	10/25/2012	10/26/2012	10/25/2012	10/26/2012	10/24/2012	10/25/2012	10/24/2012	10/24/2012	10/26/2012	10/24/2012		
Analyte	**Units**												
Appendix IX Volatile Organic Compounds (SW8260B)													
1,1,1,2-Tetrachloroethane	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	1.3	13
1,1,1-Trichloroethane	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	200	2000
1,1,2,2-Tetrachloroethane	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.2	2
1,1,2-Trichloroethane	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	5	50
1,1-Dichloroethane	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	70	700
1,1-Dichloroethene	µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	7	70
1,2,3-Trichloropropane	µg/L	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.7 U	0.02	0.2
1,2-Dibromo-3-chloropropane	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.2	2
1,2-Dibromoethane	µg/L	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.22 U	0.02	0.2
1,2-Dichloroethane	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	3	30
1,2-Dichloropropane	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	5	50
1,4-Dichloro-2-butene	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	NA	NA
1,4-Dioxane	µg/L	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	3.2	32
2-Butanone	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4200	42000
2-Hexanone	µg/L	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	0.96 U	280	2800
4-Methyl-2-pentanone	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	560	5600
Acetone	µg/L	10 U	2.6 U	2.6 U	10 U	2.6 U	2.6 U	10 U	10 U	2.6 U	2.6 U	6300	63000
Acetonitrile	µg/L	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	42	420
Acrolein	µg/L	8 UR	8 UR	8 UR	8 UR	8 UR	8 UR	8 UR	8 UR	8 UR	8 UR	3.5	35
Acrylonitrile	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	0.06	0.6
Allyl chloride	µg/L	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	0.48 U	35	350
Benzene	µg/L	0.34 U	**0.3 J**	0.34 U	0.34 U	0.34 U	0.34 U	**0.6**	**0.56**	0.34 U	0.34 U	1	10
Bromodichloromethane	µg/L	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.6	6
Bromoform	µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	4.4	44
Bromomethane	µg/L	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	0.86 U	9.8	98
Carbon disulfide	µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	**0.62 J**	0.38 U	0.38 U	**0.89 J**	700	7000
Carbon tetrachloride	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	3	30
Chlorobenzene	µg/L	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	100	1000
Chloroethane	µg/L	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	1.4 U	12	120
Chloroform	µg/L	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	70	700
Chloromethane	µg/L	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	0.64 U	2.7	27
Chloroprene	µg/L	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	0.4 U	140	1400
cis-1,3-Dichloropropene	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	NA	NA
Dibromochloromethane	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.4	4
Dibromomethane	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	70	700
Dichlorodifluoromethane	µg/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1400	14000
Ethyl methacrylate	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	630	6300
Ethylbenzene	µg/L	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	30	300
Isobutyl alcohol	µg/L	40 UR	40 UR	40 UR	40 UR	40 UR	40 UR	40 UR	40 UR	40 UR	40 UR	2100	21000
Methacrylonitrile	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	0.7	7
Methyl iodide	µg/L	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	1.5 U	NA	NA
Methyl methacrylate	µg/L	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	25	250
Methylene chloride	µg/L	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	5	50
Propionitrile	µg/L	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	20 UR	NA	NA
Styrene	µg/L	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	100	1000
Tetrachloroethene	µg/L	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	0.42 U	3	30
Toluene	µg/L	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	0.28 U	**0.26 J**	**0.25 J**	0.28 U	0.28 U	40	400
trans-1,2-Dichloroethene	µg/L	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	100	1000
trans-1,3-Dichloropropene	µg/L	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	0.6 U	NA	NA
Trichloroethene	µg/L	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	3	30
Trichlorofluoromethane	µg/L	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	0.8 U	2100	21000
Vinyl acetate	µg/L	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	88	880
Vinyl chloride	µg/L	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	1	10
Xylene (total)	µg/L	1 U	1 U	1 U	1 U	1 U	1 U	**0.59 J**	**0.88 J**	1 U	1 U	20	200
Appendix IX Semivolatile Organic Compounds (SW8270D)													
0,0,0-Triethylphosphorothioate	µg/L	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 UJ	5.8 U	5.9 U	NA	NA
1,2,4,5-Tetrachlorobenzene	µg/L	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 UJ	4.4 U	4.5 U	2.1	21
1,2,4-Trichlorobenzene	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	70	700
1,2-Dichlorobenzene	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	600	6000
1,3,5-Trinitrobenzene	µg/L	4 UJ	4 UJ	4 UJ	4 UJ	4 UJ	4 UJ	4 UJ	4 UJ	4 UJ	4.1 UJ	210	2100
1,3-Dichlorobenzene	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	210	2100
1,3-Dinitrobenzene	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5.1 U	0.7	7
1,4-Dichlorobenzene	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	75	750
1,4-Naphthoquinone	µg/L	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 UJ	6.3 U	6.3 UJ	NA	NA
1-Naphthylamine	µg/L	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 U	3.6 UJ	3.6 U	3.7 U	NA	NA
2,2'-Oxybis(1-chloropropane)	µg/L	6.7 U	6.7 U	6.7 U	6.7 U	6.7 U	6.7 U	6.7 U	6.7 UJ	6.7 U	6.7 U	NA	NA
2,3,4,6-Tetrachlorophenol	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	210	2100
2,4,5-Trichlorophenol	µg/L	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 UJ	6.9 U	6.9 U	1	10
2,4,6-Trichlorophenol	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 UJ	1.7 U	1.7 U	3.2	32
2,4-Dichlorophenol	µg/L	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 UJ	6.3 U	6.3 U	0.3	3
2,4-Dimethylphenol	µg/L	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 UJ	4.6 U	4.7 U	140	1400
2,4-Dinitrophenol	µg/L	11.3 U	11.3 U	11.3 U	11.3 U	11.3 U	11.3 U	11.3 U	11.3 UJ	11.3 U	11.4 U	14	140
2,4-Dinitrotoluene	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	0.05	0.5
2,6-Dichlorophenol	µg/L	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 UJ	7.1 U	7.1 U	0.2	2
2,6-Dinitrotoluene	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	0.05	0.5
2-Acetylaminofluorene	µg/L	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 U	2.2 UJ	2.2 U	2.2 U	NA	NA
2-Chloronaphthalene	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	560	5600
2-Chlorophenol	µg/L	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 U	5.8 UJ	5.8 U	5.9 U	35	350
2-Methylphenol	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	35	350
2-Naphthylamine	µg/L	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	5.1 UJ	0.0003	0.003
2-Nitroaniline	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	21	210
2-Nitrophenol	µg/L	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 UJ	1.6 U	1.6 U	NA	NA
2-Picoline	µg/L	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 UJ	8.1 U	8.2 U	NA	NA
3,3'-Dichlorobenzidine	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	0.08	0.8
3-Methylcholanthrene	µg/L	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 UJ	4.4 U	4.5 U	NA	NA
3-Nitroaniline	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	1.7	17
4,6-Dinitro-2-methylphenol	µg/L	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 UJ	8.1 U	8.2 U	NA	NA
4-Aminobiphenyl	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 UJ	4 U	4.1 U	NA	NA
4-Bromophenyl-phenylether	µg/L	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 UJ	4.6 U	4.7 U	NA	NA
4-Chloro-3-methylphenol	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	63	630
4-Chloroaniline	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	28	280
4-Chlorophenyl-phenylether	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5.1 U	NA	NA
4-Methylphenol	µg/L	12.3 U	12.3 U	12.3 U	12.3 U	12.3 U	12.3 U	12.3 U	12.3 UJ	12.3 U	12.4 U	3.5	35
4-Nitroaniline	µg/L	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 UJ	3 U	3.1 U	1.7	17
4-Nitrophenol	µg/L	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 UJ	8.1 U	8.2 U	56	560
4-Nitroquinoline-1-oxide	µg/L	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 U	7.5 UJ	7.5 U	7.6 U	NA	NA
5-Nitro-o-toluidine	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	1.1	11
7,12-Dimethylbenz(a)anthracene	µg/L	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 UJ	1.9 U	2 U	NA	NA
a,a-Dimethylphenethylamine	µg/L	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.6 UR	NA	NA
Acetophenone	µg/L	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 UJ	8.1 U	8.2 U	700	7000
Aniline	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	6.1	61
Aramite	µg/L	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 UJ	8.1 U	8.2 U	1.4	14
Benzyl alcohol	µg/L	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 UJ	6.3 U	6.3 U	2100	21000
Bis(2-chloroethoxy)methane	µg/L	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 U	7.1 UJ	7.1 U	7.1 U	NA	NA
Bis(2-chloroethyl)ether	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	0.03	0.3
Bis(2-ethylhexyl)phthalate	µg/L	8.9 U	8.9 U	8.9 U	8.9 U	**5.9 J**	8.9 U	8.9 U	8.9 UJ	8.9 U	9 U	6	60
Butylbenzylphthalate	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	140	1400
Chlorobenzilate	µg/L	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 UJ	1.6 U	1.6 U	0.1	1
Diallate (Avadex)	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 UJ	1.7 U	1.7 U	0.6	6
Dibenzofuran	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	28	280
Diethylphthalate	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	5600	56000
Dimethylphthalate	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	70000	700000
Di-n-butylphthalate	µg/L	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 UJ	1.7 U	1.8 U	700	7000
Di-n-octylphthalate	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 UJ	4 U	4.1 U	140	1400
Dinoseb	µg/L	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 U	8.1 UJ	8.1 U	8.2 U	7	70
Ethyl methanesulfonate	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5.1 U	NA	NA

TABLE 3-5
Groundwater Analytical Data Summary
Truck Fill Stand, NAS Key West, Boca Chica Key, Florida

		Groundwater Sample Data											
	Location	TFS-MW-01	TFS-MW-04	TFS-MW-05	TFS-MW-8D	TFS-MW-11	TFS-MW-12	TFS-MW-15		TFS-MW-16	TFS-MW-17	**GCTL[1]**	**GCTL (Low Yield/ Poor Quality)[1]**
	Sample ID	Q2-TFS-MW-01	Q2-TFS-MW-04	Q2-TFS-MW-05	Q2-TFS-MW-8D	Q2-TFS-MW-11	Q2-TFS-MW-12	Q2-TFS-MW-15	Q2-TFS-MW-15-DUP	Q2-TFS-MW-16	Q2-TFS-MW-17		
	Sample Date	10/25/2012	10/26/2012	10/25/2012	10/26/2012	10/24/2012	10/25/2012	10/24/2012	10/24/2012	10/26/2012	10/24/2012		
Analyte	**Units**												
Hexachlorobenzene	µg/L	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 U	0.83 UJ	0.83 U	0.84 U	1	10
Hexachlorobutadiene	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5.1 U	0.4	4
Hexachlorocyclopentadiene	µg/L	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 UJ	1.6 U	1.7 U	50	500
Hexachloroethane	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	2.5	25
Hexachloropropene	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 UJ	4 U	4.1 U	NA	NA
Isodrin	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	NA	NA
Isophorone	µg/L	7.7 U	7.7 U	7.7 U	7.7 U	7.7 U	7.7 U	7.7 U	7.7 UJ	7.7 U	7.8 U	37	370
Isosafrole	µg/L	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 U	5.2 UJ	5.2 U	5.3 U	NA	NA
Kepone	µg/L	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.3 UR	32.6 UR	0.004	0.04
Methapyriline	µg/L	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.4 UJ	4.5 UJ	NA	NA
Methylmethanesulfonate	µg/L	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 U	3.8 UJ	3.8 U	3.9 U	NA	NA
Nitrobenzene	µg/L	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 UJ	2 U	2 U	3.5	35
N-Nitrosodibutylamine	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	0.006	0.06
N-Nitrosodiethylamine	µg/L	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 U	6.3 UJ	6.3 U	6.3 U	0.0002	0.002
N-Nitrosodimethylamine	µg/L	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 UJ	4.4 U	4.5 U	0.0007	0.007
N-Nitroso-di-n-propylamine	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	0.005	0.05
N-Nitrosodiphenylamine	µg/L	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 U	6.9 UJ	6.9 U	6.9 U	7.1	71
N-Nitrosomethylethylamine	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	0.002	0.02
N-Nitrosomorpholine	µg/L	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 U	6.1 UJ	6.1 U	6.1 U	NA	NA
N-Nitrosopiperidine	µg/L	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 U	5.6 UJ	5.6 U	5.7 U	NA	NA
N-Nitrosopyrrolidine	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	0.02	0.2
o-Toluidine	µg/L	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 U	5.5 UJ	5.5 U	5.5 U	0.1	1
p-Dimethylaminoazobenzene	µg/L	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 UJ	1.2 U	1.3 U	NA	NA
Pentachlorobenzene	µg/L	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 U	4.4 UJ	4.4 U	4.5 U	5.6	56
Pentachloroethane	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5.1 U	NA	NA
Pentachloronitrobenzene(PCNB)	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 UJ	4 U	4.1 U	0.1	1
Pentachlorophenol	µg/L	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 U	2.8 UJ	2.8 U	2.8 U	1	10
Phenacetin	µg/L	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 U	1.8 UJ	1.8 U	1.8 U	NA	NA
Phenol	µg/L	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 U	3.4 UJ	3.4 U	3.5 U	10	100
p-Phenylenediamine	µg/L	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 UJ	4 U	4.1 U	1300	13000
Pronamide	µg/L	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 U	1.6 UJ	1.6 U	1.6 U	53	530
Pyridine	µg/L	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 UJ	4.2 U	4.3 U	7	70
Safrole	µg/L	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 UJ	5 U	5.1 U	NA	NA
Appendix IX Polycyclic Aromatic Hydrocarbons (SW8270D-SIM)													
1-Methylnaphthalene	µg/L	**0.14**	**49.3**	0.04 UJ	0.04 U	0.04 U	0.04 U	**13.2**	**14**	0.041 U	0.04 U	28	280
2-Methylnaphthalene	µg/L	0.04 U	**13.6**	0.04 UJ	0.04 U	0.04 U	0.04 U	**5.6**	**6**	0.041 U	0.04 U	28	280
Acenaphthene	µg/L	**0.1**	**0.5**	**0.024 J**	0.04 U	0.04 U	0.04 U	**1.6**	**1.7**	0.041 U	**0.99**	20	200
Acenaphthylene	µg/L	**0.034 J**	**0.26**	0.04 UJ	0.04 U	0.04 U	0.04 U	**0.11**	**0.12**	0.041 U	0.04 U	210	2100
Anthracene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	**0.46**	**0.48**	0.041 U	0.04 U	2100	21000
Benzo(a)anthracene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	**0.13**	**0.15**	0.041 U	0.04 U	0.05	0.5
Benzo(a)pyrene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.041 U	0.04 U	0.2	2
Benzo(b)fluoranthene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.041 U	0.04 U	0.05	0.5
Benzo(g,h,i)perylene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.041 U	0.04 U	210	2100
Benzo(k)fluoranthene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.041 U	0.04 U	0.5	5
Chrysene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	**0.094 J**	**0.12 J**	0.041 U	0.04 U	4.8	48
Dibenzo(a,h)anthracene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.041 U	0.04 U	0.005	0.05
Fluoranthene	µg/L	**0.027 J**	**0.035 J**	0.04 UJ	0.04 U	0.04 U	0.04 U	**1.4**	**1.4**	0.041 U	**0.041 J**	280	2800
Fluorene	µg/L	**0.066**	**0.6**	0.04 UJ	0.04 U	0.04 U	0.04 U	**2.7**	**2.9**	0.041 U	0.04 U	280	2800
Indeno(1,2,3-cd)pyrene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	0.04 U	0.04 U	0.041 U	0.04 U	0.05	0.5
Naphthalene	µg/L	**0.14**	**17.6**	0.04 UJ	0.04 U	0.04 U	0.04 U	**14.3**	**15.5**	0.041 U	**0.027 J**	14	140
Phenanthrene	µg/L	0.04 U	**0.26**	0.04 UJ	0.04 U	0.04 U	0.04 U	**3.8**	**4.1**	0.041 U	0.04 U	210	2100
Pyrene	µg/L	0.04 U	0.041 U	0.04 UJ	0.04 U	0.04 U	0.04 U	**0.97**	**1.1**	0.041 U	0.04 U	210	2100
Total Recoverable Petroleum Hydrocarbons (FL-PRO)													
TRPH	µg/L	**2400 J**	**8200 J**	**300 J**	**640**	**370 J**	**310 J**	**24300**	**24100**	505 UJ	**1500**	5000	50000

Notes:
NA Not applicable
J The analyte was positively identified: the associated numerical value is the approximate concentration of the analyte in the sample.
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
UJ The analyte was below the reported sample quantitation limit. However, the reported value is approximate.
UR The reported value of analyte was rejected due to failed laboratory QC. See data validation report in Appendix B.
µg/L Micrograms per Liter
Bold indicates the analyte was detected
[1] GCTL's are from Table 1 of the *Final Technical Report: Development of Cleanup Target Levels (CTLs) For Chapter 63-777, F.A.C., Center for Environmental & Human Toxicology. February 2005.*



TFS-MW-15		
Analyte	Conc.	GCTL
Benzene	0.6	10
Carbon disulfide	0.62 J	7000
Toluene	0.26 J	400
Xylene (total)	0.59 J	200
1-Methylnaphthalene	13.2	280
2-Methylnaphthalene	5.6	280
Acenaphthene	1.6	200
Acenaphthylene	0.11	2100
Anthracene	0.46	21000
Benzo(a)anthracene	0.13	0.5
Chrysene	0.094 J	48
Fluoranthene	1.4	2800
Fluorene	2.7	2800
Naphthalene	14.3	140
Phenanthrene	3.8	2100
Pyrene	0.97	2100
TRPH	24300	50000

TFS-MW-8D		
Analyte	Conc.	GCTL
TRPH	640	50000

TFS-MW-01		
Analyte	Conc.	GCTL
1-Methylnaphthalene	0.14	280
Acenaphthene	0.1	200
Acenaphthylene	0.034 J	2100
Fluoranthene	0.027 J	2800
Fluorene	0.066	2800
Naphthalene	0.14	140
TRPH	2400 J	50000

TFS-MW-05		
Analyte	Conc.	GCTL
Acenaphthene	0.024 J	200
TRPH	300 J	50000

TFS-MW-11		
Analyte	Conc.	GCTL
Bis(2-ethylhexyl)phthalate	5.9 J	60
TRPH	370 J	50000

TFS-MW-12		
Analyte	Conc.	GCTL
TRPH	310 J	50000

TFS-MW-16		
Analyte	Conc.	GCTL
All Analytes	ND	NA

TFS-MW-17		
Analyte	Conc.	GCTL
Carbon disulfide	0.89 J	7000
Acenaphthene	0.99	200
Fluoranthene	0.041 J	2800
Naphthalene	0.027 J	140
TRPH	1500	50000

TFS-MW-04		
Analyte	Conc.	GCTL
Benzene	0.3 J	10
1-Methylnaphthalene	49.3	280
2-Methylnaphthalene	13.6	280
Acenaphthene	0.5	200
Acenaphthylene	0.26	2100
Fluoranthene	0.035 J	2800
Fluorene	0.6	2800
Naphthalene	17.6	140
Phenanthrene	0.26	2100
TRPH	8200 J	50000

North

0 25 50 100
Feet

LEGEND

- Monitoring Well Location
- GCTL Groundwater Cleanup Target Level (Poor Quality)
- J Estimated
- TRPH Total Recoverable Petroleum Hydrocarbons
- Conc. Concentration

NOTES

1. Concentrations reported in micrograms per liter (µg/L)
2. Sample date: October 24-26, 2012

FIGURE 3-2
Compounds Detected in Groundwater
NAS Key West
Boca Chica Key, Florida

CH2MHILL.

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SECTION 4

Conclusions and Recommendations

The conclusions and recommendations for the site, based on the October 2012 groundwater monitoring event, are presented below.

4.1 Conclusions

4.1.1 Hydrogeology

- LNAPL was not detected in groundwater.
- During October 2012, groundwater was observed at depths ranging from 0.40 feet bgs at well TFS-MW-14 to 2.13 feet bgs at wells TFS-MW-01 and TFS-MW-03.
- Water table elevations beneath the site ranged from 1.69 to 2.57 feet msl in October 2012. In October 2012, the direction of groundwater flow across the site was radial from a groundwater high located at well TFS-MW-06. The radial flow is probably attributable to the fact that well TFS-MW-06 is located in an unpaved grassy area and receives more recharge.
- The average horizontal gradient across the site in October 2012 was estimated to be 0.005 ft/ft.
- Vertical gradients were calculated for October 2012 using well cluster TFS-MW-01/TFS-MW-8D. A downward hydraulic gradient of -0.006 ft/ft was measured in October 2012.
- The seepage velocity of the water table aquifer was calculated to be 0.30 ft/day or 109.5 ft/year.

4.1.2 Water Quality Evaluation

- Four of the five monitoring wells sampled in October 2012 indicate conductivity values greater than the range identified for potable freshwater, which indicates the TFS site groundwater to be slightly saline. The conductivity of groundwater increased with deep.
- Potable water with chloride levels at 250 mg/L and above exhibits a salty taste. Chloride concentrations in the shallow groundwater samples had chloride levels between 144 mg/L and 413 mg/L. Deeper groundwater (monitoring well TFS-MW-8D) had chloride levels of 6,100 mg/L. Comparison chloride concentrations to the USGS and FDEP standards indicates groundwater beneath the site is slightly to moderately saline
- Salinity concentrations in groundwater ranged from 1.08 ppt in shallow well TFS-MW-17 to 10.7 ppt in the deep monitoring well TFS-MW-8D. The data shows that groundwater is slightly saline in the upper portion of the water table aquifer and is moderately saline below a depth of 25 feet.
- Sulfate concentrations in the four shallow wells ranged from 1.9 mg/L to 96.6 mg/L, and are below the USGS and FDEP criterion of 250 mg/L. However, the deep well (TFS-MW-8D) had a sulfate concentration of 732 mg/L, indicating better connectivity to saline water at depths below 25 feet.
- TDS measured in site groundwater was compared against the 500 mg/L value for freshwater. The shallow wells had TDS values ranging between 786 mg/L to 1,290 mg/L and deep well (TFS-MW-8D) had a TDS value of 11,300 mg/L. All monitoring wells evaluated have higher TDS than what is considered freshwater.
- Based on comparison of the water quality data to USGS and FDEP potable water quality standards, groundwater quality beneath at the TFS site is saline. The data also indicates salinity increases with depth, and groundwater beneath the site is not of freshwater water quality, and could not be used as a potable water source without desalination. Because groundwater is not suitable for potable use, CH2M HILL recommends the site groundwater protection criteria should be based upon “poor quality” GCTLs. The evaluation of groundwater test results below is based on the use of the “poor quality” GCTLs.

4.1.3 Groundwater Evaluation

- Water quality parameters measured during well purging and sampling indicate that conditions are favorable for the biodegradation of hydrocarbons to occur.
- VOCs benzene, ethylbenzene, toluene, xylenes, and carbon disulfide were detected in monitoring well TFS-MW-15; benzene was the only VOC detected in well TFS-MW-04; carbon disulfide was the only VOC detected in well TFS-MW-17. All concentrations were below their respective GCTLs. No VOCs were detected in the remaining six monitoring wells.
- Thirteen SVOCs were detected in groundwater. SVOCs were detected in monitoring wells TFS-MW-01, TFS-MW-04, TFS-MW-05, TFS-MW-11, TFS-MW-15, and TFS-MW-17. Based on poor quality criteria, no SVOCs exceeded their respective GCTLs.
- SVOCs were not detected in wells TFS-MW-8D, TFS-MW-12, and TFS-MW-16.
- TRPH was detected eight of the nine monitoring wells sampled; concentrations ranged from 310J µg/L (well TFS-MW-12) to 24,300 µg/L (well TFS-MW-15). The GCTL for TRPH of 50,000 µg/L was not exceeded based upon the “poor quality” criterion.
- TRPH was not detected in well TFS-MW-16.

4.2 Recommendations

The overall site groundwater quality at the TFS site is saline and is not suitable for potable use. CH2M HILL recommends the site groundwater protection criteria should be based upon “poor quality” GCTLs.

Based upon the groundwater sampling for VOCs, SVOCs, and TRPH collected during the site assessment addendum (April 2012), the first quarter monitoring event (July 2012), and the October 2012 monitoring event, the data demonstrate that the “poor quality” GCTLs have been met for three consecutive groundwater sampling events. In accordance with the requirements of Chapter 62-770.690(8)(g) of the F.A.C., only two consecutive sampling events are required to demonstrate compliance at sites remediated through natural attenuation processes. Therefore, CH2M HILL recommends the following:

- Completion of an ecological risk assessment to evaluate the potential risk to ecological receptors in the wetland area to the west of the TFS
- NFA for groundwater
- Discontinuation of groundwater monitoring at the TFS site and preparation of a site rehabilitation completion report (SRCR) that includes a formal request for NFA
- Plugging and abandonment of existing groundwater monitoring wells

SECTION 5

References

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Appendix A
Well Purge and Sample Logs

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW Boca Chica

WELL NO: TFS-MW-01 | SAMPLE ID: QL-TFS-MW-01 | DATE: 10-25-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 7 feet to 12 feet | STATIC DEPTH TO WATER (feet): 2.05 | PURGE PUMP TYPE OR BAILER: pes.

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.95 feet – 2.05 feet) X 0.16 gallons/foot = 1.58 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5' | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5' | PURGING INITIATED AT: 1340 | PURGING ENDED AT: 1403 | TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1343	0.25	0.25	300	2.30	6.88	28.78	0.900	1.19	17.9	-232	None
1346	0.25	0.5	300	2.32	6.85	28.78	0.901	1.12	9.9	-240	"
1349	0.25	0.75	300	2.33	6.84	28.78	0.902	1.07	15.8	-246	"
1352	0.25	1.0	300	2.33	6.83	28.73	0.903	1.06	19.4	-251	"
1355	0.25	1.25	300	2.33	6.82	28.77	0.910	1.03	23.1	-255	"
1358	0.25	1.50	300	2.33	6.82	28.75	0.911	1.03	18.0	-258	"
1401	0.25	1.75	300	2.33	6.81	28.68	0.914	1.03	15.0	-259	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Monroe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1405 | SAMPLING ENDED AT: 1430

PUMP OR TUBING DEPTH IN WELL (feet): | TUBING MATERIAL CODE: | FIELD-FILTERED: Y (N) | Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: Y (N)

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40ml	HCl	120	6.81	8260	SM	300
	4	AG	1L		4L	6.81	8270D + SIM	APP	300
	2	AG	1L	H2SO4	2L	6.81	FL-PRO	APP	300

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE: FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU: optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW

WELL NO: TFS-MW-04 | SAMPLE ID: Q2-TFS-MW-04 | DATE: 10-26-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet | STATIC DEPTH TO WATER (feet): At TOC 0.00 | PURGE PUMP TYPE OR BAILER: peri

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.96 feet – 0.00 feet) X 0.16 gallons/foot = 1.91 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (0.0014 gallons/foot X feet) + 0.25 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 4 | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 4 | PURGING INITIATED AT: 1240 | PURGING ENDED AT: 1304 | TOTAL VOLUME PURGED (gallons): 2

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1243	0.25	0.25	300	0.08	6.83	28.13	1.37	2.22	8.5	-222	None, wind
1246	0.25	0.5	300	0.09	6.81	28.14	1.35	2.17	25.1	-227	"
1249	0.25	0.75	300	0.10	6.78	28.18	1.31	1.99	19.7	-248	"
1252	0.25	1.0	300	0.11	6.77	28.22	1.31	1.95	18.6	-254	"
1255	0.25	1.25	300	0.11	6.77	28.26	1.31	1.90	17.4	-259	"
1258	0.25	1.5	300	0.12	6.76	28.31	1.32	1.88	19.2	-262	"
1301	0.25	1.75	300	0.12	6.76	28.36	1.32	1.86	20.1	-265	"
1304	0.25	2.0	300	0.12	6.76	28.36	1.32	1.85	20.6	-267	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Manne | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1305 | SAMPLING ENDED AT: 1350

PUMP OR TUBING DEPTH IN WELL (feet): 4 | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: Y (N)

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40ml	HCl	120	6.76	8260B	SM	300
	4	AG	1L		4L	6.76	8270D/SIM	APP	300
	2	AG	1L	H2SO4	2L	6.76	FL-PRO	APP	300
	1	PP	500ml		500mL	6.76	300.1	APP	300
	1	PP	250ml	HNO3	250	6.76	6010	APP	300
	1	PP	250ml		250	6.76	SM2520/160.1	APP	300

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE: FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW

WELL NO: TFS-MW-05 | SAMPLE ID: Q2-TFS-MW-05 | DATE: 10-25-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet | STATIC DEPTH TO WATER (feet): 2.03 | PURGE PUMP TYPE OR BAILER: peri

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.95 feet – 2.03 feet) X 0.16 gallons/foot = 1.59 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 5' | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 5' | PURGING INITIATED AT: 1006 | PURGING ENDED AT: 1028 | TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (mL/min)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1009	0.25	0.25	300	2.09	6.80	30.22	0.492	1.11	12.9	11	none/rain
1012	0.25	0.5	300	2.10	7.10	30.11	0.531	1.03	7.5	-53	"
1015	0.25	0.75	300	2.10	7.21	30.27	0.530	0.99	15.1	-90	"
1018	0.25	1.0	300	2.10	7.30	30.39	0.530	0.97	23.1	-139	"
1021	0.25	1.25	300	2.10	7.34	30.42	0.532	1.01	26.3	-161	"
1024	0.25	1.5	300	2.10	7.38	30.45	0.534	1.02	29.1	-184	"
1027	0.25	1.75	300	2.10	7.41	30.49	0.535	1.03	33.3	-205	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Monroe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1030 | SAMPLING ENDED AT: 1055

PUMP OR TUBING DEPTH IN WELL (feet): 5' | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: (Y) N

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40mL	HCl	120	7.41	8260	SM	300
	4	AG	1L		4L	7.41	8270 /SIM	APP	300
	2	AG	1L	H2SO4	2L	7.41	FLPRO	APP	300

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKEN

WELL NO: TFS-MW-8D | SAMPLE ID: Q2-TFS-MW-8D | DATE: 10-26-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 28 feet to 33 feet | STATIC DEPTH TO WATER (feet): 0.83 | PURGE PUMP TYPE OR BAILER: per.

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (33.27 feet – 0.83 feet) X 0.16 gallons/foot = 5.19 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (0.0014 gallons/foot X ~~0.0014~~ 32.44 feet) + 0.25 gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 27 | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 27 | PURGING INITIATED AT: 1105 | PURGING ENDED AT: 1212 | TOTAL VOLUME PURGED (gallons): 5.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1111	0.5	0.5	300	0.83	6.95	27.18	9.10	1.18	87.2	-350	sulfur
1117		1.0	300	0.83	7.03	27.11	9.11	3.11	13.3	-347	"
1123		1.5	300	0.83	7.03	27.09	9.12	2.97	16.8	-348	"
1129		2.0	300	0.83	7.03	27.03	9.13	2.80	52.3	-353	"
1135		2.5	300	0.83	7.03	26.79	9.13	1.98	24.8	-358	"
1141		3.0	300	0.83	7.03	26.78	9.17	1.98	18.8	-359	"
1147		3.5	300	0.83	7.03	26.77	9.17	1.94	13.2	-360	"
1153		4.0	300	0.83	7.02	26.78	9.17	1.91	8.5	-361	"
1159		4.5	300	0.83	7.03	26.79	9.17	1.91	7.0	-362	"
1205		5.0	300	0.83	7.03	26.82	9.17	1.88	3.8	-363	"
1211	0.5	5.5	300	0.83	7.04	26.86	9.16	1.86	4.8	-364	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Monroe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1215 | SAMPLING ENDED AT: 1240

PUMP OR TUBING DEPTH IN WELL (feet): 27 | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: Y (N)

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40ml	HCl	120	7.04	8260	SM	300
	4	AG	1L		4L	7.04	8270 + SIM	APP	300
	2	AG	1L	H2SO4	2L	7.04	FL-PRO	APP	300
	1	PP	500ml		500	7.04	300.1 (Cl + SO4)	APP	300
	1	PP	250ml	HNO3	250	7.04	6010 (Mn)	APP	300
	1	PP	250ml		250	7.04	SM2520/160.1	APP	300

REMARKS: ~~TFS-MW-8D~~ ~~Q2-TFS-TB-3~~

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW Boca Chica

WELL NO: TFS-MW-11 | SAMPLE ID: Q2-TFS-MW-11 | DATE: 10-24-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet | STATIC DEPTH TO WATER (feet): 0.59 | PURGE PUMP TYPE OR BAILER: pes.

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.25 feet – 0.59 ~~feet~~ 10.66 feet) X 0.16 gallons/foot = 1.71 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6' | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6' | PURGING INITIATED AT: 1441 | PURGING ENDED AT: 1503 | TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1444	0.25	0.25	300	0.63	7.29	28.72	0.826	1.27	23.0	-258	sulfur
1447	0.25	0.5	300	0.65	7.25	28.77	0.787	1.43	21.2	-266	"
1450	0.25	0.75	300	0.67	7.22	28.60	0.704	1.19	20.7	-277	"
1453	0.25	1.0	300	0.67	7.21	28.74	0.709	1.15	16.1	-279	"
1456	0.25	1.25	300	0.67	7.21	28.69	0.707	1.05	16.4	-283	"
1459	0.25	1.5	300	0.69	7.20	28.69	0.716	1.06	16.7	-284	"
1502	0.25	1.75	300	0.68	7.20	28.70	0.718	1.05	14.5	-285	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Manroe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1505 | SAMPLING ENDED AT: 1550

PUMP OR TUBING DEPTH IN WELL (feet): 6' | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: Y (N)

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40mL	HCl	120	7.20	8260B	SM	300
	4	AG	1L	~~H2SO4~~	4L	7.20	8270D/SIM	APP	300
	2	AG	1L	H2SO4	2L	7.20	FL-PRO	APP	300

REMARKS: Jets "burning" ≈ 75', crosswind

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE: FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU: optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW Boca Chica

WELL NO: TFS-MW-~~04~~ 12 | SAMPLE ID: Q2-TFS-MW-~~04~~ 12 | DATE: 10-25-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 1 feet to 11 feet | STATIC DEPTH TO WATER (feet): 1.23 | PURGE PUMP TYPE OR BAILER: peri

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.30 feet – 1.23 feet) X 0.16 gallons/foot = 1.61 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + ~~2.2 gal~~ gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 4' | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 4' | PURGING INITIATED AT: 1144 | PURGING ENDED AT: 1204 | TOTAL VOLUME PURGED (gallons): 1.5

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1147	0.25	0.25	300	1.60	7.35	29.09	0.613	1.24	26.0	-134	none/rain
1150	0.25	0.5	300	1.60	7.35	29.18	0.616	1.18	41.3	-151	"
1153	0.25	0.75	300	1.60	7.36	29.37	0.632	1.10	57.5	-197	"
1156	0.25	1.0	300	1.60	7.36	29.35	0.675	1.06	70.9	-226	
1159	0.25	1.25	300	1.60	7.36	29.34	0.715	1.03	85.4	-242	"
1202	0.25	1.5	300	1.60	7.36	29.39	0.681	1.02	70.8	-248	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Monroe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1205 | SAMPLING ENDED AT: 1240

PUMP OR TUBING DEPTH IN WELL (feet): 4' | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N) (replaced) | DUPLICATE: Y (N)

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	3	CG	40ml	HCl	120 ml	7.36	8260	SM	300
	4	AG	1L		4L	7.36	8270 + SIM	APP	300
	2	AG	1L	H2SO4	2L	7.36	FEPRO	APP	300
							~~300.1~~		
							~~6010~~ XM		
							~~SM2520/160.1~~		

SAMPLE CONTAINER SPECIFICATION | SAMPLE PRESERVATION

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)
pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW Boca Chica

WELL NO: TFS-MW-15 | SAMPLE ID: Q2-TFS-MW-15 | DATE: 10-24-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: 2 feet to 10 feet | STATIC DEPTH TO WATER (feet): 0.58 | PURGE PUMP TYPE OR BAILER: peri

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (10.25 feet – 0.58 feet) X 0.16 gallons/foot = 1.55 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6' | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6' | PURGING INITIATED AT: 1247 | PURGING ENDED AT: 1309 | TOTAL VOLUME PURGED (gallons): 1.75

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1250	0.25	0.25	300	0.65	6.68	27.83	1.75	1.28	95.2	-327	sulfur
1253	0.25	0.5	300	0.66	6.67	27.89	1.75	1.24	98.1	-327	"
1256	0.25	0.75	300	0.65	6.64	27.97	1.76	1.12	115.0	-328	"
1259	0.25	1.0	300	0.65	6.63	28.10	1.78	1.05	173.0	-328	"
1302	0.25	1.25	300	0.65	6.61	27.72	1.82	1.15	181.0	-326	"
1305	0.25	1.5	300	0.66	6.60	27.84	1.82	1.08	91.8	-326	"
1308	0.25	1.75	300	0.65	6.61	28.03	1.82	1.01	159.0	-327	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Monroe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1310 | SAMPLING ENDED AT: 1410

PUMP OR TUBING DEPTH IN WELL (feet): 6' | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: (Y) N FD

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH	INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
	6	CG	40ml	HCl	240	6.61	8260B	Sm	300
	8	AG	1L		8L	6.61	8270D/SIM	APP	300
	4	AG	1L	H_2SO_4	4L	6.61	FL-PRO	APP	300
	~~mm~~ 1	PP	500ml		500	6.61	300.1	APP	300
	1	PP	250ml	HNO_3	250	6.61	6010	APP	300
	1	PP	250ml		250	6.61	SM2520/160.1	APP	300

REMARKS: FD: Q2-TFS-MW-15-Dup @ 1315

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE: FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS | SITE LOCATION: NASKW

WELL NO: TFS-MW-16 | SAMPLE ID: Q2-TFS-MW-16 | DATE: 10-26-12

PURGING DATA

WELL DIAMETER (inches): 2 | TUBING DIAMETER (inches): 3/16 | WELL SCREEN INTERVAL DEPTH: feet to feet | STATIC DEPTH TO WATER (feet): 0.97 | PURGE PUMP TYPE OR BAILER: per

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (12.15 feet – 0.97 feet) X 0.16 gallons/foot = 1.79 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6' | FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6' | PURGING INITIATED AT: 1415 | PURGING ENDED AT: 1439 | TOTAL VOLUME PURGED (gallons): 2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or µS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1418	0.25	0.25	300	1.12	7.56	28.43	2.17	2.15	27.5	-313	none/wind
1421	0.25	0.5	300	~~2.54~~ 1.14	7.54	28.71	2.19	1.96	21.3	-327	"
1424	0.25	0.75	300	~~2.53~~ 1.14	7.53	28.81	2.19	1.93	22.8	-332	"
1427	0.25	1.0	300	1.13	7.54	28.85	2.16	1.90	22.4	-336	"
1430	0.25	1.25	300	~~2.54~~ 1.14	7.54	28.88	2.14	1.87	22.0	-339	"
1433	0.25	1.5	300	1.13	7.53	28.92	2.12	1.84	22.7	-341	"
1436	0.25	1.75	300	1.14	7.53	28.93	2.12	1.83	23.0	-343	"
1439	0.25	2.0	300	1.14	7.53	28.92	2.11	1.82	23.3	-343	"

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47; 12" = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): 1/8" = 0.0006; 3/16" = 0.0014; 1/4" = 0.0026; 5/16" = 0.004; 3/8" = 0.006; 1/2" = 0.010; 5/8" = 0.016

PURGING EQUIPMENT CODES: B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; PP = Peristaltic Pump; O = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Manoe | SAMPLER(S) SIGNATURE(S): [signature] | SAMPLING INITIATED AT: 1440 | SAMPLING ENDED AT: 1505

PUMP OR TUBING DEPTH IN WELL (feet): 6' | TUBING MATERIAL CODE: PP | FIELD-FILTERED: Y (N) Filtration Equipment Type: | FILTER SIZE: N/A µm

FIELD DECONTAMINATION: PUMP (Y) N | TUBING Y (N (replaced)) | DUPLICATE: Y (N)

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 mL	HCl	~~240~~ 120	7.53	8260B	SM	300
	4	AG	1L		4L	7.53	8270D/SIM	APP	300
	2	AG	1L	H2SO4	2L	7.53	FL-PRO	APP	300
	1	PP	500 mL		500	7.53	300.1	APP	300
	1	PP	250 mL	HNO3	250	7.53	6010	APP	300
	1	PP	250 mL		250	7.53	SM2520/160.1	APP	300

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other (Specify)

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE: FS 2212, SECTION 3)

pH: ± 0.2 units Temperature: ± 0.2 °C Specific Conductance: ± 5% Dissolved Oxygen: all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) Turbidity: all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Form FD 9000-24

GROUNDWATER SAMPLING LOG

SITE NAME: TFS		SITE LOCATION: Boca Chica, NASKW	
WELL NO: TFS-MW-17	SAMPLE ID: Q2-TFS-MW-17		DATE: 10-24-12

PURGING DATA

WELL DIAMETER (inches): 2	TUBING DIAMETER (inches): 3/16	WELL SCREEN INTERVAL DEPTH: 2 feet to 12 feet	STATIC DEPTH TO WATER (feet): 0.36	PURGE PUMP TYPE OR BAILER: peri

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
(only fill out if applicable)
= (11.81 feet – 0.36 (11.45) feet) X 0.16 gallons/foot = 1.83 gallons

EQUIPMENT VOLUME PURGE: 1 EQUIPMENT VOL. = PUMP VOLUME + (TUBING CAPACITY X TUBING LENGTH) + FLOW CELL VOLUME
(only fill out if applicable)
= gallons + (gallons/foot X feet) + gallons = gallons

INITIAL PUMP OR TUBING DEPTH IN WELL (feet): 6'	FINAL PUMP OR TUBING DEPTH IN WELL (feet): 6'	PURGING INITIATED AT: 1005	PURGING ENDED AT: 1032	TOTAL VOLUME PURGED (gallons): 2.0

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	PURGE RATE (mL/gpm)	DEPTH TO WATER (feet)	pH (standard units)	TEMP. (°C)	COND. (circle units) µmhos/cm or mS/cm	DISSOLVED OXYGEN (circle units) mg/L or % saturation	TURBIDITY (NTUs)	ORP (mV)	ODOR (describe)
1009	0.25	0.25	300	0.42	7.19	28.47	2.45	0.99	20.7	-345	sulfur
1012	0.25	0.5	300	0.42	7.12	28.49	2.47	0.98	19.7	-345	"
1015	0.25	0.75	300	0.44	7.13	28.50	2.47	0.96	18.4	-345	"
1018	0.25	1.0	300	0.44	7.13	28.50	2.47	0.95	17.1	-345	"
1021	0.25	1.25	300	0.44	7.13	28.52	2.48	0.95	16.0	-345	"
1024	0.25	1.5	300	0.44	7.13	28.53	2.49	0.95	15.1	-345	"
1027	0.25	1.75	300	0.44	7.13	28.54	2.50	0.95	14.3	-345	"
1030	0.25	2.0	300	0.44	7.13	28.55	2.50	0.95	13.5	-345	"

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88
TUBING INSIDE DIA. CAPACITY (Gal./Ft.): **1/8"** = 0.0006; **3/16"** = 0.0014; **1/4"** = 0.0026; **5/16"** = 0.004; **3/8"** = 0.006; **1/2"** = 0.010; **5/8"** = 0.016

PURGING EQUIPMENT CODES: **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **PP** = Peristaltic Pump; **O** = Other (Specify)

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Nikki Monroe/CH2M HILL	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING INITIATED AT: 1035	SAMPLING ENDED AT: 1240
PUMP OR TUBING DEPTH IN WELL (feet): 6'	TUBING MATERIAL CODE: PP	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE: N/A µm
FIELD DECONTAMINATION: PUMP (Y) N	TUBING Y (N (replaced))	DUPLICATE: (Y) N' MS/MSD	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (mL per minute)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	9 ~~2~~ VOA	CG	40ml	HCl	360ml	7.13	8260B	SM	300
	12	AG	1L		12L	7.13	8270D/8270SIM	APP	300
	6	AG	1L	H2SO4	6L	7.13	FL-PRO	APP	300
	1	PP	500ml		500ml	7.13	300.1 (Sulfate/Chloride)	APP	300
	1	PP	250ml	HNO3	250ml	7.13	6010 Mn	APP	300
	1	PP	250ml		250ml	7.13	m2520/160.1	APP	300

REMARKS: Q2-TFS-MW-17-MS @ 1040 EB: Q2-TFS-MW-17-RS @ 0905
Q2-TFS-MW-17-MSD @ 1040

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

NOTES: 1. The above do not constitute all of the information required by Chapter 62-160, F.A.C.
2. STABILIZATION CRITERIA FOR RANGE OF VARIATION OF LAST THREE CONSECUTIVE READINGS (SEE FS 2212, SECTION 3)

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** all readings ≤ 20% saturation (see Table FS 2200-2); optionally, ± 0.2 mg/L or ± 10% (whichever is greater) **Turbidity:** all readings ≤ 20 NTU; optionally ± 5 NTU or ± 10% (whichever is greater)

Revision Date: February 12, 2009

Appendix B
Water IDW Non-Hazardous Waste Manifest

NON-HAZARDOUS WASTE MANIFEST	1 Generator ID Number	2 Page 1 of	3 Emergency Response Phone	4 Waste Tracking Number
	FL6170022952 1		800-852-8878	0001

5 Generator's Name and Mailing Address
Commanding Officer, Naval Air Station, Code PR 74
PO Box 9007 Attn: Vincent Sucemeli
Key West, FL 33040
Generator's Phone

Generator's Site Address (if different than mailing address)
Truck Fill Station NA
Key West, FL 33040

6 Transporter 1 Company Name: SWS Environmental Services — U S EPA ID Number: FLD-099-077-257

7 Transporter 2 Company Name — U S EPA ID Number

8 Designated Facility Name and Site Address
World Petroleum/PMI
3650 SW 47th Avenue
Davie, FL 33314
Facility's Phone: 954-327-0724 — U S EPA ID Number: FLD-980-709-075

	9 Waste Shipping Name and Description	10 Containers No	10 Containers Type	11 Total Quantity	12 Unit Wt/Vol	
1	Non Hazardous Liquids	001	DM	55	G	
2						
3						
4						

13 Special Handling Instructions and Additional Information

SWS # FL4-211- Truck # ~~4018~~ 4507 DPEP # ~~3302~~ 2520

14 GENERATOR S/OFFEROR'S CERTIFICATION I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations

Generator's/Offeror's Printed/Typed Name: Vincent Sucemeli — Signature: [signature] — Month 11 Day 29 Year 12

15 International Shipments ☐ Import to U S ☐ Export from U S — Port of entry/exit
Transporter Signature (for exports only) — Date leaving U S

16 Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Allen Potts — Signature: [signature] — Month 11 Day 29 Year 12

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17 Discrepancy

17a Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number

17b Alternate Facility (or Generator) — U S EPA ID Number
Facility's Phone

17c Signature of Alternate Facility (or Generator) — Month Day Year

18 Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Chad Gregory — Signature: [signature] — Month 12 Day 3 Year 12

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

Appendix C
Data Validation Summary and Laboratory Data

MEMORANDUM CH2MHILL

Data Validation Summary – NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd quarter 2012

TO: Greg Rowell/CH2M HILL/ATL

FROM: Camden Robinson/CH2M HILL/ATL

DATE: November 26th, 2012

The purpose of this memorandum is to present the results of the data validation process for the samples collected at the Naval Air Station in Key West, Florida. The samples were collected on July 17th, 2012 thru July 19th, 2012.

The specific samples and analytical fractions reviewed are summarized below in Table 1.

The Quality Control areas that were reviewed and the resulting findings are documented within each subsection that follows. This data was validated for compliance with the analytical method requirements. This process also included a review of the data to assess the accuracy, precision, and completeness based upon procedures described in the guidance documents such as the Environmental Protection Agency (EPA *National Functional Guidelines for Organic Data Review (EPA 2008) and Inorganic Data Review (EPA 2010)*. Quality assurance/quality control (QA/QC) summary forms and data reports were reviewed.

Samples were submitted to PEL a division of Spectrum Analytical Inc. of Tampa, Florida, for the following analyses: SW-846 8260B Appendix IX List Volatile Organic Compounds (VOC), SW-846 8270D Semi-volatile Organic Compounds (SVOC), SW-846 8270D SIM Polycyclic Aromatic Hydrocarbons, Total Petroleum Hydrocarbon by method FL-PRO, SW-846 6010B Manganese, EPA method 300 Chloride and Sulfate, and Standard Method 2540C Total Dissolved Solids.

Samples were also subcontracted to Mitkem Laboratories, a division of Spectrum Analytical Inc., in Warwick, Rhode Island for the following analysis: Standard Method 2520 Salinity.

Sample results that were not within the acceptance limits were appended with a qualifying flag, which consisted of a single- or double-letter code that indicated a possible problem with the data. The qualifying flags originated during the data review and validation processes. These also include the secondary, or the two/three-digit "sub-qualifier" flags. The secondary qualifiers provide the reasoning behind the assignment of a qualifier flag to the data. The secondary qualifiers are presented and defined below.

Attachment 1 lists the changes in data qualifiers, due to the validation process.

The following primary flags were used to qualify the data:

[=] Detected. The analyte was analyzed for and detected at the concentration shown.

[J] Estimated. The analyte was present but the reported value may not be accurate or precise.

[U] Undetected. The analyte was analyzed for but not detected above the method detection limit. The data validator may also apply this qualifier to indicate that a concentration was not detected at significantly greater than that in an associated blank.

[UJ] Detection limit estimated. The analyte was analyzed for but qualified as not detected; the result is estimated.

[UR] Rejected. The data is not useable. The absence of the analyte cannot be verified.

[R] Rejected. The data is not useable.

Secondary Qualifier Codes

Code	Definition
2SH	Second Source Accuracy High
2SL	Second Source Accuracy Low
BD	Blank Spike/Blank Spike Duplicate (LCS/LCSD) Precision
BL	Blank
BSH	Blank Spike/LCS Recovery High
BSL	Blank Spike/LCS Recovery Low
CCH	Continuing Calibration Verification Accuracy High
CCL	Continuing Calibration Verification Accuracy Low
DL	Dilution
FD	Field Duplicate
LD	Laboratory Duplicate
HT	Holding Time
ICH	Initial Calibration High
ICL	Initial Calibration Low
ISH	Internal Standard Area Response High
ISL	Internal Standard Area Response Low
LR	Linear Range (Exceeded calibration range)
MD	Matrix Spike/Matrix Spike Duplicate Precision
MSH	Matrix Spike and/or Matrix Spike Duplicate Recovery High
MSL	Matrix Spike and/or Matrix Spike Duplicate Recovery Low
OT	Other
RE	Re-extraction
RF	Response Factor
SSH	Spiked Surrogate Recovery High
SSL	Spiked Surrogate Recovery Low
TN	Tune
EMPC	Estimated Maximum Possible Concentration

Table 1 - Chemical Analytical Methods – Field and Quality Control Samples

SDG	Sample ID	Lab Sample ID	Matrix	Sample Type	Date Collected	Analyses Performed
3507407	Q2-TFS-MW-17-RS	350740701	WQ	EB	10/24/2012	[1], [2], [3], [4]
3507407	Q2-TFS-MW-17	350740702	GW	N	10/24/2012	[1], [2], [3], [4], [5], [6], [7], [8],
3507407	Q2-TFS-MW-17-MS	350740702	WQ	MS	10/24/2012	[1], [2], [3], [4]
3507407	Q2-TFS-MW-17-MSD	350740702	WQ	SD	10/24/2012	[1], [2], [3], [4]
3507407	Q2-TFS-MW-15	350740702	GW	N	10/24/2012	[1], [2], [3], [4], [5], [6], [7], [8],
3507407	Q2-TFS-MW-15-DUP	350740702	GW	FD	10/24/2012	[1], [2], [3], [4]
3507407	Q2-TFS-MW-11	350740702	GW	N	10/24/2012	[1], [2], [3], [4]
3507407	Q2-TFS-TB-1	350740702	WQ	TB	10/24/2012	[1]
3507432	Q2-TFS-MW-05	350743201	GW	N	10/25/2012	[1], [2], [3], [4]
3507432	Q2-TFS-MW-12	350743202	GW	N	10/25/2012	[1], [2], [3], [4]
3507432	Q2-TFS-MW-01	350743203	GW	N	10/25/2012	[1], [2], [3], [4]
3507432	Q2-TFS-TB-2	350743204	WQ	TB	10/25/2012	[1]
3507432	Q2-TFS-MW-8D	350743205	GW	N	10/26/2012	[1], [2], [3], [4], [5], [6], [7], [8],
3507432	Q2-TFS-MW-04	350743206	GW	N	10/26/2012	[1], [2], [3], [4], [5], [6], [7], [8],
3507432	Q2-TFS-MW-16	350743207	GW	N	10/26/2012	[1], [2], [3], [4], [5], [6], [7], [8],

MATRIX CODE

GW – Groundwater
WQ – Water Quality Control

SAMPLE TYPE CODE

N – Native Sample
FD – Field Duplicate
MS – Matrix Spike
SD – Matrix Spike Duplicate
TB – Trip Blank

ANALYSIS CODE

[1] – VOC –Volatile Organic Compounds by SW-846 method 8260B
[2] – SVOC – Semivolatile Organic Compounds by SW-846 method 8270D
[3] – PAH – Polycyclic Aromatic Hydrocarbons by SW-846 method 8270D SIM
[4] – TPH – Total Petroleum Hydrocarbon by method FL-PRO
[5] – Manganese by SW-846 6010B
[6] – Salinity by Standard Method 2520
[7] – Chloride and Sulfate by EPA method 300
[8] – TDS – Total Dissolved Solids by Standard Method 2540C

Organic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for organic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, equipment blanks, and trip blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Surrogate Recoveries** – Surrogate Compounds are added to each sample and the recoveries are used to monitor lab performance and possible matrix interference.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples** – Spike recovery is used to evaluate potential matrix interferences, as well as accuracy. Precision information is also determined by calculating the reproducibility between the recoveries of each spiked parameter.
- **Field Duplicate Samples** – These samples are collected to determine precision between a native and it's duplicate. This information can only be determined when target compounds are detected.
- **GC/MS Tuning** – The mass spectrum of the tuning compound is evaluated for method compliance. The criteria are established to verify the proper mass assignment and mass resolution.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **Internal Standards** – The internal standards (retention time and response) are evaluated for method compliance. The internal standards are used in quantitation of the target parameters and monitor the instrument sensitivity and response for stability during each analysis.

Major Technical Issues

No major technical issues were identified.

Minor Technical Issues for Volatile Organic Compounds (VOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

The initial calibration (ICAL), second source calibration (2nd Source), and continuing calibration (CCAL) average response factors for the analytes listed below were outside criteria:

TABLE 2
Response Factors Out of QC Limits: Volatile Organic Compounds
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	ICAL	Acrolein	0.0422	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

TABLE 2

Response Factors Out of QC Limits: Volatile Organic Compounds

NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	ICAL	Isobutyl Alcohol	0.00411	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR
3507407 3507432	ICAL	1,4-Dioxane	0.00315	0.0050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

TABLE 2

Response Factors Out of QC Limits: Volatile Organic Compounds

NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	ICAL	Propionitrile	0.04247	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR
3507407 3507432	2nd Source	1,4-Dioxane	0.0037	0.0050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

TABLE 2

Response Factors Out of QC Limits: Volatile Organic Compounds

NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	2nd Source	Isobutyl Alcohol	0.00394	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR
3507407 3507432	2nd Source	Propionitrile	0.04173	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

TABLE 2

Response Factors Out of QC Limits: Volatile Organic Compounds

NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	CCAL	1,4-Dioxane	0.00256	0.0050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR
3507407 3507432	CCAL	Isobutyl Alcohol	0.00393	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

TABLE 2
Response Factors Out of QC Limits: Volatile Organic Compounds
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	CCAL	Propionitrile	0.03882	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

The analytes listed are considered poor performers. All associated sample results were non-detect, therefore the quantitation limits reported for these compounds should be considered qualitatively invalid. This has been indicated by appending a "UR" qualifier next to the detection limit for these compounds in the associated field samples with a validation note of "RF" indicating that the results are not usable as the presence or absence of these compounds in these samples cannot be verified.

Blanks

The volatile organic compounds detected in the blank samples are listed in Table 3.

TABLE 3
Blank Contamination: Volatile Organic Compounds
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected	Flag Concentrations less than the value listed below
3507407	Q1-TFS-TB-3	TB	Acetone	2.4	ug/L	Q2-TFS-MW-15 Q2-TFS-MW-15-DUP	24 ug/L
3507432	Q1-TFS-TB-3	TB	Acetone	7.1	ug/L	Q2-TFS-MW-01 Q2-TFS-MW-8D	71 ug/L

Flags were applied to the analytes in the associated samples in the following manner:

When the analytes were detected in the trip blank, the detected compounds, that were less than 5 times the concentration detected for the analytes listed (10 times for common laboratory contaminants), were flagged "U" due to possible laboratory and/or field contamination with a validation note of "BL".

Laboratory Control Sample Recoveries

Laboratory control samples (LCS) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample Q2-TFS-MW-17. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits.

Field Duplicates

Field sample Q2-TFS-MW-15 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Minor Technical Issues for Semi-Volatile Organic Compounds (SVOCs) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

The initial calibration (ICAL), second source calibration (2nd Source), and continuing calibration (CCAL) average response factors for the analytes listed below were outside criteria:

TABLE 4

Response Factors / % Difference Out of QC Limits: Semi-Volatile Organic Compounds

NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	ICAL	Kepone	0.0171	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR
3507407 3507432	2nd Source	Kepone	0.03053	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR
3507407 3507432	2nd Source	Methapyriline	-29.8%	25%	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UJ

TABLE 4
Response Factors / % Difference Out of QC Limits: Semi-Volatile Organic Compounds
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Calibration	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	2nd Source	1,3,5-Trinitrobenzene	-43.6%	25%	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UJ
3507407 3507432	CCAL	Kepone	0.03022	0.050	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	UR

All associated sample results were non-detect, therefore the quantitation limits reported for these compounds should be considered qualitatively invalid for the low response factors or estimated for the low % difference recoveries. This has been indicated by appending a "UR" or "UJ" qualifier next to the detection limit for these compounds in the associated field samples with a validation note of "RF" or "2SL" indicating that the results are not usable as the presence or absence of these compounds in these samples cannot be verified or bias low estimates.

Blank Contaminants

There were no detections in the method blank samples.

Laboratory Control Sample Recoveries

The laboratory control sample recoveries were outside acceptable quality control limit as noted in Table 5 below.

TABLE 5

Laboratory Control Sample Recovery Out of QC Limits: Semi-Volatile Organic Compounds

NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	Laboratory Control Sample	a,a-Dimethylphenethylamine	0%	70-130	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	Non-Detects - UR

TABLE 5
Laboratory Control Sample Recovery Out of QC Limits: Semi-Volatile Organic Compounds
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407 3507432	Laboratory Control Sample	2-Naphthylamine	63%	70-130	Q2-TFS-MW-17 Q2-TFS-MW-15 Q2-TFS-MW-15-DUP Q2-TFS-MW-11 Q2-TFS-MW-05 Q2-TFS-MW-12 Q2-TFS-MW-01 Q2-TFS-MW-8D Q2-TFS-MW-04 Q2-TFS-MW-16	Non-Detects - UJ

The quantitation limits for the samples noted above were qualified as indicated above due to laboratory control sample and/or laboratory control sample duplicate recoveries were outside the acceptable limits that are listed in Table 5 with a validation note of "BSL" for low percent recovery. The results for a,a-dimethylphenethylamine were rejected and are considered not usable as the presence or absence of these compounds in these samples cannot be verified since the LCS sample was not recovered.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample Q2-TFS-MW-17. The matrix spike and matrix spike duplicate recoveries were outside acceptable quality control limit as noted in Table 6 below.

TABLE 6
Matrix Spike and Matrix Spike Duplicate Recovery Out of QC Limits: Semi-Volatile Organic Compounds
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407	Matrix Spike Matrix Spike Duplicate	a,a-Dimethylphenethylamine 1,4-Naphthoquinone 2-Naphthylamine	42%, 0% 0%, 7.7% 58.2%, 65.6%	70-130 28-143 70-130	Q2-TFS-MW-17	Non-Detects – UJ or Invalid UR

The quantitation limits for the sample noted above were qualified as estimated or invalid due to matrix spike and matrix spike duplicate recoveries were outside the acceptable limits that are listed in Table 6 with a validation note of "MSL" for low percent recovery.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits, except as noted in Table 7 below.

TABLE 7
Surrogate Recoveries Out of QC Limits: Semi-Volatile Organic Compounds
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507407	Q2-TFS-MW-15-DUP	2-Fluorobiphenyl p-Terphenyl-d14	45% 48.9%	50-116 50-135	Q2-TFS-MW-15-DUP	Non-Detects-UJ

The associated analytes for the samples listed above were qualified with a "UJ" for non-detects as estimated due to the surrogate recoveries were outside the acceptable limits that are listed in Table 7 with a validation note of "SSL" for low recovery.

Field Duplicates

Field sample Q2-TFS-MW-15 was collected and analyzed in duplicate. Field duplicate precision objectives were not met chrysene. The sample result was qualified as estimated J-FD.

Minor Technical Issues for Polycyclic Aromatic Hydrocarbons (PAH) Analyses

Holding Time

All samples analyses were performed within hold time.

GC/MS Instrument Performance

All GC/MS Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blank Contaminants

There were no detections in the equipment and method blank samples.

Laboratory Control Sample Analysis

Laboratory control samples (LCS) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample Q2-TFS-MW-17. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits, except as noted in Table 8 below.

TABLE 8
Surrogate Recoveries Out of QC Limits: PAH
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507432	Q2-TFS-MW-05	2-Fluorobiphenyl	40%	43-116	Q2-TFS-MW-05	Non-Detects-UJ Detects - J

The associated analytes for the samples listed above were qualified with a "J" for detects and an "UJ" for non-detects as estimated due to the surrogate recoveries were outside the acceptable limits that are listed in Table 8 with a validation note of "SSL" for low recovery.

Field Duplicates

Field sample Q2-TFS-MW-15 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 9 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 9
Dilutions: PAH
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

Sample ID	Analysis	Dilution Factor
Q2-TFS-MW-15	PAH	5X
Q2-TFS-MW-15-DUP	PAH	5X
Q2-TFS-MW-04	PAH	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Minor Technical Issues for Total Petroleum Hydrocarbon (TPH) Analyses

Holding Time

All samples analyses were performed within hold time.

Instrument Performance

All Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blank Contaminants

There were no detections in the equipment and method blank samples.

Blank Contaminants

There were no detections in the equipment and method blank samples except as noted below:

TABLE 10
Blank Contamination: TPH
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected	Flag Concentrations less than the value listed below
3507432	Method Blank	MB	TPH	280	ug/L	Q2-TFS-MW-16	1400 ug/L

Flags were applied to the analytes in the associated samples in the following manner:

When the analyte was detected in the method blank, the detected compounds that were less than 5 times the concentration detected for the analytes listed were flagged "U" due to possible laboratory contamination with a validation note of "BL".

Laboratory Control Sample Analysis

Laboratory control samples (LCS) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS samples.

Matrix Spike and Matrix Spike Duplicate Recoveries

A matrix spike and spike duplicate samples were collected and analyzed using field sample Q2-TFS-MW-17. The matrix spike / matrix spike duplicate (MS/MSD) accuracy and precision objectives were met.

Surrogate Recoveries

All surrogate recoveries were within acceptable quality control limits, except as noted in Table 11 below.

TABLE 11
Surrogate Recoveries Out of QC Limits: Total Petroleum Hydrocarbon
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

SDG	Sample	Parameter	Recovery	Recovery Limits	Associated Samples	Flag
3507432	Q2-TFS-MW-01	o-terphenyl	75.2%	82-142	Q2-TFS-MW-01	Detects-J
3507432	Q2-TFS-MW-04	o-terphenyl	54.5%	82-142	Q2-TFS-MW-04	Detects-J
3507432	Q2-TFS-MW-16	o-terphenyl	80.2%	82-142	Q2-TFS-MW-16	Non-Detect-UJ

The TPH results for the samples listed above were qualified with a "J" as estimated for detects or "UJ" for non-detects due to the surrogate recoveries were outside the acceptable limit that are listed in Table 11 with a validation note of "SSL".

Field Duplicates

Field sample Q2-TFS-MW-15 was collected and analyzed in duplicate. Field duplicate precision objectives were met.

Dilutions

The samples presented below in table 12 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 12
Dilutions: TPH
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

Sample ID	Analysis	Dilution Factor
Q2-TFS-MW-15	TPH	10X
Q2-TFS-MW-15-DUP	TPH	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Inorganic Parameters

Quality Control Review

The following list represents the QA/QC measures that were reviewed during the data quality evaluation procedure for inorganic data.

- **Holding Times** – The holding times are evaluated to verify that samples were extracted and analyzed within holding times.
- **Blank samples** – Method blanks, initial calibration, and continuing calibration blanks were provided for this project. Blank samples enable the reviewer to determine if an analyte may be attributed to sampling or laboratory procedures, rather than environmental contamination from site activities.
- **Lab Control Sample (LCS)** – This sample is a "controlled matrix", either laboratory reagent water or Ottawa sand, in which target compounds have been added prior to extraction/analysis. The recoveries serve as a monitor of the overall performance of each step during the analysis, including sample preparation.
- **Initial Calibration** – The initial calibration ensures that the instrument is capable of producing acceptable qualitative and quantitative data for the compounds of interest.
- **Continuing Calibration** – The continuing calibration checks satisfactory performance of the instrument and its predicted response to the target compounds.
- **ICP Serial Dilution** – The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high, the serial dilution analysis must agree within a 10% difference of the original determination after correction for dilution.
- **Post Digest Spike Sample** – The post digest spike sample indicates the possible presence of matrix interferences in the sample.

Minor Technical Issues for Manganese Analyses

Holding Time

All samples analyses were performed within hold time.

Instrument Performance

All Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blank Contaminants

There were no detections in initial calibration, continuing calibration, and method blank samples, except as noted below:

TABLE1 3
Blank Contamination: Manganese
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected	Flag Concentrations less than the value listed below
3507432	Method Blank	MB	Manganese	4.06	ug/L	Q2-TFS-MW-8D Q2-TFS-MW-16	20.3 ug/L

Flags were applied to the analytes in the associated samples in the following manner:

When the analyte was detected in the initial calibration blank, the detected compounds, that were less than 5 times the concentration detected for the analytes listed (10 times for common laboratory contaminants), were flagged "U" due to possible laboratory contamination with a validation note of "BL".

Interference Check Sample Analysis

The interference check standard solution analyses were within performance criteria.

Laboratory Control Sample Analysis

Laboratory control samples (LCS) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS samples.

Post Digest Analysis

Post digest recovery was within acceptable control limits.

Serial Dilution Analysis

Serial dilution recovery was within acceptable control limits.

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Minor Technical Issues for Chloride, Sulfate, Salinity, and Total Dissolved Solids (TDS) Analyses

Holding Time

All samples analyses were performed within hold time.

Instrument Performance

All Instrument Performance criteria were met.

Calibration

All Initial, 2nd Source, and Continuing Calibration criteria were met.

Blank Contaminants

There were no detections in initial calibration, continuing calibration, and method blank samples, except as noted below:

TABLE 14
Blank Contamination: Sulfate
NAS Key West Boca Chica / TFS – Groundwater Sampling 2nd Quarter 2012

SDG	Sample ID	Sample Type	Parameter	Lab Result	Units	Samples Affected	Flag Concentrations less than the value listed below
3507407	Q1-TFS-TB-2	ICB	Sulfate	0.385	mg/L	Q2-TFS-MW-15	1.9 mg/L x 10 dilution factor = 19

Flags were applied to the analytes in the associated samples in the following manner:

When the analytes were detected in the initial calibration blank, the detected compounds, that were less than 5 times the concentration detected for the analytes listed (10 times for common laboratory contaminants), were flagged "U" due to possible laboratory contamination with a validation note of "BL".

Laboratory Control Sample Analysis

Laboratory control samples (LCS) were prepared and analyzed with each sample preparation batch and analytical run. Laboratory accuracy objectives were met for all LCS samples.

Dilutions

The samples presented below in table 15 were analyzed at dilutions for the analysis indicated. These dilutions were required to prevent saturation of the instrument, to allow quantitation of the compounds within the linear range of the calibration curve, and/or to reduce the effects of the matrix on the target compounds. Positive results for compounds reported above the calibration range in the initial analysis have been reported from the diluted analyses.

TABLE 15
Dilutions: Chloride and Sulfate
NAS Key West Boca Chica / TFS –Groundwater Sampling 2nd Quarter 2012

Sample ID	Analysis	Dilution Factor
Q2-TFS-MW-15	Chloride and Sulfate	10X
Q2-TFS-MW-17	Chloride and Sulfate	10X
Q2-TFS-MW-04	Chloride	5X
Q2-TFS-MW-16	Chloride and Sulfate	10X
Q2-TFS-MW-8D	Chloride	100X
Q2-TFS-MW-8D	Sulfate	10X

Rejected Data

No data were rejected based upon the validation process for this sampling event.

Data Usability

A review of the analytical data submitted regarding the investigation of NAS Key West Boca Chica, TFS-Groundwater Sampling 2nd quarter 2012, by CH2M HILL has been completed. An overall evaluation of the data indicates that the sample handling, shipment, and analytical procedures have been adequately completed, and that the analytical results should be considered usable as qualified.

The data user can use the data recognizing the potential data biases indicated by the data qualifiers assigned to some results. Data was qualified for a subset of results based on method, initial calibration, or trip blank contamination, low response factors for the initial, second source, and/or continuing calibrations, low percent difference for second source, low surrogate recovery bias, low matrix recovery bias, and low laboratory control sample recovery bias. The data user should be cautioned about using results that have been rejected because of very low spike recovery bias since the presence or absence of these compounds cannot be verified

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 740701.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 740701.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 740701.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 740702.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1231

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10 UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.89	J	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 740702.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1231

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

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Form I

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VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 740702.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1231

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 740705.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1253

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2	
74-87-3	Chloromethane	0.64	U	0.32	0.64	1	
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1	
74-83-9	Bromomethane	0.86	U	0.43	0.86	1	
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4	
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1	
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5	
107-02-8	Acrolein	8	U	4	8	10	UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5	
75-15-0	Carbon disulfide	0.62	J	0.19	0.38	1	
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5	
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66	
107-13-1	Acrylonitrile	4	U	2	4	4	
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1	
67-64-1	Acetone	~~3.8~~	~~J~~	1.3	2.6	10	U-BL
78-93-3	2-Butanone	4	U	2	4	4	
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5	
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1	
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5	
71-43-2	Benzene	0.6		0.17	0.34	0.5	
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5	
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5	
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1	
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1	
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1	
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5	

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 740705.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1253

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.26	J	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 740705.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1253

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	0.59	J	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 740706.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1316

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2	
74-87-3	Chloromethane	0.64	U	0.32	0.64	1	
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1	
74-83-9	Bromomethane	0.86	U	0.43	0.86	1	
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4	
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1	
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5	
107-02-8	Acrolein	8	U	4	8	10	UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5	
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1	
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5	
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66	
107-13-1	Acrylonitrile	4	U	2	4	4	
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1	
67-64-1	Acetone	~~3.3~~	~~J~~	1.3	2.6	10	U-BL
78-93-3	2-Butanone	4	U	2	4	4	
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5	
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1	
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5	
71-43-2	Benzene	0.56		0.17	0.34	0.5	
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5	
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5	
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1	
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1	
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1	
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5	

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 740706.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1316

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.25	J	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

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VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 740706.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1316

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	0.88	J	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 740707.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1208

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10 UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 740707.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1208

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

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VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 740707.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1208

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740708 Lab File ID 740708.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1146

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.4	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740708 Lab File ID 740708.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1146

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740708 Lab File ID 740708.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1146

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 1812

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0126

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.99		0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.041	J	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.027	J	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 1948

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
90-12-0	1-Methylnaphthalene	13.3	E	0.02	0.04	0.05	R-DL
91-57-6	2-Methylnaphthalene	5.6		0.02	0.04	0.05	
83-32-9	Acenaphthene	1.6		0.02	0.04	0.05	
208-96-8	Acenaphthylene	0.11		0.02	0.04	0.05	
120-12-7	Anthracene	0.46		0.02	0.04	0.05	
56-55-3	Benzo(a)anthracene	0.13		0.02	0.04	0.05	
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05	
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05	
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05	
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05	
218-01-9	Chrysene	0.094		0.02	0.04	0.05	J-FD
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04	
206-44-0	Fluoranthene	1.4		0.02	0.04	0.05	
86-73-7	Fluorene	2.7		0.02	0.04	0.05	
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05	
91-20-3	Naphthalene	15.2	E	0.02	0.04	0.05	R-DL
85-01-8	Phenanthrene	3.8		0.02	0.04	0.05	
129-00-0	Pyrene	0.97		0.02	0.04	0.05	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15DL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705DL1 Lab File ID 40705D5.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0904

PercentSolids: 0 decanted : Dilution Factor: 5

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
90-12-0	1-Methylnaphthalene	13.2		0.1	0.2	0.25	=
91-57-6	2-Methylnaphthalene	5.4		0.1	0.2	0.25	R-DL
83-32-9	Acenaphthene	1.9		0.1	0.2	0.25	
208-96-8	Acenaphthylene	0.15	J	0.1	0.2	0.25	
120-12-7	Anthracene	0.49		0.1	0.2	0.25	
56-55-3	Benzo(a)anthracene	0.13	J	0.1	0.2	0.25	
50-32-8	Benzo(a)pyrene	0.2	U	0.1	0.2	0.25	
205-99-2	Benzo(b)fluoranthene	0.2	U	0.1	0.2	0.25	
191-24-2	Benzo(g,h,i)perylene	0.2	U	0.1	0.2	0.25	
207-08-9	Benzo(k)fluoranthene	0.2	U	0.1	0.2	0.25	
218-01-9	Chrysene	0.1	J	0.1	0.2	0.25	
53-70-3	Dibenzo(a,h)anthracene	0.2	U	0.1	0.2	0.2	
206-44-0	Fluoranthene	1.5		0.1	0.2	0.25	
86-73-7	Fluorene	3.2		0.1	0.2	0.25	
193-39-5	Indeno(1,2,3-cd)pyrene	0.2	U	0.1	0.2	0.25	
91-20-3	Naphthalene	14.3		0.1	0.2	0.25	=
85-01-8	Phenanthrene	4.2		0.1	0.2	0.25	R-DL
129-00-0	Pyrene	1		0.1	0.2	0.25	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2012

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
90-12-0	1-Methylnaphthalene	14.8	~~E~~	0.02	0.04	0.05	R-DL
91-57-6	2-Methylnaphthalene	6		0.02	0.04	0.05	
83-32-9	Acenaphthene	1.7		0.02	0.04	0.05	
208-96-8	Acenaphthylene	0.12		0.02	0.04	0.05	
120-12-7	Anthracene	0.48		0.02	0.04	0.05	
56-55-3	Benzo(a)anthracene	0.15		0.02	0.04	0.05	
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05	
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05	
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05	
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05	
218-01-9	Chrysene	0.12		0.02	0.04	0.05	J-FD
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04	
206-44-0	Fluoranthene	1.4		0.02	0.04	0.05	
86-73-7	Fluorene	2.9		0.02	0.04	0.05	
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05	
91-20-3	Naphthalene	16.9	~~E~~	0.02	0.04	0.05	R-DL
85-01-8	Phenanthrene	4.1		0.02	0.04	0.05	
129-00-0	Pyrene	1.1		0.02	0.04	0.05	

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUPDL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706DL1 Lab File ID 40706D5.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0927

PercentSolids: 0 decanted : Dilution Factor: 5

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
90-12-0	1-Methylnaphthalene	14		0.1	0.2	0.25	=
91-57-6	2-Methylnaphthalene	5.9		0.1	0.2	0.25	R-DL
83-32-9	Acenaphthene	2		0.1	0.2	0.25	
208-96-8	Acenaphthylene	0.13	J	0.1	0.2	0.25	
120-12-7	Anthracene	0.5		0.1	0.2	0.25	
56-55-3	Benzo(a)anthracene	0.15	J	0.1	0.2	0.25	
50-32-8	Benzo(a)pyrene	0.2	U	0.1	0.2	0.25	
205-99-2	Benzo(b)fluoranthene	0.2	U	0.1	0.2	0.25	
191-24-2	Benzo(g,h,i)perylene	0.2	U	0.1	0.2	0.25	
207-08-9	Benzo(k)fluoranthene	0.2	U	0.1	0.2	0.25	
218-01-9	Chrysene	0.11	J	0.1	0.2	0.25	
53-70-3	Dibenzo(a,h)anthracene	0.2	U	0.1	0.2	0.2	
206-44-0	Fluoranthene	1.5		0.1	0.2	0.25	
86-73-7	Fluorene	3.3		0.1	0.2	0.25	
193-39-5	Indeno(1,2,3-cd)pyrene	0.2	U	0.1	0.2	0.25	
91-20-3	Naphthalene	15.5		0.1	0.2	0.25	=
85-01-8	Phenanthrene	4.4		0.1	0.2	0.25	R-DL
129-00-0	Pyrene	1		0.1	0.2	0.25	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 995 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.3	U	2.1	4.3	4.3
62-75-9	N-Nitrosodimethylamine	4.5	U	2.2	4.5	4.5
62-53-3	Aniline	5.7	U	2.8	5.7	5.7
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3.1	6.1	6.1
108-95-2	Phenol	3.5	U	1.7	3.5	4.1
95-57-8	2-Chlorophenol	5.9	U	3	5.9	5.9
541-73-1	1,3-Dichlorobenzene	5.5	U	2.8	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.8	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.3	U	2.6	5.3	5.3
100-51-6	Benzyl alcohol	6.3	U	3.2	6.3	10.2
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.4	6.7	6.7
95-48-7	2-Methylphenol	5.3	U	2.6	5.3	5.3
67-72-1	Hexachloroethane	5.3	U	2.6	5.3	5.3
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3.1	6.1	6.1
106-44-5	4-Methylphenol	12.4	U	6.2	12.4	12.4
98-95-3	Nitrobenzene	2	U	1	2	4.1
78-59-1	Isophorone	7.8	U	3.9	7.8	7.8
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4.1
105-67-9	2,4-Dimethylphenol	4.7	U	2.3	4.7	4.7
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.6	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.2	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.3	U	2.6	5.3	5.3
106-47-8	4-Chloroaniline	6.1	U	3.1	6.1	6.1
87-68-3	Hexachlorobutadiene	5.1	U	2.6	5.1	5.1
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.8	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.7	U	0.84	1.7	4.1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.86	1.7	4.1
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.5	6.9	6.9
91-58-7	2-Chloronaphthalene	5.7	U	2.8	5.7	5.7
88-74-4	2-Nitroaniline	6.1	U	3.1	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3.1	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.7	U	2.8	5.7	5.7
99-09-2	3-Nitroaniline	5.7	U	2.8	5.7	5.7
51-28-5	2,4-Dinitrophenol	11.4	U	5.7	11.4	20.4
132-64-9	Dibenzofuran	5.5	U	2.8	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.7	U	2.8	5.7	5.7
100-02-7	4-Nitrophenol	8.2	U	4.1	8.2	8.2
7005-72-3	4-Chlorophenyl-phenylether	5.1	U	2.6	5.1	5.1
84-66-2	Diethylphthalate	5.7	U	2.8	5.7	5.7
100-01-6	4-Nitroaniline	3.1	U	1.5	3.1	4.1
534-52-1	4,6-Dinitro-2-methylphenol	8.2	U	4.1	8.2	8.2
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.5	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.7	U	2.3	4.7	4.7
118-74-1	Hexachlorobenzene	0.84	U	0.42	0.84	4.1
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.2
84-74-2	Di-n-butylphthalate	1.8	U	0.88	1.8	4.1
85-68-7	Butylbenzylphthalate	6.1	U	3.1	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.8	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	9	U	4.5	9	9
117-84-0	Di-n-octylphthalate	4.1	U	2	4.1	4.1
109-06-8	2-Picoline	8.2	U	4.1	8.2	8.2
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.8	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.2	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.9	U	1.9	3.9	4.1	
62-50-0	Ethyl methanesulfonate	5.1	U	2.6	5.1	5.1	
76-01-7	Pentachloroethane	5.1	U	2.6	5.1	20.4	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.8	5.5	5.5	
98-86-2	Acetophenone	8.2	U	4.1	8.2	8.2	
59-89-2	N-Nitrosomorpholine	6.1	U	3.1	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.8	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.6	U	16.3	32.6	32.6	UR-BSL, MSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.6	7.1	7.1	
1888-71-7	Hexachloropropene	4.1	U	2	4.1	4.1	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.8	5.5	5.5	
120-58-1	Isosafrole	5.3	U	2.6	5.3	5.3	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.5	U	2.2	4.5	4.5	
94-59-7	Safrole	5.1	U	2.6	5.1	5.1	
130-15-4	1,4-Naphthoquinone	6.3	U	3.2	6.3	6.3	UJ-MSL
99-65-0	1,3-Dinitrobenzene	5.1	U	2.6	5.1	5.1	
608-93-5	Pentachlorobenzene	4.5	U	2.2	4.5	4.5	
134-32-7	1-Naphthylamine	3.7	U	1.8	3.7	4.1	
91-59-8	2-Naphthylamine	5.1	U	2.6	5.1	5.1	UJ-BSL, MSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3.1	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.3	U	2.6	5.3	5.3	
106-50-3	p-Phenylenediamine	4.1	U	2	4.1	4.1	
62-44-2	Phenacetin	1.8	U	0.91	1.8	4.1	
92-67-1	4-Aminobiphenyl	4.1	U	2	4.1	4.1	
23950-58-5	Pronamide	1.6	U	0.83	1.6	4.1	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4.1	U	2	4.1	4.1	
88-85-7	Dinoseb	8.2	U	4.1	8.2	8.2	
56-57-5	4-Nitroquinoline-1-oxide	7.6	U	3.8	7.6	10.2	
91-80-5	Methapyriline	4.5	U	2.2	4.5	4.5	UJ-2SL
140-57-8	Aramite	8.2	U	4.1	8.2	8.2	
60-11-7	p-Dimethylaminoazobenzene	1.3	U	0.63	1.3	4.1	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4.1	
57-97-6	7,12-Dimethylbenz(a)anthracene	2	U	0.98	2	4.1	
56-49-5	3-Methylcholanthrene	4.5	U	2.2	4.5	4.5	
100-75-4	N-Nitrosopiperidine	5.7	U	2.8	5.7	5.7	
99-35-4	1,3,5-Trinitrobenzene	4.1	U	2	4.1	4.1	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.86	1.7	4.1	
465-73-6	Isodrin	5.3	U	2.6	5.3	5.3	
510-15-6	Chlorobenzilate	1.6	U	0.8	1.6	4.1	
143-50-0	Kepone	32.6	U	16.3	32.6	32.6	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.9	U	3	5.9	5.9	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3 UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5 UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

UJ-SSL

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	UJ-SSL
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL,SSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	UJ-SSL
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL,SSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	UJ-SSL
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

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Form I

C.L

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	UJ-SSL
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL,SSL
140-57-8	Aramite	8.1	U	4	8.1	8.1	UJ-SSL
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL, SSL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	UJ-SSL
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF,SSL
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	UJ-SSL

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	5.9	J	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

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Form I

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 407-1.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1411

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	505	U	252	505	505

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 407-2.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1433

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	1500		252	505	505

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 407-5D10.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1308

PercentSolids: 0 decanted : Dilution Factor: 10

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	24300		2520	5050	5050

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 407-6D10.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1352

PercentSolids: 0 decanted : Dilution Factor: 10

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	24100		2520	5050	5050

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 407-7.D

Sample wt/vol: 995 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1624

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	370	J	251	502	502

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	2.65	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture : _____

Color After : _____ Clarity After: _____ Artifacts: _____

Comments:

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	4.88	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: SB58938-01

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1.08			N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

C-1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: SB58938-02

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

C·Y

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	372			IC	3.4	6.8	10
1-01-0	Residue, Filterable (TDS)	1290			GR	10	20	20
3-03-5	Sulfate	96.6			IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	101.6	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	157			IC	3.4	6.8	10
1-01-0	Residue, Filterable (TDS)	1020			GR	10	20	20
3-03-5	Sulfate	7.5	J		IC	3.2	6.4	10

U-BL

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	99.2	90 - 115	

Color Before: _____ Clarity Before: _____ Texture : _____

Color After : _____ Clarity After: _____ Artifacts: _____

Comments:

C.A

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 743201.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1401

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2	
74-87-3	Chloromethane	0.64	U	0.32	0.64	1	
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1	
74-83-9	Bromomethane	0.86	U	0.43	0.86	1	
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4	
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1	
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5	
107-02-8	Acrolein	8	U	4	8	10	UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5	
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1	
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5	
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66	
107-13-1	Acrylonitrile	4	U	2	4	4	
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1	
67-64-1	Acetone	2.6	U	1.3	2.6	10	
78-93-3	2-Butanone	4	U	2	4	4	
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5	
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1	
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5	
71-43-2	Benzene	0.34	U	0.17	0.34	0.5	
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5	
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5	
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1	
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1	
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1	
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5	

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 743201.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1401

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 743201.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1401

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 743202.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1423

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10 UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 743202.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1423

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 743202.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1423

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 743203.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1446

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2	
74-87-3	Chloromethane	0.64	U	0.32	0.64	1	
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1	
74-83-9	Bromomethane	0.86	U	0.43	0.86	1	
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4	
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1	
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5	
107-02-8	Acrolein	8	U	4	8	10	UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5	
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1	
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5	
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66	
107-13-1	Acrylonitrile	4	U	2	4	4	
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1	
67-64-1	Acetone	~~1.8~~	~~J~~	1.3	2.6	10	U-BL
78-93-3	2-Butanone	4	U	2	4	4	
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5	
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1	
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5	
71-43-2	Benzene	0.34	U	0.17	0.34	0.5	
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5	
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5	
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1	
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1	
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1	
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5	

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Form I

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 743203.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1446

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	UR-RF
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 743203.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1446

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743204 Lab File ID 743204.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1338

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	7.1	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743204 Lab File ID 743204.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1338

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743204 Lab File ID 743204.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1338

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 743205.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1508

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2	
74-87-3	Chloromethane	0.64	U	0.32	0.64	1	
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1	
74-83-9	Bromomethane	0.86	U	0.43	0.86	1	
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4	
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1	
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5	
107-02-8	Acrolein	8	U	4	8	10	UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5	
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1	
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5	
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66	
107-13-1	Acrylonitrile	4	U	2	4	4	
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1	
67-64-1	Acetone	~~1.8~~	~~J~~	1.3	2.6	10	U-BL
78-93-3	2-Butanone	4	U	2	4	4	
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5	
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1	
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5	
71-43-2	Benzene	0.34	U	0.17	0.34	0.5	
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5	
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5	
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1	
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1	
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1	
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5	

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 743205.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1508

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

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VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 743205.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1508

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 743206.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1553

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10 UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.3	J	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 743206.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1553

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 743206.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1553

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 743207.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1531

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10 UR-RF
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 743207.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1531

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1	
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4	
108-88-3	Toluene	0.28	U	0.14	0.28	1	
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1	
97-63-2	Ethyl methacrylate	1	U	0.5	1	1	
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1	
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5	
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4	
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5	
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1	
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5	
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5	
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5	
100-42-5	Styrene	0.26	U	0.13	0.26	1	
75-25-2	Bromoform	0.38	U	0.19	0.38	1	
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26	
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1	
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2	
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4	
75-05-8	Acetonitrile	20	U	10	20	20	
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1	
123-91-1	1,4-Dioxane	20	U	10	20	40	UR-RF
78-83-1	Isobutyl alcohol	40	U	20	40	40	↓
126-98-7	Methacrylonitrile	2	U	1	2	10	
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1	
107-12-0	Propionitrile	20	U	10	20	20	UR-RF

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 743207.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1531

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2213

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05	UJ-SSL
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05	↓
83-32-9	Acenaphthene	0.024	J	0.02	0.04	0.05	J-SSL
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05	UJ-SSL
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05	
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05	
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05	
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05	
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05	
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05	
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05	
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04	
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05	
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05	
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05	
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05	
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05	
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2237

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2301

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
90-12-0	1-Methylnaphthalene	0.14		0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.1		0.02	0.04	0.05
208-96-8	Acenaphthylene	0.034	J	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.027	J	0.02	0.04	0.05
86-73-7	Fluorene	0.066		0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.14		0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 995 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2325

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 985 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2349

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
90-12-0	1-Methylnaphthalene	37.4	E	0.02	0.041	0.051	R-DL
91-57-6	2-Methylnaphthalene	10.4	E	0.02	0.041	0.051	
83-32-9	Acenaphthene	0.5		0.02	0.041	0.051	
208-96-8	Acenaphthylene	0.26		0.02	0.041	0.051	
120-12-7	Anthracene	0.041	U	0.02	0.041	0.051	
56-55-3	Benzo(a)anthracene	0.041	U	0.02	0.041	0.051	
50-32-8	Benzo(a)pyrene	0.041	U	0.02	0.041	0.051	
205-99-2	Benzo(b)fluoranthene	0.041	U	0.02	0.041	0.051	
191-24-2	Benzo(g,h,i)perylene	0.041	U	0.02	0.041	0.051	
207-08-9	Benzo(k)fluoranthene	0.041	U	0.02	0.041	0.051	
218-01-9	Chrysene	0.041	U	0.02	0.041	0.051	
53-70-3	Dibenzo(a,h)anthracene	0.041	U	0.02	0.041	0.041	
206-44-0	Fluoranthene	0.035	J	0.02	0.041	0.051	
86-73-7	Fluorene	0.6		0.02	0.041	0.051	
193-39-5	Indeno(1,2,3-cd)pyrene	0.041	U	0.02	0.041	0.051	
91-20-3	Naphthalene	13.6	E	0.02	0.041	0.051	R-DL
85-01-8	Phenanthrene	0.26		0.02	0.041	0.051	
129-00-0	Pyrene	0.041	U	0.02	0.041	0.051	

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04DL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206DL1 Lab File ID 43206D10.D

Sample wt/vol: 985 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1016

PercentSolids: 0 decanted : Dilution Factor: 10

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
90-12-0	1-Methylnaphthalene	49.3		0.2	0.41	0.51	=
91-57-6	2-Methylnaphthalene	13.6		0.2	0.41	0.51	=
83-32-9	Acenaphthene	0.62		0.2	0.41	0.51	R-DL
208-96-8	Acenaphthylene	0.32	J	0.2	0.41	0.51	
120-12-7	Anthracene	0.41	U	0.2	0.41	0.51	
56-55-3	Benzo(a)anthracene	0.41	U	0.2	0.41	0.51	
50-32-8	Benzo(a)pyrene	0.41	U	0.2	0.41	0.51	
205-99-2	Benzo(b)fluoranthene	0.41	U	0.2	0.41	0.51	
191-24-2	Benzo(g,h,i)perylene	0.41	U	0.2	0.41	0.51	
207-08-9	Benzo(k)fluoranthene	0.41	U	0.2	0.41	0.51	
218-01-9	Chrysene	0.41	U	0.2	0.41	0.51	
53-70-3	Dibenzo(a,h)anthracene	0.41	U	0.2	0.41	0.41	
206-44-0	Fluoranthene	0.41	U	0.2	0.41	0.51	
86-73-7	Fluorene	0.7		0.2	0.41	0.51	
193-39-5	Indeno(1,2,3-cd)pyrene	0.41	U	0.2	0.41	0.51	
91-20-3	Naphthalene	17.6		0.2	0.41	0.51	=
85-01-8	Phenanthrene	0.31	J	0.2	0.41	0.51	R-DL
129-00-0	Pyrene	0.41	U	0.2	0.41	0.51	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 985 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0013

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.041	U	0.02	0.041	0.051
91-57-6	2-Methylnaphthalene	0.041	U	0.02	0.041	0.051
83-32-9	Acenaphthene	0.041	U	0.02	0.041	0.051
208-96-8	Acenaphthylene	0.041	U	0.02	0.041	0.051
120-12-7	Anthracene	0.041	U	0.02	0.041	0.051
56-55-3	Benzo(a)anthracene	0.041	U	0.02	0.041	0.051
50-32-8	Benzo(a)pyrene	0.041	U	0.02	0.041	0.051
205-99-2	Benzo(b)fluoranthene	0.041	U	0.02	0.041	0.051
191-24-2	Benzo(g,h,i)perylene	0.041	U	0.02	0.041	0.051
207-08-9	Benzo(k)fluoranthene	0.041	U	0.02	0.041	0.051
218-01-9	Chrysene	0.041	U	0.02	0.041	0.051
53-70-3	Dibenzo(a,h)anthracene	0.041	U	0.02	0.041	0.041
206-44-0	Fluoranthene	0.041	U	0.02	0.041	0.051
86-73-7	Fluorene	0.041	U	0.02	0.041	0.051
193-39-5	Indeno(1,2,3-cd)pyrene	0.041	U	0.02	0.041	0.051
91-20-3	Naphthalene	0.041	U	0.02	0.041	0.051
85-01-8	Phenanthrene	0.041	U	0.02	0.041	0.051
129-00-0	Pyrene	0.041	U	0.02	0.041	0.051

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-25L
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-25L
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3	
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4	
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5	
76-01-7	Pentachloroethane	5	U	2.5	5	20.2	
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5	
98-86-2	Acetophenone	8.1	U	4	8.1	8.1	
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1	
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5	
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3	UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1	
1888-71-7	Hexachloropropene	4	U	2	4	4	
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5	
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2	
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4	
94-59-7	Safrole	5	U	2.5	5	5	
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3	
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5	
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4	
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4	
91-59-8	2-Naphthylamine	5	U	2.5	5	5	UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1	
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2	
106-50-3	p-Phenylenediamine	4	U	2	4	4	
62-44-2	Phenacetin	1.8	U	0.9	1.8	4	
92-67-1	4-Aminobiphenyl	4	U	2	4	4	
23950-58-5	Pronamide	1.6	U	0.82	1.6	4	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	RESULT	Q	MDL	LOD	LOQ	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3 UR-BSL
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5 UJ-BSL
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4	
88-85-7	Dinoseb	8.1	U	4	8.1	8.1	
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1	
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4	UJ-2SL
140-57-8	Aramite	8.1	U	4	8.1	8.1	
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4	
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4	
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4	
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4	
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6	
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4	UJ-2SL
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4	
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2	
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4	
143-50-0	Kepone	32.3	U	16.2	32.3	32.3	UR-RF
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8	

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 432-1.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1730

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	300	J	252	505	505

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 432-2.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1752

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	310	J	252	505	505

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 432-3.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1814

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
5289290-40-0	TPH	2400		252	505	505	J-SSL

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 432-5.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1837

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	640		252	505	505

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 432-6.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1859

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
5289290-40-0	TPH	8200		252	505	505	J-55L

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 432-7RE.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 11/02/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1756

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*	
5289290-40-0	TPH	360	JB	252	505	505	U5-BL, SSL

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	2.93	U		P	0.35	0.7	10

U-BL

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1342

C.1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	20.8			P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1342

CA

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	1.64	J		P	0.35	0.7	10

U-BL

Color Before: _____ Clarity Before: _____ Texture : _____

Color After : _____ Clarity After: _____ Artifacts: _____

Comments:

131112 1342

C.A

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: SB59199-01

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	10.7			N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

C.A

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: SB59199-02

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

CA

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: SB59199-03

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	11300			GR	10	20	20
3-03-5	Sulfate	732			IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	100.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

C-1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8DDL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205DL1

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	6100			IC	34	68	100

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	104.2	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

C-1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	786			GR	10	20	20
3-03-5	Sulfate	1.9			IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	98.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

C-1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04DL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206DL1

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	144			IC	1.7	3.4	5

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	100.8	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

C-1

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	413			IC	3.4	6.8	10
1-01-0	Residue, Filterable (TDS)	1100			GR	10	20	20
3-03-5	Sulfate	91.8			IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	99.4	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

n-k

PEL

A Division of SPECTRUM ANALYTICAL, INC. featuring HANNIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

3507407 MK

Page 1 of ____

Special Handling:
TAT- Indicate Date Needed: 3-8 day
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Greg Rowell
CH2M HILL
Atlanta, GA

Project Mgr.: Greg Rowell

Invoice To: Greg Rowell
– on file –

P.O. No.: ____ RQN: ____

Project No.: 426847.PP.FW.09
Site Name: NASKW TFS
Location: Boca Chica State: FL
Sampler(s): Nikki Monroe

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9=____ 10=____ 11=____

List preservative code below: 2 | 3 | 4

Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other ____

State specific reporting standards: per contract

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		8260B	8270D/8270 SIM	FL-PRO	300.1 (Chlorides, Sulfates)	6010 (Manganese)	SM 2520 (Salinity)	160.1 (TDS)	SM2540C (TSS)		Notes
-01	Q2-TFS-MW-17-RS	10-24-12	0905	G	W	3	6				3	X	X	X						EB
-02	Q2-TFS-MW-17	10-24-12	1035	G	GW	3	6		3		3	X	X	X	X	X	X			
-03	Q2-TFS-MW-17-MS	10-24-12	1040	G	GW	3	6				3	X	X							MS
-04	Q2-TFS-MW-17-MSD	10-24-12	1040	G	GW	3	6				3	X	X							MSD
-05	Q2-TFS-MW-15	10-24-12	1310	G	GW	3	6		3		3	X	X	X	X	X	X			
-06	Q2-TFS-MW-15-DUP	10-24-12	1315	G	GW	3	6				3	X	X							FD
-07	Q2-TFS-MW-11	10-24-12	1505	G	GW	3	6				3	X	X							
-08	Q2-TFS-TB-1	10-24-12	—	G	W	1					1	X								TB

☐ E-mail to greg.rowell@ch2m.com
EDD Format CH2M HILL
pH < 2 8260, FL-Pro, 6010

Condition upon receipt: ☒ Iced ☐ Ambient ☐ °C 4.6, 5.4, 4.8, 3.8

Relinquished by:	Received by:	Date:	Time:
[signature]	Fed Ex	10-24-12	1645
	[signature]	10/25/12	09:59

3507407

253

Spectrum Analytical, Inc.
8405 Benjamin Rd., Suite A
Tampa, FL 33634
(P) 813-888-9507 (F) 813-889-7128

CHAIN-OF-CUSTODY RECORD

Thursday, October 25, 2012 1:50:17 PM

WorkOrder: 3507407 SB58938 EM

Send to:
Spectrum Analytical, Inc.
11 Almgren Dr.
Agawam, MA 01001
Phone: 800-789-9115 FAX: 413-789-4076

Project: NAS Key West
Project Name NASKW TFS 426847.PP/FW.09

Report To: Mark Gudnason, Ext 1
Report Level: 3 MG
Report RLU or MDLU: ~~MDL~~ U LODU
J Code results between ~~MDL~~ DL and ~~RL~~ LOQ

Sample ID	LabID	Collection Date	Date Needed	Mtx	ST	Cont	Requested Tests: SM2520B	Comments
Q2-TFS-MW-17	350740702	10/24/2012 10:35:00 AM	11/8/2012	W	N	1	X	58938 01
Q2-TFS-MW-15	350740705	10/24/2012 1:10:00 PM	11/8/2012	W	N	1	X	02

Comments: DODv4.2 LOD=2xMDL. Send ELD.☐ / 8260B, 8270D, 6010C / Use only the clients samples for QC (MS/MSD). Do not report any samples that do not appear on the COC. In-house lab QC limits must accompany report, regardless if we are using them are not. Any preliminary reports are expected to contain analytical results/values that will NOT change from the results/values reported in the final data package. For 8270, SOW spike required. See Section Leader.☐

		Date/Time			Date/Time
Relinquished by:	[signature]	10/25/12 14:00	Received by:	[signature]	10/29/12 1215
Relinquished by:	Fedex		Received by:	Fedex	
Relinquished by:			Received by:		

15.1 °C

SPECTRUM ANALYTICAL, INC.
Featuring
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Page 1 of _____ 3507432 MLL

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 175 Metro Center Blvd, Warwick, RI 02886, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: 28 day
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Greg Rowell, CH2m Hill, Atlanta, GA
Telephone #: (770) 604 9182 x 54301
Project Mgr. Greg Rowell

Invoice To: Greg Rowell, CH2m Hill
P.O. No.: _____ RQN: _____

Project No.: 426847.PP.FW.09
Site Name: NASKW TFS
Location: Boca Chica Key State: FL
Sampler(s): Nikki Monroe

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 | 3 | 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: per contract

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	8260B	8270D + SIM	FL-PRO	300.1 (Sulfates, Chlorides)	6010 (manganese)	SM2520 (Salinity)	160.1 (TDS)		Notes
-01	Q2-TFS-MW-05	10-25-12	1030	G	GW	3	6			X	X	X						
-02	Q2-TFS-MW-12	10-25-12	1205	G	GW	3	6			X	X	X						
-03	Q2-TFS-MW-01	10-25-12	1405	G	GW	3	6			X	X	X						
-04	Q2-TFS-TB-2	10-25-12	—	G	W	2				X								
-05	Q2-TFS-MW-8D	10-26-12	1215	G	GW	3	6		3	X	X	X	X	X	X	X		
-06	Q2-TFS-MW-04	10-26-12	1305	G	GW	3	5 6 10/29/12		3	X	X	X	X	X	X	X		1 AMBER BROKEN IN TRANSIT
-07	Q2-TFS-MW-16	10-26-12	1440	G	GW	3	6		3	X	X	X	X	X	X	X		

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	Fed Ex	10-26-12	1700	4.7
	[signature]	10/29/2012	11:50	5.7
				3.3
				4.1

☒ EDD Format CH2m Hill
☒ E-mail to greg.rowell@ch2m.com
PH<2 8260, 6010, FL-Pro

Condition upon receipt:
☐ Ambient ☒ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

3507432

269

Date Reported:
07-Nov-12

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

CH2M Hill
115 Perimeter Center Place, NE
Suite 700
Atlanta, GA 30346-1278

Attn: Greg Rowell

Project # 3507399
Project: NASKW TFS Boca Chica 426847.PP.FW.09

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
350739901	Q2-Seawater	W	23-Oct-12 13:30	24-Oct-12 9:07
350739902	Q2-TFS-SW-03	W	23-Oct-12 14:00	24-Oct-12 9:07

Soil samples are reported on dry weight basis, unless otherwise noted.

Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis.

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet unless noted in the case narrative.

Please contact the laboratory at 813-888-9507 with any questions regarding the data contained in the laboratory report.

Florida	E84207
Texas	T104704408-12-4
South Carolina	96011001
North Dakota	R-178
California	07253CA
Louisiana	02025
Kansas	E-10385
Arkansas	11-036-1

NELAP ACCREDITED TNI LABORATORY

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2259 Testing

Respectfully Submitted,

Brian Spann
Laboratory Director
Spectrum Analytical, Inc. Florida Division

Table of Contents

Inorganics 3

Metals Data Package 6

Metals Inorganic Sample Data 10

Metals Inorganic QC Summary Data 13

Wet Chemistry Data Package 31

Wet Chemistry Data Package 31

Wetchem_sal Inorganic Sample Data 33

Wetchem_sal Inorganic QC Summary Data 36

Wet Chemistry Sample Data 48

Wet Chemistry QC Summary Data 52

Chain of Custody Documentation 73

Addendum 79

Appendix 82

Supplemental Data 83

End of Report 92

EXECUTIVE SUMMARY - Detection Highlights

3507399

SAMPLE ID: Q2-Seawater

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Sulfate	2790	50.0	MG/L	E300.1
Manganese	0.717 J	10.0	UG/L	SW6010B
Salinity	35.4	1.00	ppt (1000)	A2520B
Residue, Filterable (TDS	38200	20.0	MG/L	A2540C

SAMPLE ID: Q2-SeawaterDL1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	21100	500	MG/L	E300.1

SAMPLE ID: Q2-TFS-SW-03

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	27.8	1.00	MG/L	E300.1
Sulfate	3.00	1.00	MG/L	E300.1
Manganese	7.78 J	10.0	UG/L	SW6010B
Residue, Filterable (TDS	1300	20.0	MG/L	A2540C

071112 1420

Inorganics

071112 1420

Inorganic Data Qualifiers

C (Concentration) Qualifier - Entries and their meanings are:

J The reported value obtained was less than the RL but greater than or equal to the MDL.

E The reported value obtained was over calibration or linear range.

U The reported value obtained was less than the MDL or was not detected.

Q Qualifier - Entries and their meanings are:

U The reported value is estimated because of interference. An explanatory comment must be included under "Comments" on the Cover Page if the problem applies to all samples in this data package or on the individual FORM 1 if it is an isolated problem.

M Duplicate injection precision was not met (two analyses of the same sample did not agree).

N Spiked sample recovery not within control limits.

E Serial Dilution percent difference not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA).

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.

***** Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

X The data is flagged as rejected by analyst utilizing analytical judgement.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can apear in the same field.

M (Method) Qualifier - Enter one of the following:

P ICP
A Flame AA
F Furnace AA
CV Manual Cold Vapor AA
TC Total Organic Carbon
AS Semi-Automated Spectrophotometric
CA Midi-Distillation Spectrophotometric
T Titrimetric
C Manual Spectrophotometric
GR Gravimetric
NR Analyte was not required by your lab

071112 1420

Inorganic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for inorganic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

A Post Digestion Spike.

L Serial Dilution.

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Metals Data Package

071112 1420

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW6010B

IV. PREPARATION

Water samples were prepared according to Spectrum Analytical Inc. Laboratory's Standard Operating Procedures and EPA Method 3010A.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

All acceptance criteria were met.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

All acceptance criteria were met.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/30/2012

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica

Lab Code : PEL Case No.: SDG No.: 3507399

SOW No.:

EPA Sample No	Lab Sample ID
Q2-Seawater	350739901
Q2-TFS-SW-03	350739902

Were ICP interelement corrections applied?	Yes/No	Yes
Were ICP background corrections applied?	Yes/No	Yes
If yes - were raw data generated before application of background corrections?	Yes/No	No

Comments:

071112 1420

Metals Inorganic Sample Data

071112 1420

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-Seawater

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 350739901

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	0.717	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

071112 1420

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-SW-03

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 350739902

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	7.78	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

071112 1420

Metals Inorganic QC Summary Data

071112 1420

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

150776MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 150776MB

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	0.7	U		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

071112 1420

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Initial Calibration Source: 47792

Continuing Calibration Source: 47710

Concentration Units: (ug/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Manganese	400	393.000	98.2	500	508.000	101.6	506.000	101.2	P

ICV IDs: P= ICV1128523

CCV1 IDs: P= CCV1128528

CCV2 IDs: P= CCV1128540

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

071112 1420

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Initial Calibration Source:

Continuing Calibration Source: 47710

Concentration Units: (ug/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Manganese				500	498.000	99.6			P

ICV IDs:

CCV1 IDs: P= CCV1128549

CCV2 IDs:

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

071112 1420

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2B

CRDL STANDARD FOR AA AND ICP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

AA CRDL Standard Source:

ICP CRDL Standard Source: 48068

Concentration Units: UG/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Manganese				10	9.98	99.8		

Control Limits: No limits have been established by EPA at this time

071112 1420

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3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Preparation Blank Matrix (water/soil): WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Manganese	0.35	U	0.35	U	0.35	U	0.35	U	0.7	U	P

ICB IDs: P= ICB1128524

CCB1 IDs: P= CCB1128529

CCB2 IDs: P= CCB1128541

CCB3 IDs: P= CCB1128550

071112 1420

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

ICP ID#: ICAP2 ICSA Source: 47383

ICSAB Source: 47602

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Manganese	0	500	-0.26	465.407	93.1			

ICSA: ICS1128526

ICSAB: ICS1128527

071112 1420

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

350739205A

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Manganese	80 - 120	946.00		450.65		500	99.0		P

Comments:

071112 1420

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

150778LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Manganese	20	518		504		2.7		P

Comments:

071112 1420

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42 150777LCS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Solid LCS Source:

Aqueous LCS Source: 47790, 47357, 46091,

	Aqueous (ug/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Manganese	500	518	103.6				-	

071112 1420

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42 150778LCSD

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Solid LCS Source:

Aqueous LCS Source: 47790, 47357, 46091,

	Aqueous (ug/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Manganese	500	504	100.8				-	

071112 1420

U.S. EPA - CLP

9

SERIAL DILUTIONS

EPA Sample No.

350739205L

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Manganese	450.65		461.00		2.3		P

Comments:

071112 1420

U.S. EPA - CLP

10

METHOD DETECTION LIMITS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

ICP ID Number : ICAP2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Raw MDL (ug/L)	CRDL (ug/L)	MDL (ug/L)	Verification Date	M
Manganese	257.61	0.35	10	0.35	7/13/2012	P

Comments:

071112 1420

U.S. EPA - CLP

11A

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW.0
0

Lab Code : PEL Case No.: SAS No.: SDG No.: 3507399

ICP ID Number : ICAP2 Date: 12/11/2007

Analyte	Wave-length	Interelement Correction Factors for:													
		Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg
Manganese	257.61														

Comments:

071112 1420

U.S. EPA - CLP

11A

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW.0
0

Lab Code : PEL Case No.: SAS No.: SDG No.: 3507399

ICP ID Number : ICAP2 Date: 12/11/2007

Analyte	Wave-length	Interelement Correction Factors for:												
		Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	V	Zn
Manganese	257.61					0.514043		0.637384				1.127690		

Comments:

071112 1420

U.S. EPA - CLP

12

ICP LINEAR RANGES (SEMI-ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

ICP ID NUMBER : ICAP2 DATE : 12/8/2009

Analyte	Integ. Time (sec.)	Concentration UG/L	M
Manganese	1	5000	P

Comments:

071112 1420

U.S. EPA - CLP

13

PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Method : 6010

EPA Sample No:	Preparation Date	Weight (gram)	Volume (mL)
150776MB	25 Oct 12		50
150777LCS	25 Oct 12		50
150778LCSD	25 Oct 12		50
Q2-Seawater	25 Oct 12		50
Q2-TFS-SW-03	25 Oct 12		50

071112 1420

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Instrument ID Number : ICAP2 Method : P

Start Date : 10/26/2012 End Date : 10/26/2012

EPA Sample No.	D/F	Time	%R	Analytes																											
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CAL01	1	10:55																		X											
CAL02	1	11:01																													
CAL03	1	11:07																		X											
CAL04	1	11:13																		X											
CAL05	1	11:19																		X											
CAL06	1	11:24																		X											
ICV1128523	1	11:32																		X											
ICB1128524	1	11:37																		X											
CRD1128525	1	11:49																		X											
ICS1128526	1	11:56																		X											
ICS1128527	1	12:01																		X											
CCV1128528	1	12:06																		X											
CCB1128529	1	12:11																		X											
150776MB	1	12:50																		X											
150777LCS	1	12:57																		X											
150778LCSD	1	13:02																		X											
ZZZZZZ	1	13:07																													
350739205L	5	13:14																		X											
ZZZZZZ	1	13:20																													
ZZZZZZ	1	13:25																													
350739205A	1	13:30																		X											
ZZZZZZ	1	13:36																													
ZZZZZZ	1	13:41																													
CCV1128540	1	13:47																		X											
CCB1128541	1	13:53																		X											
Q2-Seawater	1	13:59																		X											
Q2-TFS-SW-03	1	14:05																		X											
ZZZZZZ	1	14:11																													
ZZZZZZ	1	14:18																													
ZZZZZZ	1	14:24																													
ZZZZZZ	1	14:30																													
ZZZZZZ	1	14:36																													
CCV1128549	1	14:41																		X											
CCB1128550	1	14:46																		X											

071112 1420

Wet Chemistry Data Package

071112 1420

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica

Lab Code : PEL Case No.: SDG No.: 3507399

SOW No.:

EPA Sample No	Lab Sample ID
Q2-Seawater	SB58766-01
Q2-TSF-SW-03	SB58766-02

Comments:

071112 1420

Wetchem_sal Inorganic Sample Data

071112 1420

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-Seawater

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: SB58766-01

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	35.4			N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

071112 1420

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TSF-SW-03

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: Water Lab Sample ID: SB58766-02

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

071112 1420

Wetchem_sal Inorganic QC Summary Data

071112 1420

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

Q2-SeawaterDUP1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 100

Concentration Units (mg/L or mg/kg): ppt (1000)

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Salinity	200	35.4		35.5		0.3		N/A

Comments:

071112 1420

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 1227157-SRM1

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (ppt ()

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Salinity		N/A	90	110	10	10.3	103	

Comments:

071112 1420

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 1227157-SRM2

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (ppt ()

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Salinity		N/A	90	110	10	10.3	103	

Comments:

071112 1420

U.S. EPA - CLP

10

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: Water

Concentration Units: ppt (1000)

PARAMETER	M	INSTRUMENT ID	DATE	CRDL	MDL	Raw MDL (UG/L)
Salinity	N/A			1	0.144	0.144

Comments:

071112 1420

Wet Chemistry Data Package

071112 1420

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method E300.1

IV. PREPARATION

There is no preparation step for this method.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met. No action required. The following ICB/CCB(s) had element concentrations below the RL:

ICB1128158 was analyzed on 10/25/12 11:55. The following analyte(s) were detected below RL: Sulfate at 0.38 mg/L.
Samples coded accordingly.

The hit in the blank is below the RL, therefore, no corrective action was taken.

2. Method Blanks:

All acceptance criteria were met.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

C. Spikes:

1. Laboratory Control Spikes (LCS):

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

Not applicable.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

Not applicable.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

Sample Q2-Seawater required a 50X dilution due to high concentration of the following analyte(s): Sulfate.
Sample Q2-Seawater required a 500X dilution due to high concentration of the following analyte(s): Chloride.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

Signature: _____
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/26/2012

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method A2540C

IV. PREPARATION

Water samples were prepared according to PEL Laboratory's Standard Operating Procedures and EPA Method 160.1.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Spectrum Analytical Inc. Lab Reference No./SDG: 3507399

Client: CH2M Hill

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

Not applicable.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

Not applicable.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:

Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/30/2012

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica

Lab Code : PEL Case No.: SDG No.: 3507399

SOW No.:

EPA Sample No	Lab Sample ID
Q2-Seawater	350739901
Q2-SeawaterDL1	350739901DL1
Q2-TFS-SW-03	350739902

Comments:

071112 1420

Wet Chemistry Sample Data

071112 1420

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-Seawater

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 350739901

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	38200			GR	10	10	20
3-03-5	Sulfate	2790			IC	16	32	50

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	102.4	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-SeawaterDL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 350739901DL1

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	21100			IC	170	340	500

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	99.6	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-SW-03

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 350739902

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	27.8			IC	0.34	0.68	1
1-01-0	Residue, Filterable (TDS)	1300			GR	10	10	20
3-03-5	Sulfate	3			IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	96.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

Wet Chemistry QC Summary Data

071112 1421

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

102412MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 102412MB

Level:(low/med) LOW Date Received: 10/24/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
3-03-5	Sulfate	0.64	U		IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	104.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

102512MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 102512MB

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	0.68	U		IC	0.34	0.68	1
3-03-5	Sulfate	0.64	U		IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	106.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

150813MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 42684

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Lab Sample ID: 150813MB

Level:(low/med) LOW Date Received: 10/26/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	10	U		GR	10	10	20

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

071112 1421

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2-CC

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Concentration Units: (mg/L)

Analyte	Initial Calibration				Continuing Calibration						
	Source Used	True	Found	%R (1)	Source Used	True	Found	%R (1)	Found	%R (1)	M
Chloride	46963	8	8.400	105.0	46963	8	8.200	102.5	8.200	102.5	IC
Residue, Filterabl											GR
Sulfate	46963	8	8.300	103.8	46963	8	8.200	102.5	8.200	102.5	IC

ICV IDs: IC= ICV1128185

CCV1 IDs: IC= CCV1128182

CCV2 IDs: IC= CCV1128183

(1) Control Limits: TOC: 75-125

Comments:

071112 1421

U.S. EPA - CLP

2-CC

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Concentration Units: (mg/L)

Analyte	Initial Calibration				Continuing Calibration						
	Source Used	True	Found	%R (1)	Source Used	True	Found	%R (1)	Found	%R (1)	M
Chloride	46963	8	8.300	103.8	46963	8	8.200	102.5	8.100	101.2	IC
Residue, Filterabl											GR
Sulfate	46963	8	8.200	102.5	46963	8	8.200	102.5	8.200	102.5	IC

ICV IDs: IC= ICV1128159

CCV1 IDs: IC= CCV1128156

CCV2 IDs: IC= CCV1128157

(1) Control Limits: TOC: 75-125

Comments:

071112 1421

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Preparation Blank Matrix (water/soil): WATER
WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/L
Percent R

Analyte	Initial Calib. Blank (mg/L)	C	Continuing Calibration Blank (mg/L)	C		C		C	Prepa-ration Blank	C	M
Chloride	0.34	U	0.34	U	0.34	U					IC
Residue, Filterable (TDS)									10	U	GR
Sulfate	0.32	U	0.32	U	0.32	U			0.64	U	IC

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	104.0	90 - 115	

ICB IDs: IC= ICB1128184

CCB1 IDs: IC= CCB1128180

CCB2 IDs: IC= CCB1128181

CCB3 IDs:

071112 1421

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Preparation Blank Matrix (water/soil): WATER
WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/L
Percent R

Analyte	Initial Calib. Blank (mg/L)	C	Continuing Calibration Blank (mg/L)	C		C		C	Prepa-ration Blank	C	M
Chloride	0.34	U	0.34	U	0.34	U			0.68	U	IC
Residue, Filterable (TDS)											GR
Sulfate	0.38	J	0.32	U	0.32	U			0.64	U	IC

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	106.0	90 - 115	

ICB IDs: IC= ICB1128158

CCB1 IDs: IC= CCB1128154

CCB2 IDs: IC= CCB1128155

CCB3 IDs:

071112 1421

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

102412LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): mg/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Sulfate	20	8.2		8.3		1.2		IC

Comments:

071112 1421

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

102512LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): mg/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Chloride	20	8.1		8.2		1.2		IC
Sulfate	20	8.1		8.2		1.2		IC

Comments:

071112 1421

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

150815LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): MG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Residue, Filterable (TDS)	20	266		258		3.1		GR

Comments:

071112 1421

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

102412LCS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Sulfate	46963	IC	75	125	8	8.2	102.5	

Comments:

071112 1421

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 102412LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Sulfate	46963	IC	75	125	8	8.3	103.8	

Comments:

071112 1421

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

102512LCS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Chloride	46963	IC	75	125	8	8.1	101.2	
Sulfate	46963	IC	75	125	8	8.1	101.2	

Comments:

071112 1421

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7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 102512LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Chloride	46963	IC	75	125	8	8.2	102.5	
Sulfate	46963	IC	75	125	8	8.2	102.5	

Comments:

071112 1421

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 150814LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (MG/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Residue, Filterable (TDS)	47993	GR	80	120	250	266	106.4	

Comments:

071112 1421

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 150815LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507399

Matrix: (soil/water) WATER

Concentration Units: (MG/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Residue, Filterable (TDS)	47993	GR	80	120	250	258	103.2	

Comments:

071112 1421

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10

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.PP.FW

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Matrix: Water

Concentration Units: mg/L

PARAMETER	M	INSTRUMENT ID	DATE	CRDL	MDL	Raw MDL (UG/L)
Chloride	IC	IC	10/10/2012	1	0.34	0.34
Residue, Filterable (TDS)	GR	HACH	7/22/2004	20	10	10
Sulfate	IC	IC	10/10/2012	1	0.32	0.32

Comments:

071112 1421

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14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.P

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Instrument ID Number : IC Method : IC

Start Date : 7/31/2012 End Date : 10/25/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
OICAL1	1	11:57		X
OICAL2	1	12:20		X
OICAL3	1	12:42		X
OICAL4	1	13:04		X
OICAL5	1	13:26		X
OICAL6	1	13:48		X
OICAL7	1	14:10		X
ICV1128185	1	11:17		X
ICB1128184	1	11:39		X
102412MB	1	12:01		X
102412LCS	1	12:23		X
102412LCSD	1	12:45		X
ZZZZZZ	1	13:07		
ZZZZZZ	1	13:29		
ZZZZZZ	1	13:51		
ZZZZZZ	1	14:13		
CCV1128182	1	15:09		X
CCB1128180	1	15:31		X
ZZZZZZ	1	16:04		
ZZZZZZ	1	16:26		
ZZZZZZ	1	16:48		
Q2-Seawater	50	17:10		X
ZZZZZZ	50	17:32		
ZZZZZZ	1	17:54		
ZZZZZZ	1	18:16		
ZZZZZZ	1	18:38		
ZZZZZZ	1	19:00		
CCV1128183	1	19:22		X
CCB1128181	1	19:44		X
ICV1128159	1	11:33		X
ICB1128158	1	11:55		X
102512MB	1	12:16		X
102512LCS	1	12:38		X
102512LCSD	1	13:00		X
ZZZZZZ	5	13:22		
ZZZZZZ	10	13:44		
ZZZZZZ	10	14:06		

071112 1421

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.P

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Instrument ID Number : IC Method : IC

Start Date : 7/31/2012 End Date : 10/25/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
ZZZZZZ	10	14:28		
Q2-SeawaterDL1	500	14:52		X
CCV1128156	1	15:14		X
CCB1128154	1	15:36		X
Q2-TFS-SW-03	1	15:58		X
ZZZZZZ	10	16:19		
ZZZZZZ	1	16:41		
ZZZZZZ	1	17:03		
ZZZZZZ	10	17:25		
CCV1128157	1	17:47		X
CCB1128155	1	18:09		X

* Chloride

* Dichloroacetate - DCA

* Sulfate

071112 1421

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14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS Boca Chica 426847.P

Lab Code : PEL Case No.: SAS No: SDG No.: 3507399

Instrument ID Number : HACH Method : GR

Start Date : 10/26/2012 End Date : 10/26/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
150813MB	1	10:40		X
150814LCS	1	10:43		X
150815LCSD	1	10:46		X
Q2-Seawater	1	10:49		X
SAMDUP	1	10:52		X
Q2-TFS-SW-03	1	10:55		X
ZZZZZZ	1	10:58		
ZZZZZZ	1	11:01		

* Residue, Filterable (TDS)

071112 1421

Chain of Custody Documentation

071112 1421

PEL

A DIVISION OF SPECTRUM ANALYTICAL, INC. featuring HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

3507399 MC

Page 1 of 1

Special Handling:
TAT- Indicate Date Needed: 28 days
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Greg Rowell
Northpark 400
1000 Abernathy Rd. Ste 1600
Atlanta, GA 30328
678-579-8067 fax
Project Mgr.: Greg Rowell (770) 604-9095

Invoice To: Greg Rowell
-same-
P.O. No.: _____ RQN: _____

Project No.: 426847.PP.FW.09
Site Name: TFS NASKW Boca Chica
Location: Key West State: FL
Sampler(s): Nikki Monroe

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9=_____ 10=_____ 11=_____

List preservative code below: 4

Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=_____ X2=_____ X3=_____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State specific reporting standards: per contract

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Chloride 300.1	Sulfate 300.1	Manganese 6010	Salinity SM2520	TDS 160.1 SM2540C	Nitrate 10261a	
-01	Q2-Seawater	10-23-12	13:30	G	SW				3	X	X	X	X	X		
-02	Q2-TFS-SW-03	10-23-12	14:00	G	SW				3	X	X	X	X	X		

☒ E-mail to greg.rowell@ch2m.com
EDD Format per contract
PHK 2 6010

Relinquished by:	Received by:	Date:	Time:
[signature]	Fed Ex	10-23-12	1600
	[signature]	10/24/12	09:07

Condition upon receipt: ☒ Iced ☐ Ambient ☐ °C 4.2

3507399

74

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8756 4331 4026

0200 Recipient's Copy

1 From

Date 10-23-12 [redacted]

Sender's Name [illegible] Phone [illegible]

Company [illegible]

Address [illegible] Dept./Floor/Suite/Room

City [illegible] State FL ZIP [illegible]

2 Your Internal Billing Reference 426847.PP.FIN.09

3 To

Recipient's Name [illegible] Phone [illegible]

Company [illegible]

Address [illegible] Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

City [illegible] State FL ZIP 33634

☐ HOLD Weekday FedEx location address REQUIRED. **NOT available for** FedEx First Overnight.

☐ HOLD Saturday FedEx location address REQUIRED. **Available ONLY for** FedEx Priority Overnight and FedEx 2Day to select locations.

8756 4331 4026

4 Express Package Service * To most locations.

NOTE: Service order has changed. Please select carefully.

Packages up to 150 lbs. *For packages over 150 lbs., use the new FedEx Express Freight US Airbill.*

Next Business Day

☐ FedEx First Overnight — Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☒ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

2 or 3 Business Days

☐ **NEW** FedEx 2Day A.M. — Second business morning.* Saturday Delivery NOT available.

☐ FedEx 2Day — Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

5 Packaging * Declared value limit $500.

☐ FedEx Envelope* ☐ FedEx Pak* ☐ FedEx Box ☐ FedEx Tube ☒ Other

6 Special Handling and Delivery Signature Options

☐ SATURDAY Delivery — **NOT available for** FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. *Fee applies.*

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

7 Payment *Bill to:*

Enter FedEx Acct. No. or Credit Card No. below.

☒ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

Obtain recip. Acct. No. ☐

[redacted]

Total Packages	Total Weight	Total Declared Value†	Credit Card Auth.
1	38 lbs.	$ ____ .00	

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

612

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3507399

pH LOG SHEET

WO#: 3507399

Client/Project NAS Key West

SampNumber	Method	Matrix		pH	Containers	Temp	Acid	
350739901	6010	W	<	2	(1)		HNO3	MKeohane 24-Oct-12
350739902	6010	W	<	2	(1)		HNO3	MKeohane 24-Oct-12

Sample Receipt Confirmation Sheet

Client Information

SDG:	3507399	**Level:**	3
Client:	CH2M Hill	**Date Rec'd:**	10/24/2012 9:07:00 AM
Profile:	91013	**Due Date:**	11/7/2012
Project:	Boca Chica Truck Fill Stand - JP-5	**Profile Name:**	NAS Key West

Sample Verification

Samples/Cooler Secure?	Yes	**COC Present?**	Yes
Temperature of Samples:	4.2	**All Samples on COC accounted For?**	Yes
Number of Coolers Received:	1	**All Samples Rec'd Intact?**	Yes
Temp Gun ID:	101722663	**Sample Vol. Sufficient For Analysis**	Yes
pH Verified?	Yes	**Samples Rec'd W/I Hold Time?**	Yes
pH WNL?	Yes	**Are All Samples to be Analyzed?**	Yes
Samples Received By:	Fed-Ex	**Correct Sample Containers?**	Yes
Tracking Number:	875643314026	**COC Comments written on COC?**	Yes
Profile Picked By:	MG	**Samplers Initials on COC?**	Yes
Soil Origin (Domestic/Foreign):		**Sample Date/Time Indicated?**	Yes
Site Location/Project on COC?	Yes	**TAT Requested:**	STD
Client Project # on COC?	Yes	**Client Requests Verbal Results?**	No
Project Mgr. Indicated on COC?	Yes	**Client Requests Faxed Results?**	No
COC relinquished/Dated by Client?	Yes	**Specific Subcontract Indicated?**	No
COC Received/Dated by SA?	Yes	**Written on Outside Lab Board?**	No
Written on Internal COC?	Yes	**Radioactivity Check?**	No
Lab to Conduct ALL Analyses?	No		

Comments

Specific tests noted on COC.

LABEL REVIEW TR

PEER REVIEW CF 10/25/2013

Client: CH2M Hill

WONo: 3507399 **Profile Name:** NAS Key West **Profile #:** 91013

MATRIX **W**

Sample #	Bottle	Parameter		Check	Received	Date
01	001	160.1	Total Dissolved Solids	In	MKeohane	10/24/2012 2:44:12 PM
01	001	160.1	Total Dissolved Solids	Out	Devon Thompson	10/26/2012 8:50:46 AM
01	001	160.1	Total Dissolved Solids	In	Devon Thompson	10/26/2012 12:00:47 PM
01	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	MKeohane	10/24/2012 2:44:12 PM
01	001	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/24/2012 3:25:45 PM
01	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/24/2012 3:44:22 PM
01	002	6010	Metals	In	MKeohane	10/24/2012 2:44:12 PM
01	002	6010	Metals	Out	Justin Bowman	10/25/2012 3:34:47 PM
01	002	6010	Metals	In	Justin Bowman	10/25/2012 4:35:30 PM
02	001	160.1	Total Dissolved Solids	In	MKeohane	10/24/2012 2:44:13 PM
02	001	160.1	Total Dissolved Solids	Out	Devon Thompson	10/26/2012 8:50:38 AM
02	001	160.1	Total Dissolved Solids	In	Devon Thompson	10/26/2012 12:00:44 PM
02	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	MKeohane	10/24/2012 2:44:13 PM
02	001	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/24/2012 3:25:48 PM
02	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/24/2012 3:44:17 PM
02	002	6010	Metals	In	MKeohane	10/24/2012 2:44:13 PM
02	002	6010	Metals	Out	Justin Bowman	10/25/2012 3:34:51 PM
02	002	6010	Metals	In	Justin Bowman	10/25/2012 4:35:33 PM

Addendum

071112 1421

Letter of Acceptance

Customer Name:	CH2M Hill
Date and Time Received:	10/24/2012 9:07:00 AM
Date to be Reported:	11/14/2012
Laboratory Submission Number/SDG:	3507399

Project: NASKW TFS Boca Chica 426847.PP.FW.09

Samples: The submission consisted of 2 samples, including QC, with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: SM2540C, 300.1, 6010, SM2520B_OL.

Sample Custody/COC discrepancies:

None.

Notes:

Tem,p 4.2
PH< 2 6010
300.1=Chloride and sulfate
6010=MN
SM2520 is sent to Agawam

Distribution of Report to:

CH2M Hill
Attn: Greg Rowell

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. Spectrum Analytical letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials.

Log-in Report

Level: 3

Total of: 8 analyses on 2 samples (including QC) *25-Oct-12*

Report/SDG #: 3507399

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-Seawater	350739901		W	10/23/2012 1:30:00 PM	10/24/2012 9:07:00 AM

Method		
SM2540C	Total Dissolved Solids	SM2540C
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
SM2520B_OL	Salinity	2520B

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-SW-03	350739902		W	10/23/2012 2:00:00 PM	10/24/2012 9:07:00 AM

Method		
SM2540C	Total Dissolved Solids	SM2540C
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
SM2520B_OL	Salinity	2520B

Appendix

071112 1421

Supplemental Data

Report Date:
05-Nov-12 14:49

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
8405 Benjamin Road Suite A
Tampa, FL 33634
Attn: Mark Gudnason

Project: NAS Key West - Key West, FL
Project #: 3507399

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB58766-01	Q2-Seawater	Water	23-Oct-12 13:30	25-Oct-12 09:55
SB58766-02	Q2-TSF-SW-03	Water	23-Oct-12 14:00	25-Oct-12 09:55

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 6 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The samples were received 1.4 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-Seawater SB58766-01	3507399	Water	23-Oct-12 13:30	25-Oct-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	**35.4**		ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-TSF-SW-03 SB58766-02	3507399	Water	23-Oct-12 14:00	25-Oct-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	0.144	U	ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1227157 - General Preparation										
Duplicate (1227157-DUP1)			**Source: SB58766-01**		Prepared & Analyzed: 05-Nov-12					
Salinity	**35.5**		ppt (1000)	0.144		35.4			0.3	200
Reference (1227157-SRM1)					Prepared & Analyzed: 05-Nov-12					
Salinity	**10.3**		ppt (1000)	0.144	10.0		103	90-110		
Reference (1227157-SRM2)					Prepared & Analyzed: 05-Nov-12					
Salinity	**10.3**		ppt (1000)	0.144	10.0		103	90-110		

Notes and Definitions

U	Analyte included in the analysis, but not detected at or above the MDL.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Nicole Leja

SB 58766 NB

Wednesday, October 24, 2012 2:48:53 PM

Spectrum Analytical, Inc.
8405 Benjamin Rd., Suite A
Tampa, FL 33634
(P) 813-888-9507 (F) 813-889-7128

CHAIN-OF-CUSTODY RECORD

WorkOrder: 3507399

Send to:
Spectrum Analytical, Inc.
11 Almgren Dr.
Agawam, MA 01001
Phone: 800-789-9115 FAX: 413-789-4076

Project: NAS Key West
Project Name TFS NASKW Boca Chica 426847.PP.FW.09

Report To: Mark Gudnason, Ext 1
Report Level: 3 MG
Report RLU or MDLU: ~~MDL~~ U LOD U
J Code results between ~~MDL~~ OL and ~~RL~~ LOQ

Sample ID	LabID	Collection Date	Date Needed	Mtx	ST	Cont	SM2520B										Comments
Q2-Seawater 58766-01	350739901	10/23/2012 1:30:00 PM	11/7/2012	W	n	1	X										
Q2-TFS-SW-03 ↓ 02	350739902	10/23/2012 2:00:00 PM	11/7/2012	W	N	1	X										

Comments: DODv4.2 LOD=2xMDL. Send ELD.☐ / 8260B, 8270D, 6010C / Use only the clients samples for QC (MS/MSD). Do not report any samples that do not appear on the COC. In-house lab QC limits must accompany report, regardless if we are using them are not. Any preliminary reports are expected to contain analytical results/values that will NOT change from the results/values reported in the final data package. For 8270, SOW spike required. See Section Leader.☐

		Date/Time			Date/Time
Relinquished by:	M.	10/24/12 ~~16~~ 20	Received by:		
Relinquished by:	FedEX	10/24/12	Received by:	NB	10/25/12 9:55 1.4 ICed
Relinquished by:			Received by:		

90

3507399

ORIGIN ID: PFA (813) 888-9507
SHIPPING
SPECTRUM ANALYTICAL
8405 BENJAMIN RD STE A

TAMPA, FL 33634
UNITED STATES US

SHIP DATE: 24OCT12
ACTWGT: 11.7 LB
CAD: 770932/CAFE2605
DIMS: 12x12x10 IN

BILL SENDER

TO SAMPLE RECEIVING
SPECTRUM ANALYTICAL
11 ALMGREN DRIVE

AGAWAM MA 01001
(800) 789-5115 REF:
INV:
PO: DEPT:

FedEx Express

THU - 25 OCT A2
PRIORITY OVERNIGHT

TRK# 0201 4640 0771 8648

XE EHTA

01001
MA-US BDL

Part # 156148-434 NRIT 06-06

End Of Report

071112 1421

Date Reported:
13-Nov-12

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

CH2M Hill
115 Perimeter Center Place, NE
Suite 700
Atlanta, GA 30346-1278

Attn: Greg Rowell

Project # 3507407
Project: NASKW TFS 426847.PP.FW.09

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
350740701	Q2-TFS-MW-17-RS	W	24-Oct-12 9:05	25-Oct-12 9:59
350740702	Q2-TFS-MW-17	W	24-Oct-12 10:35	25-Oct-12 9:59
350740703	Q2-TFS-MW-17-MS	W	24-Oct-12 10:40	25-Oct-12 9:59
350740704	Q2-TFS-MW-17-MSD	W	24-Oct-12 10:40	25-Oct-12 9:59
350740705	Q2-TFS-MW-15	W	24-Oct-12 13:10	25-Oct-12 9:59
350740706	Q2-TFS-MW-15-DUP	W	24-Oct-12 13:15	25-Oct-12 9:59
350740707	Q2-TFS-MW-11	W	24-Oct-12 15:05	25-Oct-12 9:59
350740708	Q2-TFS-TB-1	W	24-Oct-12 0:00	25-Oct-12 9:59

Soil samples are reported on dry weight basis, unless otherwise noted.

Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis.

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet unless noted in the case narrative.

Please contact the laboratory at 813-888-9507 with any questions regarding the data contained in the laboratory report.

Florida	E84207
Texas	T104704408-12-4
South Carolina	96011001
North Dakota	R-178
California	07253CA
Louisiana	02025
Kansas	E-10385
Arkansas	11-036-1

NELAP ACCREDITED TNI LABORATORY

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2259 Testing

Respectfully Submitted,

Brian Spann
Laboratory Director
Spectrum Analytical, Inc. Florida Division

Table of Contents

Organics 5

8260 Volatile Organics 8

8260 Sample Data 13

8260 QC Summary 32

8260 Standards Data 50

8270 SIM Semi-Volatile Organics 59

8270 SIM Sample Data 63

8270 SIM QC Summary 71

8270 SIM Standards Data 85

8270 Semi-Volatile Organics 91

8270 Sample Data 96

8270 QC Summary 117

8270 Standards Data 143

FL-PRO Organics 160

FL-PRO Sample Data 164

FL-PRO QC Summary 170

FL-PRO Standards Data 178

Inorganics 189

Metals Data Package 192

Metals Inorganic Sample Data 196

Metals Inorganic QC Summary Data 199

Wet Chemistry Data Package 217

Wet Chemistry Data Package 217

Wetchem sal Inorganic Sample Data 219

Wetchem sal Inorganic QC Summary Data 222

Wet Chemistry Sample Data 235

Wet Chemistry QC Summary Data 238

Chain of Custody Documentation 252

Addendum 265

Appendix 273

Supplemental Data 274

End of Report 283

EXECUTIVE SUMMARY - Detection Highlights

3507407

SAMPLE ID: Q2-TFS-MW-11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Bis(2-ethylhexyl)phthalat	5.90 J	8.9	UG/L	SW8270D
TPH	370 J	500	UG/L	FL-PRO

SAMPLE ID: Q2-TFS-MW-15

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	157	10.0	MG/L	E300.1
Sulfate	7.50 J	10.0	MG/L	E300.1
Manganese	4.88 J	10.0	UG/L	SW6010B
Acetone	3.80 J	10	UG/L	SW8260B
Benzene	0.600	0.50	UG/L	SW8260B
Carbon disulfide	0.620 J	1.0	UG/L	SW8260B
Toluene	0.260 J	1.0	UG/L	SW8260B
Xylene (total)	0.590 J	2.0	UG/L	SW8260B
2-Methylnaphthalene	5.60	0.050	UG/L	SW8270D-SIM
Acenaphthene	1.60	0.050	UG/L	SW8270D-SIM
Acenaphthylene	0.110	0.050	UG/L	SW8270D-SIM
Anthracene	0.460	0.050	UG/L	SW8270D-SIM
Benzo(a)anthracene	0.130	0.050	UG/L	SW8270D-SIM
Chrysene	0.0940	0.050	UG/L	SW8270D-SIM
Fluoranthene	1.40	0.050	UG/L	SW8270D-SIM
Fluorene	2.70	0.050	UG/L	SW8270D-SIM
Phenanthrene	3.80	0.050	UG/L	SW8270D-SIM
Pyrene	0.970	0.050	UG/L	SW8270D-SIM
TPH	24300	5000	UG/L	FL-PRO
Residue, Filterable (TDS	1020	20.0	MG/L	A2540C

SAMPLE ID: Q2-TFS-MW-15DL1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
1-Methylnaphthalene	13.2	0.25	UG/L	SW8270D-SIM
Naphthalene	14.3	0.25	UG/L	SW8270D-SIM

131112 1347

EXECUTIVE SUMMARY - Detection Highlights

3507407

SAMPLE ID: Q2-TFS-MW-15-DUP

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Acetone	3.30 J	10	UG/L	SW8260B
Benzene	0.560	0.50	UG/L	SW8260B
Toluene	0.250 J	1.0	UG/L	SW8260B
Xylene (total)	0.880 J	2.0	UG/L	SW8260B
2-Methylnaphthalene	6.00	0.050	UG/L	SW8270D-SIM
Acenaphthene	1.70	0.050	UG/L	SW8270D-SIM
Acenaphthylene	0.120	0.050	UG/L	SW8270D-SIM
Anthracene	0.480	0.050	UG/L	SW8270D-SIM
Benzo(a)anthracene	0.150	0.050	UG/L	SW8270D-SIM
Chrysene	0.120	0.050	UG/L	SW8270D-SIM
Fluoranthene	1.40	0.050	UG/L	SW8270D-SIM
Fluorene	2.90	0.050	UG/L	SW8270D-SIM
Phenanthrene	4.10	0.050	UG/L	SW8270D-SIM
Pyrene	1.10	0.050	UG/L	SW8270D-SIM
TPH	24100	5000	UG/L	FL-PRO

SAMPLE ID: Q2-TFS-MW-15-DUPDL1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
1-Methylnaphthalene	14.0	0.25	UG/L	SW8270D-SIM
Naphthalene	15.5	0.25	UG/L	SW8270D-SIM

SAMPLE ID: Q2-TFS-MW-17

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	372	10.0	MG/L	E300.1
Sulfate	96.6	10.0	MG/L	E300.1
Manganese	2.65 J	10.0	UG/L	SW6010B
Carbon disulfide	0.890 J	1.0	UG/L	SW8260B

131112 1347

EXECUTIVE SUMMARY - Detection Highlights

3507407

Acenaphthene	0.990	0.050	UG/L	SW8270D-SIM
Fluoranthene	0.0410 J	0.050	UG/L	SW8270D-SIM
Naphthalene	0.0270 J	0.050	UG/L	SW8270D-SIM
TPH	1500	500	UG/L	FL-PRO
Salinity	1.08	1.00	ppt (1000)	A2520B
Residue, Filterable (TDS	1290	20.0	MG/L	A2540C

SAMPLE ID: Q2-TFS-TB-1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Acetone	2.40 J	10	UG/L	SW8260B

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Organics

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Organic Data Qualifiers

U Indicates the analyte was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that analyte. The reporting limit can vary from sample to sample depending on dilution factors or the percent moisture adjustment when indicated.

J Indicates estimated value. It is used when the data indicates the presence of an analyte above the method detection limit (MDL) yet lower than the reporting limit.

B Indicates the analyte was found in the associated blank as well as in the sample. The notation indicates possible contamination of the sample.

E Indicates the value reported is above the highest calibration standard for that analyte. The sample should be analyzed at an appropriate dilution. "E" qualified values are estimations and the diluted result may be reported on another Form 1.

D Indicates the analyte has been identified in a dilution reanalysis. "D" qualifiers are used for samples that have been analyzed at a lesser dilution than required for accurate quantitation.

C The "C" qualifier indicates the presence of this analyte has been confirmed by GC/MS analysis.

P This qualifier is used for pesticide / Aroclor target analytes where there is greater than 25% difference for the detected concentration between the two GC columns.

N This qualifier indicates presumptive evidence of an analyte. This qualifier is only used for tentatively identified compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

X Data flagged as rejected by analyst utilizing analytical judgement.

131112 1347

Organic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for organic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

131112 1347

8260 Volatile Organics

131112 1347

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW8260B

IV. PREPARATION

Water samples were prepared by SW846/5030 for EPA8260B volatiles analysis. All aspects of sample preparation proceeded without exception.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:

LCS 103112LCS11 was analyzed with the water samples on 10/31/12. The following analyte(s) were recovered above criteria: 2-Hexanone at 132 % with

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

criteria of (55-130). No further action was taken, since marginal exceedance criteria were met.

Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

A client requested MS/SD set was analyzed.
All percent recovery and relative percent difference (RPD) criteria were met with the exception of:

SD - Q2-TFS-MW-17-MSD was analyzed with the water samples on 10/31/12. The following analyte(s) were recovered above criteria:2-Hexanone at 146 % with criteria of (55-130), Acrylonitrile at 129 % with criteria of (55-126), Ethyl methacrylate at 165 % with criteria of (73-121), Methyl iodide at 162 % with criteria of (75-152). The following analyte(s) exceeded RPD criteria:1,2,3-Trichloropropane at 20.4 % with criteria of (20), 1,2-Dibromo-3-chloropropane at 20.2 % with criteria of (20), 1,4-Dichloro-2-butene at 22.6 % with criteria of (20), 2-Hexanone at 27.5 % with criteria of (20), 4-Methyl-2-pentanone at 21.6 % with criteria of (20), Acrolein at 43.7 % with criteria of (20), Acrylonitrile at 33.8 % with criteria of (20), Chloroethane at 30.9 % with criteria of (20), Chloromethane at 24.5 % with criteria of (20), Dichlorodifluoromethane at 28.7 % with criteria of (20), Ethyl methacrylate at 49.5 % with criteria of (20), Ethylbenzene at 20.1 % with criteria of (20), Isobutyl alcohol at 21.1 % with criteria of (20), Methyl iodide at 22.3 % with criteria of (20), Trichlorofluoromethane at 25.1 % with criteria of (20), Vinyl acetate at 27.5 % with criteria of (20), Vinyl chloride at 22.2 % with criteria of (20).

No further action was taken based upon LCS recoveries. Samples coded accordingly.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.

Analytes were detected in Trip Blank Q2-TFS-TB-1. The following analyte(s) were detected below RL: Acetone at 2.4 ug/L.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

Signature:
Name: Brian C. Spanh Title: Lab Director

SIGNED: DATE: 11/05/2012

VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Method: 8260

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17-RS	350740701
Q2-TFS-MW-17	350740702
Q2-TFS-MW-15	350740705
Q2-TFS-MW-15-DUP	350740706
Q2-TFS-MW-11	350740707
Q2-TFS-TB-1	350740708

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8260 Sample Data

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VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 740701.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 740701.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 740701.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 740702.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1231

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.89	J	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 740702.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1231

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 740702.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1231

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

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Form I

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VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 740705.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1253

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.62	J	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	3.8	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.6		0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

131112 1348

Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 740705.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1253

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.26	J	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 740705.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1253

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	0.59	J	0.5	1	2

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Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 740706.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1316

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	3.3	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.56		0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

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Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 740706.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1316

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.25	J	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 740706.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1316

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	0.88	J	0.5	1	2

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Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 740707.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1208

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 740707.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1208

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 740707.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1208

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

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Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740708 Lab File ID 740708.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1146

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.4	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

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Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740708 Lab File ID 740708.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1146

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740708 Lab File ID 740708.D

Sample wt/vol: 5 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1146

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

131112 1348

Form I

8260 QC Summary

131112 1348

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

103112BLK12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 103112BLK12 Lab File ID: BLK12.D

Sample wt/vol: 5 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0954

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1

131112 1348

Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

103112BLK12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 103112BLK12 Lab File ID: BLK12.D

Sample wt/vol: 5 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0954

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

4

VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

103112BLK12

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID: BLK12.D Lab Sample ID: 103112BLK12

Instrument ID: VMS01 Date Extracted:

Matrix: WATER Date Analyzed: 10/31/12

Level:(low/med) LOW Time Analyzed: 0954

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	103112LCS11	103112LCS11	LCS11.D	10/31/12	0727
2	103112LCS11D	103112LCS11D	LCS11D.D	10/31/12	0750
3	Q2-TFS-MW-17-RS	350740701	740701.D	10/31/12	1123
4	Q2-TFS-TB-1	350740708	740708.D	10/31/12	1146
5	Q2-TFS-MW-11	350740707	740707.D	10/31/12	1208
6	Q2-TFS-MW-17	350740702	740702.D	10/31/12	1231
7	Q2-TFS-MW-15	350740705	740705.D	10/31/12	1253
8	Q2-TFS-MW-15-DUP	350740706	740706.D	10/31/12	1316
9	Q2-TFS-MW-17-MS	350740703	740703MS.D	10/31/12	1638
10	Q2-TFS-MW-17-MSD	350740704	740704SD.D	10/31/12	1700

COMMENTS:

Page 1 of 1

131112 1348

Form IV

2A

WATER VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507407

Column(1): DB-624 ID: 0.18 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
103112BLK12	102.0	100.0	113.0	107.0			0
103112LCS11	101.0	102.0	107.0	106.0			0
103112LCS11D	99.6	102.0	103.0	102.0			0
Q2-TFS-MW-11	99.6	98.0	111.0	105.0			0
Q2-TFS-MW-15	100.0	102.0	111.0	102.0			0
Q2-TFS-MW-15-DUP	98.2	104.0	108.0	102.0			0
Q2-TFS-MW-17	104.0	103.0	114.0	110.0			0
Q2-TFS-MW-17-MS	103.0	105.0	111.0	105.0			0
Q2-TFS-MW-17-MSD	101.0	101.0	108.0	102.0			0
Q2-TFS-MW-17-RS	100.0	98.6	111.0	101.0			0
Q2-TFS-TB-1	97.2	96.8	110.0	100.0			0

Control Limits

S1	=	Dibromofluoromethane	85 -	115
S2	=	Toluene-d8	85 -	120
S3	=	4-Bromofluorobenzene	75 -	120
S4	=	1,2-Dichloroethane-d4	70 -	120

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out
Control limit source: (lab/method) METHOD

Form II

131112 1348

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: BFB11.D BFB Injection Date: 10/30/12

Instrument ID: VMS01 BFB Injection Time: 0619

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	18.2	
75	30.0 - 60.0% of mass 95	48.6	
95	Base Peak, 100% relative abundance	100	
96	5.0 - 9.0% of mass 95	6.5	
173	Less than 2.0% of mass 174	1	(1.2)1
174	50.0 - 100.0% of mass 95	81.9	
175	5.0 - 9.0% of mass 174	6.1	(7.44)1
176	95.0 - 101% of mass 174	79	(96.44)1
177	5.0 - 9.0% of mass 176	4.8	(6.14)2

1-Value is % of mass 174

2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1129184	80PPB	80PPB.D	10/30/12	0816
2	STD1129183	60PPB	60PPB.D	10/30/12	0838
3	STD1129181	50PPB	50PPB.D	10/30/12	0901
4	STD1129178	20PPB	20PPB.D	10/30/12	0923
5	STD1129175	10PPB	10PPB.D	10/30/12	0959
6	STD1129182	5PPB	5PPB.D	10/30/12	1022
7	STD1129179	2PPB	2PPB.D	10/30/12	1044
8	STD1129180	500PPT	500PPT.D	10/30/12	1129
9	STD1129177	200PPT	200PPT.D	10/30/12	1151
10	STD1129176	1PPB	1PPBR.D	10/30/12	1214
11	SSC1129192	SEC12	SEC12.D	10/30/12	1335

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: BFB11.D BFB Injection Date: 10/31/12

Instrument ID: VMS01 BFB Injection Time: 0611

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	19.3	
75	30.0 - 60.0% of mass 95	50.7	
95	Base Peak, 100% relative abundance	100	
96	5.0 - 9.0% of mass 95	6.9	
173	Less than 2.0% of mass 174	1.2	(1.46)1
174	50.0 - 100.0% of mass 95	80	
175	5.0 - 9.0% of mass 174	5.8	(7.2)1
176	95.0 - 101% of mass 174	77	(96.15)1
177	5.0 - 9.0% of mass 176	4.9	(6.35)2

1-Value is % of mass 174

2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129215	103112CCV11	50CCV11.D	10/31/12	0649
2	103112LCS11	103112LCS11	LCS11.D	10/31/12	0727
3	103112LCS11D	103112LCS11D	LCS11D.D	10/31/12	0750
4	103112BLK12	103112BLK12	BLK12.D	10/31/12	0954
5	Q2-TFS-MW-17-RS	350740701	740701.D	10/31/12	1123
6	Q2-TFS-TB-1	350740708	740708.D	10/31/12	1146
7	Q2-TFS-MW-11	350740707	740707.D	10/31/12	1208
8	Q2-TFS-MW-17	350740702	740702.D	10/31/12	1231
9	Q2-TFS-MW-15	350740705	740705.D	10/31/12	1253
10	Q2-TFS-MW-15-DUP	350740706	740706.D	10/31/12	1316
11	Q2-TFS-MW-17-MS	350740703	740703MS.D	10/31/12	1638
12	Q2-TFS-MW-17-MSD	350740704	740704SD.D	10/31/12	1700

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID (Standard): 50PPB.D Date Analyzed: 10/30/2012

Instrument ID: VMS01 Time Analyzed: 9:01

GC Column: DB-624 ID: 0.18 (mm)

Matrix: (soil/water) W Heated Purge: (Y/N) No

		IS1 AREA	#	RT	IS2 AREA	#	RT	IS3 AREA	#	RT
	MID CAL STD	2341238		6.62	1790415		9.15	1032933		10.54
	UPPER LIMIT	4682476		7.12	3580830		9.65	2065866		11.04
	LOWER LIMIT	1170619		6.12	895207.5		8.65	516466.5		10.04
	EPA SAMPLE NO.									
1	103112LCS11	2283342		6.62	1713446		9.15	917859		10.54
2	103112LCS11D	2212247		6.62	1647146		9.15	900481		10.54
3	103112BLK12	2098916		6.62	1537177		9.15	734705		10.54
4	Q2-TFS-MW-17-RS	2138362		6.62	1532539		9.15	751096		10.54
5	Q2-TFS-TB-1	2193271		6.62	1564184		9.15	760076		10.54
6	Q2-TFS-MW-11	2166041		6.62	1541047		9.15	760751		10.54
7	Q2-TFS-MW-17	2078075		6.62	1554981		9.15	764988		10.54
8	Q2-TFS-MW-15	2140386		6.62	1656990		9.15	836149		10.54
9	Q2-TFS-MW-15-DUP	2198551		6.62	1716705		9.15	895434		10.54
10	Q2-TFS-MW-17-MS	2280930		6.62	1731524		9.15	912578		10.54
11	Q2-TFS-MW-17-MSD	2432842		6.62	1784259		9.15	952141		10.54

IS1 = Fluorobenzene

IS2 = Chlorobenzene-d5

IS3 = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1348

FORM VIII

8

VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: DB-624 ID: 0.18 (mm) Init. Calib. Date: 10/30/12

Instrument ID: VMS01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 5.88 S2 : 8.12 S3 : 9.88 S4 : 6.25

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	103012BFB11	103012BFB11	BFB11.D	10/30/12	0619				
2	STD1129184	80PPB	80PPB.D	10/30/12	0816				
3	STD1129183	60PPB	60PPB.D	10/30/12	0838	5.88	8.12	9.88	6.25
4	STD1129181	50PPB	50PPB.D	10/30/12	0901	5.88	8.12	9.88	6.25
5	STD1129178	20PPB	20PPB.D	10/30/12	0923	5.88	8.12	9.88	6.25
6	STD1129175	10PPB	10PPB.D	10/30/12	0959	5.88	8.12	9.88	6.25
7	STD1129182	5PPB	5PPB.D	10/30/12	1022	5.88	8.12	9.88	6.25
8	STD1129179	2PPB	2PPB.D	10/30/12	1044				
9	STD1129180	500PPT	500PPT.D	10/30/12	1129				
10	STD1129177	200PPT	200PPT.D	10/30/12	1151				
11	STD1129176	1PPB	1PPBR.D	10/30/12	1214		8.12		
12	SSC1129192	SEC12	SEC12.D	10/30/12	1335	5.88	8.12	9.88	6.25
13	103112BFB11	103112BFB11	BFB11.D	10/31/12	0611				
14	CCV1129215	103112CCV11	50CCV11.D	10/31/12	0649	5.88	8.12	9.88	6.25
15	103112LCS11	103112LCS11	LCS11.D	10/31/12	0727	5.88	8.12	9.88	6.25
16	103112LCS11D	103112LCS11D	LCS11D.D	10/31/12	0750	5.88	8.12	9.88	6.25
17	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0812				
18	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0834				
19	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0932				
20	103112BLK12	103112BLK12	BLK12.D	10/31/12	0954	5.88	8.12	9.88	6.25
21	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1016				
22	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1101				
23	Q2-TFS-MW-17-RS	350740701	740701.D	10/31/12	1123	5.88	8.12	9.88	6.25
24	Q2-TFS-TB-1	350740708	740708.D	10/31/12	1146	5.88	8.12	9.88	6.25
25	Q2-TFS-MW-11	350740707	740707.D	10/31/12	1208	5.88	8.12	9.88	6.25
26	Q2-TFS-MW-17	350740702	740702.D	10/31/12	1231	5.88	8.12	9.88	6.25

QC LIMITS

S1	=	Dibromofluoromethane	(+/- 0.4 MINUTES)
S2	=	Toluene-d8	(+/- 0.4 MINUTES)
S3	=	4-Bromofluorobenzene	(+/- 0.63 MINUTES)
S4	=	1,2-Dichloroethane-d4	(+/- 0.4 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

Page 1 of 2

VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: DB-624 ID: 0.18 (mm) Init. Calib. Date: 10/30/12

Instrument ID: VMS01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 5.88 S2 : 8.12 S3 : 9.88 S4 : 6.25

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	Q2-TFS-MW-15	350740705	740705.D	10/31/12	1253	5.88	8.12	9.88	6.25
28	Q2-TFS-MW-15-DUP	350740706	740706.D	10/31/12	1316	5.88	8.12	9.88	6.25
29	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1338				
30	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1401				
31	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1423				
32	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1446				
33	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1508				
34	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1531				
35	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1553				
36	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1616				
37	Q2-TFS-MW-17-MS	350740703	740703MS.D	10/31/12	1638	5.88	8.12	9.88	6.25
38	Q2-TFS-MW-17-MSD	350740704	740704SD.D	10/31/12	1700	5.88	8.12	9.88	6.25

			QC LIMITS
S1	=	Dibromofluoromethane	(+/- 0.4 MINUTES)
S2	=	Toluene-d8	(+/- 0.4 MINUTES)
S3	=	4-Bromofluorobenzene	(+/- 0.63 MINUTES)
S4	=	1,2-Dichloroethane-d4	(+/- 0.4 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

Page 2 of 2

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20	19.5	97.5			30 - 155
Chloromethane	20	19.6	98.0			40 - 125
Vinyl chloride	20	20.5	102.0			50 - 145
Bromomethane	20	20.3	102.0			30 - 145
Chloroethane	20	20.2	101.0			60 - 135
Trichlorofluoromethane	20	20.3	102.0			60 - 145
1,1-Dichloroethene	20	20.8	104.0			70 - 130
Acrolein	40	44.6	112.0			31 - 148
Methyl iodide	20	20.6	103.0			75 - 152
Carbon disulfide	20	20.2	101.0			35 - 160
Methylene chloride	20	23	115.0			55 - 140
trans-1,2-Dichloroethene	20	20.8	104.0			60 - 140
Acrylonitrile	40	40.4	101.0			55 - 126
1,1-Dichloroethane	20	21.9	110.0			70 - 135
Acetone	40	55.7	139.0			40 - 140
2-Butanone	40	52.2	130.0			30 - 150
Chloroform	20	21.1	106.0			65 - 135
1,1,1-Trichloroethane	20	21.4	107.0			65 - 130
Carbon tetrachloride	20	21.6	108.0			65 - 140
Benzene	20	20.8	104.0			80 - 120
1,2-Dichloroethane	20	21.6	108.0			70 - 130
Trichloroethene	20	20.6	103.0			70 - 125
Vinyl acetate	20	21.7	108.0			77 - 150
1,2-Dichloropropane	20	22.4	112.0			75 - 125
Dibromomethane	20	20.6	103.0			75 - 125
Bromodichloromethane	20	21.3	106.0			75 - 120
cis-1,3-Dichloropropene	20	23.2	116.0			70 - 130
4-Methyl-2-pentanone	40	39.8	99.5			60 - 135
Toluene	20	21.5	108.0			75 - 120
trans-1,3-Dichloropropene	20	19.2	96.0			55 - 140
Ethyl methacrylate	20	20.8	104.0			73 - 121
1,1,2-Trichloroethane	20	21.2	106.0			75 - 125

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20	21.3	106.0			45 - 150
2-Hexanone	40	52.6	132.0 *			55 - 130
Dibromochloromethane	20	21.2	106.0			60 - 135
1,2-Dibromoethane	20	20.8	104.0			80 - 120
Chlorobenzene	20	20.7	104.0			80 - 120
1,1,1,2-Tetrachloroethane	20	21.3	106.0			80 - 130
Ethylbenzene	20	21.2	106.0			75 - 125
Styrene	20	21.4	107.0			65 - 135
Bromoform	20	20.2	101.0			70 - 130
1,1,2,2-Tetrachloroethane	20	19.7	98.5			65 - 130
1,2,3-Trichloropropane	20	19	95.0			75 - 125
1,2-Dibromo-3-chloropropane	20	19.5	97.5			50 - 130
1,4-Dichloro-2-butene	40	44.9	112.0			68 - 115
Acetonitrile	200	218	109.0			37 - 122
Allyl chloride	20	21.8	109.0			70 - 130
1,4-Dioxane	400	359	89.8			0 - 167
Isobutyl alcohol	400	427	107.0			70 - 130
Methacrylonitrile	200	207	104.0			70 - 130
Methyl methacrylate	20	20.6	103.0			33 - 172
Propionitrile	200	205	102.0			70 - 130
Chloroprene	20	22.7	114.0			70 - 130
Xylene (total)	60	63.5	106.0			82 - 124

Spike Recovery: 1 out of 54 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11D

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20	18.7	93.5	4.2	20	30 - 155
Chloromethane	20	19.6	98.0	0.0	20	40 - 125
Vinyl chloride	20	19.6	98.0	4.5	20	50 - 145
Bromomethane	20	19.8	99.0	2.5	20	30 - 145
Chloroethane	20	19.6	98.0	3.0	20	60 - 135
Trichlorofluoromethane	20	19.9	99.5	2.0	20	60 - 145
1,1-Dichloroethene	20	19.6	98.0	5.9	20	70 - 130
Acrolein	40	41.5	104.0	7.2	20	31 - 148
Methyl iodide	20	20	100.0	3.0	20	75 - 152
Carbon disulfide	20	18.8	94.0	7.2	20	35 - 160
Methylene chloride	20	22.4	112.0	2.6	20	55 - 140
trans-1,2-Dichloroethene	20	19	95.0	9.0	20	60 - 140
Acrylonitrile	40	39.2	98.0	3.0	20	55 - 126
1,1-Dichloroethane	20	20.4	102.0	7.1	20	70 - 135
Acetone	40	52.7	132.0	5.5	20	40 - 140
2-Butanone	40	50.1	125.0	4.1	20	30 - 150
Chloroform	20	19.3	96.5	8.9	20	65 - 135
1,1,1-Trichloroethane	20	19.4	97.0	9.8	20	65 - 130
Carbon tetrachloride	20	19.3	96.5	11.2	20	65 - 140
Benzene	20	18.9	94.5	9.6	20	80 - 120
1,2-Dichloroethane	20	20.2	101.0	6.7	20	70 - 130
Trichloroethene	20	18.6	93.0	10.2	20	70 - 125
Vinyl acetate	20	20.2	101.0	7.2	20	77 - 150
1,2-Dichloropropane	20	20.2	101.0	10.3	20	75 - 125
Dibromomethane	20	19.8	99.0	4.0	20	75 - 125
Bromodichloromethane	20	19.6	98.0	8.3	20	75 - 120
cis-1,3-Dichloropropene	20	20.9	104.0	10.4	20	70 - 130
4-Methyl-2-pentanone	40	39.3	98.2	1.3	20	60 - 135
Toluene	20	20.1	100.0	6.7	20	75 - 120
trans-1,3-Dichloropropene	20	18	90.0	6.5	20	55 - 140
Ethyl methacrylate	20	20.1	100.0	3.4	20	73 - 121
1,1,2-Trichloroethane	20	20.1	100.0	5.3	20	75 - 125

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11D

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20	18.8	94.0	12.5	20	45 - 150
2-Hexanone	40	51.6	129.0	1.9	20	55 - 130
Dibromochloromethane	20	19.4	97.0	8.9	20	60 - 135
1,2-Dibromoethane	20	20.4	102.0	1.9	20	80 - 120
Chlorobenzene	20	19.4	97.0	6.5	20	80 - 120
1,1,1,2-Tetrachloroethane	20	20.1	100.0	5.8	20	80 - 130
Ethylbenzene	20	19.8	99.0	6.8	20	75 - 125
Styrene	20	19.8	99.0	7.8	20	65 - 135
Bromoform	20	18.6	93.0	8.2	20	70 - 130
1,1,2,2-Tetrachloroethane	20	19	95.0	3.6	20	65 - 130
1,2,3-Trichloropropane	20	19	95.0	0.0	20	75 - 125
1,2-Dibromo-3-chloropropane	20	20.4	102.0	4.5	20	50 - 130
1,4-Dichloro-2-butene	40	44.6	112.0	0.7	20	68 - 115
Acetonitrile	200	204	102.0	6.6	20	37 - 122
Allyl chloride	20	20.4	102.0	6.6	20	70 - 130
1,4-Dioxane	400	327	81.8	9.3	20	0 - 167
Isobutyl alcohol	400	381	95.2	11.4	20	70 - 130
Methacrylonitrile	200	204	102.0	1.5	20	70 - 130
Methyl methacrylate	20	20.1	100.0	2.5	20	33 - 172
Propionitrile	200	203	102.0	1.0	20	70 - 130
Chloroprene	20	20.7	104.0	9.2	20	70 - 130
Xylene (total)	60	58.7	97.8	7.9	20	82 - 124

Spike Recovery: 0 out of 54 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Q2-TFS-MW-17-MS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
Dichlorodifluoromethane	20	0	16	77.5	30 - 155
Chloromethane	20	0	16	80.5	40 - 125
Vinyl chloride	20	0	16	80.0	50 - 145
Bromomethane	20	0	11	54.0	30 - 145
Chloroethane	20	0	14	68.5	60 - 135
Trichlorofluoromethane	20	0	17	87.0	60 - 145
1,1-Dichloroethene	20	0	18	88.0	70 - 130
Acrolein	40	0	32	80.5	31 - 148
Methyl iodide	20	0	26	130.0	75 - 152
Carbon disulfide	20	0.89	18	87.6	35 - 160
Methylene chloride	20	0	20	98.0	55 - 140
trans-1,2-Dichloroethene	20	0	18	87.5	60 - 140
Acrylonitrile	40	0	37	91.5	55 - 126
1,1-Dichloroethane	20	0	19	95.0	70 - 135
Acetone	40	0	30	74.5	40 - 140
2-Butanone	40	0	37	92.0	30 - 150
Chloroform	20	0	20	97.5	65 - 135
1,1,1-Trichloroethane	20	0	18	89.5	65 - 130
Carbon tetrachloride	20	0	18	88.5	65 - 140
Benzene	20	0	18	89.5	80 - 120
1,2-Dichloroethane	20	0	19	94.0	70 - 130
Trichloroethene	20	0	17	87.0	70 - 125
Vinyl acetate	20	0	18	91.0	77 - 150
1,2-Dichloropropane	20	0	19	95.0	75 - 125
Dibromomethane	20	0	18	92.5	75 - 125
Bromodichloromethane	20	0	18	89.5	75 - 120
cis-1,3-Dichloropropene	20	0	18	92.0	70 - 130
4-Methyl-2-pentanone	40	0	39	98.2	60 - 135
Toluene	20	0	19	94.5	75 - 120
trans-1,3-Dichloropropene	20	0	16	80.0	55 - 140

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Q2-TFS-MW-17-MS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
Ethyl methacrylate	20	0	20	99.5	73 - 121
1,1,2-Trichloroethane	20	0	19	94.0	75 - 125
Tetrachloroethene	20	0	17	85.0	45 - 150
2-Hexanone	40	0	44	110.0	55 - 130
Dibromochloromethane	20	0	18	89.5	60 - 135
1,2-Dibromoethane	20	0	18	92.5	80 - 120
Chlorobenzene	20	0	18	88.0	80 - 120
1,1,1,2-Tetrachloroethane	20	0	18	88.0	80 - 130
Ethylbenzene	20	0	18	89.5	75 - 125
Styrene	20	0	18	92.0	65 - 135
Bromoform	20	0	17	85.5	70 - 130
1,1,2,2-Tetrachloroethane	20	0	19	93.0	65 - 130
1,2,3-Trichloropropane	20	0	18	90.0	75 - 125
1,2-Dibromo-3-chloropropane	20	0	20	98.0	50 - 130
1,4-Dichloro-2-butene	40	0	31	78.5	68 - 115
Acetonitrile	200	0	190	95.0	37 - 122
Allyl chloride	20	0	19	95.0	70 - 130
1,4-Dioxane	400	0	420	104.0	0 - 167
Isobutyl alcohol	400	0	340	84.8	70 - 130
Methacrylonitrile	200	0	200	99.0	70 - 130
Methyl methacrylate	20	0	19	97.0	33 - 172
Propionitrile	200	0	200	99.5	70 - 130
Chloroprene	20	0	18	92.5	70 - 130
Xylene (total)	60	0	54	89.2	82 - 124

Spike Recovery: 0 out of 54 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268 Q2-TFS-MW-17-MSD

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20	21	104.0	28.7 *	20	30 - 155
Chloromethane	20	21	103.0	24.5 *	20	40 - 125
Vinyl chloride	20	20	100.0	22.2 *	20	50 - 145
Bromomethane	20	13	66.0	20.0	20	30 - 145
Chloroethane	20	19	93.5	30.9 *	20	60 - 135
Trichlorofluoromethane	20	22	112.0	25.1 *	20	60 - 145
1,1-Dichloroethene	20	20	102.0	15.2	20	70 - 130
Acrolein	40	50	126.0	43.7 *	20	31 - 148
Methyl iodide	20	32	162.0 *	22.3 *	20	75 - 152
Carbon disulfide	20	21	102.0	14.6	20	35 - 160
Methylene chloride	20	22	111.0	12.4	20	55 - 140
trans-1,2-Dichloroethene	20	20	100.0	13.3	20	60 - 140
Acrylonitrile	40	52	129.0 *	33.8 *	20	55 - 126
1,1-Dichloroethane	20	21	107.0	11.9	20	70 - 135
Acetone	40	34	84.2	12.3	20	40 - 140
2-Butanone	40	43	108.0	16.0	20	30 - 150
Chloroform	20	23	113.0	14.7	20	65 - 135
1,1,1-Trichloroethane	20	22	108.0	18.3	20	65 - 130
Carbon tetrachloride	20	21	105.0	17.1	20	65 - 140
Benzene	20	21	104.0	15.0	20	80 - 120
1,2-Dichloroethane	20	22	112.0	17.5	20	70 - 130
Trichloroethene	20	20	102.0	16.4	20	70 - 125
Vinyl acetate	20	24	120.0	27.5 *	20	77 - 150
1,2-Dichloropropane	20	22	108.0	13.3	20	75 - 125
Dibromomethane	20	22	108.0	15.5	20	75 - 125
Bromodichloromethane	20	21	106.0	16.9	20	75 - 120
cis-1,3-Dichloropropene	20	22	109.0	16.9	20	70 - 130
4-Methyl-2-pentanone	40	49	122.0	21.6 *	20	60 - 135
Toluene	20	22	110.0	15.2	20	75 - 120
trans-1,3-Dichloropropene	20	19	93.5	15.6	20	55 - 140

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Ethyl methacrylate	20	33	165.0 *	49.5 *	20	73 - 121
1,1,2-Trichloroethane	20	21	106.0	12.5	20	75 - 125
Tetrachloroethene	20	20	102.0	18.7	20	45 - 150
2-Hexanone	40	58	146.0 *	27.5 *	20	55 - 130
Dibromochloromethane	20	22	108.0	18.3	20	60 - 135
1,2-Dibromoethane	20	22	111.0	18.2	20	80 - 120
Chlorobenzene	20	21	105.0	17.6	20	80 - 120
1,1,1,2-Tetrachloroethane	20	21	106.0	19.0	20	80 - 130
Ethylbenzene	20	22	110.0	20.1 *	20	75 - 125
Styrene	20	22	110.0	17.8	20	65 - 135
Bromoform	20	21	103.0	18.6	20	70 - 130
1,1,2,2-Tetrachloroethane	20	22	108.0	15.4	20	65 - 130
1,2,3-Trichloropropane	20	22	110.0	20.4 *	20	75 - 125
1,2-Dibromo-3-chloropropane	20	24	120.0	20.2 *	20	50 - 130
1,4-Dichloro-2-butene	40	39	98.5	22.6 *	20	68 - 115
Acetonitrile	200	220	109.0	13.7	20	37 - 122
Allyl chloride	20	22	109.0	13.7	20	70 - 130
1,4-Dioxane	400	500	126.0	19.2	20	0 - 167
Isobutyl alcohol	400	420	105.0	21.1 *	20	70 - 130
Methacrylonitrile	200	230	116.0	15.4	20	70 - 130
Methyl methacrylate	20	23	116.0	17.8	20	33 - 172
Propionitrile	200	230	116.0	15.3	20	70 - 130
Chloroprene	20	22	109.0	16.4	20	70 - 130
Xylene (total)	60	65	108.0	19.0	20	82 - 124

RPD: 17 out of 54 outside limits

Spike Recovery: 4 out of 54 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

8260 Standards Data

131112 1348

6

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF0.2 =200PPT.D RRF0.5 =500PPT.D
RRF1 =1PPBR.D RRF2 =2PPB.D RRF5 =5PPB.D

COMPOUND	RRF0.2	RRF0.5	RRF1	RRF2	RRF5	$\overline{RRF}$	%RSD OR R^2	RSD
Dichlorodifluoromethane			0.225	0.273	0.282			
Chloromethane	#		0.345	0.346	0.306		#	
Vinyl chloride	*	0.415	0.278	0.341	0.321		*	
Bromomethane			0.254	0.297	0.275			
Chloroethane			0.200	0.205	0.227			
Trichlorofluoromethane			0.330	0.406	0.392			
1,1-Dichloroethene	*	0.534	0.387	0.436	0.401		*	
Acrolein				0.060	0.042			
Methyl iodide			0.054	0.079	0.084			
Carbon disulfide			0.819	0.925	0.762			
Methylene chloride			0.516	0.528	0.399			
trans-1,2-Dichloroethene		0.547	0.405	0.441	0.374			
Acrylonitrile			0.142	0.169	0.133			
1,1-Dichloroethane	#		0.486	0.479	0.419		#	
Acetone					0.143			
2-Butanone				0.148	0.122			
Chloroform	* 0.641	0.497	0.460	0.518	0.445		*	
1,1,1-Trichloroethane			0.323	0.369	0.339			
Carbon tetrachloride		0.334	0.272	0.319	0.276			
Benzene	1.437	1.137	0.988	1.113	0.964			
1,2-Dichloroethane		0.404	0.367	0.386	0.341			
Trichloroethene		0.324	0.216	0.296	0.250			
Vinyl acetate			0.792	0.875	0.691			
1,2-Dichloropropane	*	0.276	0.247	0.288	0.257		*	
Dibromomethane			0.182	0.200	0.173			
Bromodichloromethane	0.429	0.372	0.336	0.381	0.330			
cis-1,3-Dichloropropene		0.288	0.272	0.345	0.310			
4-Methyl-2-pentanone				0.105	0.091			
Toluene	*	0.643	0.555	0.683	0.582		*	
trans-1,3-Dichloropropene		0.305	0.299	0.354	0.298			
Ethyl methacrylate			0.271	0.334	0.295			
1,1,2-Trichloroethane		0.245	0.248	0.276	0.241			
Tetrachloroethene		0.313	0.253	0.297	0.259			
2-Hexanone				0.267	0.221			

131112 1348

FORM VI

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF0.2 =200PPT.D RRF0.5 =500PPT.D
RRF1 =1PPBR.D RRF2 =2PPB.D RRF5 =5PPB.D

COMPOUND	RRF0.2	RRF0.5	RRF1	RRF2	RRF5	$\overline{RRF}$	%RSD OR R^2	RSD
Dibromochloromethane	0.445	0.315	0.307	0.381	0.318			
1,2-Dibromoethane			0.359	0.396	0.339			
Chlorobenzene	#	1.191	0.959	1.079	0.935		#	
1,1,1,2-Tetrachloroethane		0.292	0.293	0.358	0.306			
Ethylbenzene	*	0.485	0.474	0.584	0.498		*	
Styrene			0.901	1.067	0.946			
Bromoform	#		0.205	0.215	0.203		#	
1,1,2,2-Tetrachloroethane	# 1.307	1.093	1.078	1.232	0.985		#	
1,2,3-Trichloropropane			0.354	0.348	0.266			
1,2-Dibromo-3-chloropropane				0.170	0.139			
1,4-Dichloro-2-butene			0.094	0.123	0.102			
Acetonitrile			0.087	0.080	0.068			
Allyl chloride			0.871	0.799	0.676			
1,4-Dioxane			0.003	0.003	0.003			
Isobutyl alcohol				0.005	0.004			
Methacrylonitrile			0.124	0.143	0.123			
Methyl methacrylate			0.175	0.202	0.155			
Propionitrile			0.044	0.046	0.040			
Chloroprene			0.342	0.380	0.319			
o-Xylene		1.446	1.274	1.431	1.238			
p,m-Xylene	0.764	0.625	0.570	0.674	0.598			
==========								
Dibromofluoromethane(SURR)					0.271			
Toluene-d8(SURR)					0.980			
4-Bromofluorobenzene(SURR)					0.942			
1,2-Dichloroethane-d4(SURR)					0.063			

131112 1348

FORM VI

6

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF10 =10PPB.D RRF20 =20PPB.D
RRF50 =50PPB.D RRF60 =60PPB.D RRF80 =80PPB.D

COMPOUND		RRF10	RRF20	RRF50	RRF60	RRF80	$\overline{RRF}$	%RSD OR R^2		RSD
Dichlorodifluoromethane		0.293	0.306	0.314	0.307	0.323	0.29058	10.7		
Chloromethane	#	0.302	0.277	0.282	0.280	0.274	0.30154	9.8	#	
Vinyl chloride	*	0.319	0.321	0.321	0.313	0.323	0.3279	11.2	*	
Bromomethane		0.297	0.362	0.317	0.307	0.289	0.2999	10.6		
Chloroethane		0.206	0.213	0.213	0.208	0.209	0.21006	3.8		
Trichlorofluoromethane		0.395	0.392	0.412	0.400	0.404	0.39154	6.6		
1,1-Dichloroethene	*	0.451	0.409	0.385	0.394	0.384	0.41988	11.6	*	
Acrolein		0.043	0.040	0.040	0.036	0.035	0.0422	0.99623		
Methyl iodide		0.122	0.186	0.274	0.287	0.334	0.17736	0.99734		
Carbon disulfide		0.903	0.822	0.769	0.788	0.770	0.81968	7.6		
Methylene chloride		0.418	0.379	0.343	0.348	0.343	0.4092	0.99943		
trans-1,2-Dichloroethene		0.447	0.403	0.372	0.375	0.372	0.41503	13.8		
Acrylonitrile		0.124	0.125	0.121	0.116	0.114	0.13058	13.7		
1,1-Dichloroethane	#	0.486	0.463	0.418	0.424	0.416	0.44879	7.2	#	
Acetone		0.164	0.132	0.128	0.145	0.105	0.13612	14.5		
2-Butanone		0.152	0.132	0.126	0.137	0.113	0.13282	10.4		
Chloroform	*	0.523	0.493	0.491	0.509	0.500	0.50758	10.4	*	
1,1,1-Trichloroethane		0.417	0.390	0.395	0.413	0.407	0.38145	9.1		
Carbon tetrachloride		0.336	0.330	0.331	0.347	0.345	0.3212	8.7		
Benzene		1.131	1.043	1.026	1.065	1.047	1.09511	12.2		
1,2-Dichloroethane		0.392	0.370	0.359	0.369	0.368	0.37289	5		
Trichloroethene		0.297	0.287	0.280	0.282	0.280	0.27904	10.9		
Vinyl acetate		0.767	0.724	0.736	0.732	0.735	0.75665	7.4		
1,2-Dichloropropane	*	0.297	0.273	0.264	0.269	0.266	0.27073	5.6	*	
Dibromomethane		0.212	0.190	0.187	0.190	0.186	0.19	6.2		
Bromodichloromethane		0.380	0.364	0.355	0.372	0.372	0.36901	7.4		
cis-1,3-Dichloropropene		0.380	0.377	0.383	0.399	0.395	0.35006	13.8		
4-Methyl-2-pentanone		0.116	0.109	0.104	0.107	0.104	0.10512	6.9		
Toluene	*	0.720	0.681	0.668	0.691	0.672	0.65503	8.2	*	
trans-1,3-Dichloropropene		0.384	0.385	0.397	0.466	0.416	0.367	0.99332		
Ethyl methacrylate		0.362	0.356	0.351	0.368	0.360	0.33706	10.5		
1,1,2-Trichloroethane		0.279	0.269	0.258	0.265	0.254	0.2593	5.3		
Tetrachloroethene		0.303	0.303	0.291	0.302	0.290	0.29007	7.1		
2-Hexanone		0.278	0.270	0.255	0.277	0.226	0.25623	9.2		

131112 1348

FORM VI

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF10 =10PPB.D RRF20 =20PPB.D
RRF50 =50PPB.D RRF60 =60PPB.D RRF80 =80PPB.D

COMPOUND		RRF10	RRF20	RRF50	RRF60	RRF80	$\overline{RRF}$	%RSD OR R^2		RSD
Dibromochloromethane		0.383	0.380	0.381	0.406	0.386	0.37015	11.8		
1,2-Dibromoethane		0.390	0.382	0.370	0.391	0.364	0.37408	5.2		
Chlorobenzene	#	1.102	1.034	0.999	1.051	1.007	1.0397	7.5	#	
1,1,1,2-Tetrachloroethane		0.347	0.350	0.348	0.368	0.353	0.33485	8.8		
Ethylbenzene	*	0.576	0.539	0.533	0.561	0.539	0.53197	7.4	*	
Styrene		1.164	1.136	1.129	1.209	1.171	1.09043	10.2		
Bromoform	#	0.254	0.265	0.272	0.288	0.279	0.24768	14	#	
1,1,2,2-Tetrachloroethane	#	1.142	1.038	0.944	0.952	0.888	1.0658	12.5	#	
1,2,3-Trichloropropane		0.325	0.303	0.268	0.273	0.254	0.29894	13.3		
1,2-Dibromo-3-chloropropane		0.166	0.161	0.158	0.158	0.145	0.15698	7		
1,4-Dichloro-2-butene		0.132	0.137	0.133	0.136	0.123	0.12253	13.3		
Acetonitrile		0.079	0.072	0.067	0.067	0.066	0.07333	10.7		
Allyl chloride		0.792	0.720	0.674	0.671	0.663	0.73335	10.7		
1,4-Dioxane		0.004	0.003	0.003	0.003	0.003	0.00315	10.9		
Isobutyl alcohol		0.005	0.004	0.004	0.004	0.004	0.00411	13.8		
Methacrylonitrile		0.145	0.138	0.133	0.135	0.131	0.13384	5.8		
Methyl methacrylate		0.206	0.202	0.198	0.199	0.195	0.19155	9.2		
Propionitrile		0.047	0.043	0.040	0.040	0.039	0.04247	7.2		
Chloroprene		0.390	0.362	0.339	0.349	0.346	0.3534	6.5		
o-Xylene		1.485	1.422	1.392	1.475	1.419	1.39802	6.1		
p,m-Xylene		0.719	0.690	0.675	0.709	0.682	0.67047	8.7		
==========										=========
Dibromofluoromethane(SURR)		0.237	0.252	0.262	0.251		0.2545	5		
Toluene-d8(SURR)		0.854	0.922	0.938	0.908		0.92048	5		
4-Bromofluorobenzene(SURR)		0.816	0.859	0.834	0.801		0.85038	6.5		
1,2-Dichloroethane-d4(SURR)		0.057	0.058	0.060	0.057		0.05921	4.3		

131112 1348

FORM VI

7SSC

VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: VMS01 CalibrationDate: 10/30/12 Time: 1335

CCV ID: SSC1129192 Lab File ID: SEC12.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Dichlorodifluoromethane		0.29058	0.29792	2.5	AVRG	
Chloromethane	#	0.30154	0.28091	6.8	AVRG	#
Vinyl chloride	*	0.3279	0.32555	0.7	AVRG	*
Bromomethane		0.2999	0.30371	1.3	AVRG	
Chloroethane		0.21006	0.20628	1.8	AVRG	
Trichlorofluoromethane		0.39154	0.41141	5.1	AVRG	
1,1-Dichloroethene	*	0.41988	0.39526	5.9	AVRG	*
Acrolein		100	109	9.0	LINR	
Methyl iodide		50	46.8	6.4	2ORD	
Carbon disulfide		0.81968	0.76167	7.1	AVRG	
Methylene chloride		50	50.6	1.2	LINR	
trans-1,2-Dichloroethene		0.41503	0.38116	8.2	AVRG	
Acrylonitrile		0.13058	0.12566	3.8	AVRG	
1,1-Dichloroethane	#	0.44879	0.42192	6.0	AVRG	#
Acetone		0.13612	0.11175	17.9	AVRG	
2-Butanone		0.13282	0.1193	10.2	AVRG	
Chloroform	*	0.50758	0.49225	3.0	AVRG	*
1,1,1-Trichloroethane		0.38145	0.38517	1.0	AVRG	
Carbon tetrachloride		0.3212	0.32197	0.2	AVRG	
Benzene		1.09511	1.01	7.8	AVRG	
1,2-Dichloroethane		0.37289	0.36366	2.5	AVRG	
Trichloroethene		0.27904	0.2671	4.3	AVRG	
Vinyl acetate		0.75665	0.75985	0.4	AVRG	
1,2-Dichloropropane	*	0.27073	0.25744	4.9	AVRG	*
Dibromomethane		0.19	0.18424	3.0	AVRG	
Bromodichloromethane		0.36901	0.35007	5.1	AVRG	
cis-1,3-Dichloropropene		0.35006	0.37678	7.6	AVRG	
4-Methyl-2-pentanone		0.10512	0.10529	0.2	AVRG	
Toluene	*	0.65503	0.66816	2.0	AVRG	*
trans-1,3-Dichloropropene		50	45.1	9.8	LINR	
Ethyl methacrylate		0.33706	0.35504	5.3	AVRG	
1,1,2-Trichloroethane		0.2593	0.24817	4.3	AVRG	
Tetrachloroethene		0.29007	0.26058	10.2	AVRG	
2-Hexanone		0.25623	0.23593	7.9	AVRG	
Dibromochloromethane		0.37015	0.34454	6.9	AVRG	
1,2-Dibromoethane		0.37408	0.35544	5.0	AVRG	

131112 1348

FORM VII

7SSC

VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: VMS01 CalibrationDate: 10/30/12 Time: 1335

CCV ID: SSC1129192 Lab File ID: SEC12.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Chlorobenzene	#	1.0397	0.95988	7.7	AVRG	#
1,1,1,2-Tetrachloroethane		0.33485	0.33018	1.4	AVRG	
Ethylbenzene	*	0.53197	0.51358	3.5	AVRG	*
Styrene		1.09043	1.109	1.7	AVRG	
Bromoform	#	0.24768	0.24961	0.8	AVRG	#
1,1,2,2-Tetrachloroethane	#	1.0658	0.90371	15.2	AVRG	#
1,2,3-Trichloropropane		0.29894	0.2575	13.9	AVRG	
1,2-Dibromo-3-chloropropane		0.15698	0.14794	5.8	AVRG	
1,4-Dichloro-2-butene		0.12253	0.12117	1.1	AVRG	
Acetonitrile		0.07333	0.0718	2.1	AVRG	
Allyl chloride		0.73335	0.71798	2.1	AVRG	
1,4-Dioxane		0.00315	0.0037	17.5	AVRG	
Isobutyl alcohol		0.00411	0.00394	4.1	AVRG	
Methacrylonitrile		0.13384	0.13709	2.4	AVRG	
Methyl methacrylate		0.19155	0.19466	1.6	AVRG	
Propionitrile		0.04247	0.04173	1.7	AVRG	
Chloroprene		0.3534	0.34799	1.5	AVRG	
o-Xylene		1.39802	1.361	2.6	AVRG	
p,m-Xylene		0.67047	0.65132	2.9	AVRG	
==========						
Dibromofluoromethane(SURR)		0.2545	0.25911	1.8	AVRG	
Toluene-d8(SURR)		0.92048	0.94315	2.5	AVRG	
4-Bromofluorobenzene(SURR)		0.85038	0.8244	3.1	AVRG	
1,2-Dichloroethane-d4(SURR)		0.05921	0.061	3.0	AVRG	

131112 1348

FORM VII

7

VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: VMS01 CalibrationDate: 10/31/12 Time: 0649

CCV ID: CCV1129215 Lab File ID: 50CCV11.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Dichlorodifluoromethane		0.29058	0.29285	0.8	AVRG	
Chloromethane	#	0.30154	0.30494	1.1	AVRG	#
Vinyl chloride	*	0.3279	0.34469	5.1	AVRG	*
Bromomethane		0.2999	0.26275	12.4	AVRG	
Chloroethane		0.21006	0.2216	5.5	AVRG	
Trichlorofluoromethane		0.39154	0.41327	5.5	AVRG	
1,1-Dichloroethene	*	0.41988	0.40633	3.2	AVRG	*
Acrolein		100	103	3.0	LINR	
Methyl iodide		50	53.1	6.2	2ORD	
Carbon disulfide		0.81968	0.78315	4.5	AVRG	
Methylene chloride		50	53.2	6.4	LINR	
trans-1,2-Dichloroethene		0.41503	0.39332	5.2	AVRG	
Acrylonitrile		0.13058	0.11951	8.5	AVRG	
1,1-Dichloroethane	#	0.44879	0.43777	2.5	AVRG	#
Acetone		0.13612	0.13883	2.0	AVRG	
2-Butanone		0.13282	0.14001	5.4	AVRG	
Chloroform	*	0.50758	0.51343	1.2	AVRG	*
1,1,1-Trichloroethane		0.38145	0.39548	3.7	AVRG	
Carbon tetrachloride		0.3212	0.33234	3.5	AVRG	
Benzene		1.09511	1.049	4.2	AVRG	
1,2-Dichloroethane		0.37289	0.36857	1.2	AVRG	
Trichloroethene		0.27904	0.26836	3.8	AVRG	
Vinyl acetate		0.75665	0.77991	3.1	AVRG	
1,2-Dichloropropane	*	0.27073	0.27816	2.7	AVRG	*
Dibromomethane		0.19	0.18466	2.8	AVRG	
Bromodichloromethane		0.36901	0.36072	2.2	AVRG	
cis-1,3-Dichloropropene		0.35006	0.38929	11.2	AVRG	
4-Methyl-2-pentanone		0.10512	0.09703	7.7	AVRG	
Toluene	*	0.65503	0.68838	5.1	AVRG	*
trans-1,3-Dichloropropene		50	47	6.0	LINR	
Ethyl methacrylate		0.33706	0.34055	1.0	AVRG	
1,1,2-Trichloroethane		0.2593	0.25427	1.9	AVRG	
Tetrachloroethene		0.29007	0.27015	6.9	AVRG	
2-Hexanone		0.25623	0.25693	0.3	AVRG	
Dibromochloromethane		0.37015	0.36226	2.1	AVRG	
1,2-Dibromoethane		0.37408	0.35666	4.7	AVRG	

131112 1348

FORM VII

7

VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: VMS01 CalibrationDate: 10/31/12 Time: 0649

CCV ID: CCV1129215 Lab File ID: 50CCV11.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Chlorobenzene	#	1.0397	0.99644	4.2	AVRG	#
1,1,1,2-Tetrachloroethane		0.33485	0.34289	2.4	AVRG	
Ethylbenzene	*	0.53197	0.53397	0.4	AVRG	*
Styrene		1.09043	1.144	4.9	AVRG	
Bromoform	#	0.24768	0.2465	0.5	AVRG	#
1,1,2,2-Tetrachloroethane	#	1.0658	0.93389	12.4	AVRG	#
1,2,3-Trichloropropane		0.29894	0.25658	14.2	AVRG	
1,2-Dibromo-3-chloropropane		0.15698	0.14472	7.8	AVRG	
1,4-Dichloro-2-butene		0.12253	0.12971	5.9	AVRG	
Acetonitrile		0.07333	0.07206	1.7	AVRG	
Allyl chloride		0.73335	0.72062	1.7	AVRG	
1,4-Dioxane		0.00315	0.00256	18.7	AVRG	
Isobutyl alcohol		0.00411	0.00393	4.4	AVRG	
Methacrylonitrile		0.13384	0.13034	2.6	AVRG	
Methyl methacrylate		0.19155	0.18455	3.7	AVRG	
Propionitrile		0.04247	0.03882	8.6	AVRG	
Chloroprene		0.3534	0.37195	5.2	AVRG	
o-Xylene		1.39802	1.428	2.1	AVRG	
p,m-Xylene		0.67047	0.67995	1.4	AVRG	
==========						
Dibromofluoromethane(SURR)		0.2545	0.26218	3.0	AVRG	
Toluene-d8(SURR)		0.92048	0.94045	2.2	AVRG	
4-Bromofluorobenzene(SURR)		0.85038	0.876	3.0	AVRG	
1,2-Dichloroethane-d4(SURR)		0.05921	0.06118	3.3	AVRG	

131112 1348

FORM VII

8270 SIM Semi-Volatile Organics

131112 1348

CASE NARRATIVE
Semi-Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW8270D-SIM.

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510 for 8270 semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

A client requested MS/SD set was analyzed.

CASE NARRATIVE
Semi-Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

All percent recovery and relative percent difference (RPD) criteria were met.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.

Sample Q2-TFS-MW-15 required a 5X dilution due to high concentration of the following analytes: 1-Methylnaphthalene, Naphthalene. Both full and diluted runs are reported.

Sample Q2-TFS-MW-15-DUP required a 5X dilution due to high concentration of the following analytes: 1-Methylnaphthalene, Naphthalene. Both full and diluted runs are reported.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: DATE: 11/06/2012

SEMI-VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Method: 8270 SIM

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17-RS	350740701
Q2-TFS-MW-17	350740702
Q2-TFS-MW-15	350740705
Q2-TFS-MW-15DL1	350740705DL1
Q2-TFS-MW-15-DUP	350740706
Q2-TFS-MW-15-DUPDL1	350740706DL1
Q2-TFS-MW-11	350740707

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8270 SIM Sample Data

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 1812

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0126

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.99		0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.041	J	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.027	J	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 1948

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	13.3	E	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	5.6		0.02	0.04	0.05
83-32-9	Acenaphthene	1.6		0.02	0.04	0.05
208-96-8	Acenaphthylene	0.11		0.02	0.04	0.05
120-12-7	Anthracene	0.46		0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.13		0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.094		0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	1.4		0.02	0.04	0.05
86-73-7	Fluorene	2.7		0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	15.2	E	0.02	0.04	0.05
85-01-8	Phenanthrene	3.8		0.02	0.04	0.05
129-00-0	Pyrene	0.97		0.02	0.04	0.05

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15DL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705DL1 Lab File ID 40705D5.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0904

PercentSolids: 0 decanted : Dilution Factor: 5

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	13.2		0.1	0.2	0.25
91-57-6	2-Methylnaphthalene	5.4		0.1	0.2	0.25
83-32-9	Acenaphthene	1.9		0.1	0.2	0.25
208-96-8	Acenaphthylene	0.15	J	0.1	0.2	0.25
120-12-7	Anthracene	0.49		0.1	0.2	0.25
56-55-3	Benzo(a)anthracene	0.13	J	0.1	0.2	0.25
50-32-8	Benzo(a)pyrene	0.2	U	0.1	0.2	0.25
205-99-2	Benzo(b)fluoranthene	0.2	U	0.1	0.2	0.25
191-24-2	Benzo(g,h,i)perylene	0.2	U	0.1	0.2	0.25
207-08-9	Benzo(k)fluoranthene	0.2	U	0.1	0.2	0.25
218-01-9	Chrysene	0.1	J	0.1	0.2	0.25
53-70-3	Dibenzo(a,h)anthracene	0.2	U	0.1	0.2	0.2
206-44-0	Fluoranthene	1.5		0.1	0.2	0.25
86-73-7	Fluorene	3.2		0.1	0.2	0.25
193-39-5	Indeno(1,2,3-cd)pyrene	0.2	U	0.1	0.2	0.25
91-20-3	Naphthalene	14.3		0.1	0.2	0.25
85-01-8	Phenanthrene	4.2		0.1	0.2	0.25
129-00-0	Pyrene	1		0.1	0.2	0.25

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2012

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	14.8	E	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	6		0.02	0.04	0.05
83-32-9	Acenaphthene	1.7		0.02	0.04	0.05
208-96-8	Acenaphthylene	0.12		0.02	0.04	0.05
120-12-7	Anthracene	0.48		0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.15		0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.12		0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	1.4		0.02	0.04	0.05
86-73-7	Fluorene	2.9		0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	16.9	E	0.02	0.04	0.05
85-01-8	Phenanthrene	4.1		0.02	0.04	0.05
129-00-0	Pyrene	1.1		0.02	0.04	0.05

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUPDL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706DL1 Lab File ID 40706D5.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0927

PercentSolids: 0 decanted : Dilution Factor: 5

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	14		0.1	0.2	0.25
91-57-6	2-Methylnaphthalene	5.9		0.1	0.2	0.25
83-32-9	Acenaphthene	2		0.1	0.2	0.25
208-96-8	Acenaphthylene	0.13	J	0.1	0.2	0.25
120-12-7	Anthracene	0.5		0.1	0.2	0.25
56-55-3	Benzo(a)anthracene	0.15	J	0.1	0.2	0.25
50-32-8	Benzo(a)pyrene	0.2	U	0.1	0.2	0.25
205-99-2	Benzo(b)fluoranthene	0.2	U	0.1	0.2	0.25
191-24-2	Benzo(g,h,i)perylene	0.2	U	0.1	0.2	0.25
207-08-9	Benzo(k)fluoranthene	0.2	U	0.1	0.2	0.25
218-01-9	Chrysene	0.11	J	0.1	0.2	0.25
53-70-3	Dibenzo(a,h)anthracene	0.2	U	0.1	0.2	0.2
206-44-0	Fluoranthene	1.5		0.1	0.2	0.25
86-73-7	Fluorene	3.3		0.1	0.2	0.25
193-39-5	Indeno(1,2,3-cd)pyrene	0.2	U	0.1	0.2	0.25
91-20-3	Naphthalene	15.5		0.1	0.2	0.25
85-01-8	Phenanthrene	4.4		0.1	0.2	0.25
129-00-0	Pyrene	1		0.1	0.2	0.25

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 995 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

8270 SIM QC Summary

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151249MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 151249MB Lab File ID: 11363MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/30/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 1725

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151249MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID: 11363MB.D Lab Sample ID: 151249MB

Instrument ID: SMSD01 Date Extracted: 10/30/12

Matrix: WATER Date Analyzed: 10/30/12

Level:(low/med) LOW Time Analyzed: 1725

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151250LCS	151250LCS	11363LCS.D	10/30/12	1748
2	Q2-TFS-MW-17-RS	350740701	40701.D	10/30/12	1812
3	Q2-TFS-MW-17-MS	350740703	40703.D	10/30/12	1836
4	Q2-TFS-MW-17-MSD	350740704	40704.D	10/30/12	1900
5	Q2-TFS-MW-15	350740705	40705.D	10/30/12	1948
6	Q2-TFS-MW-15-DUP	350740706	40706.D	10/30/12	2012
7	Q2-TFS-MW-11	350740707	40707.D	10/30/12	2036
8	Q2-TFS-MW-17	350740702	40702.D	10/31/12	0126
9	Q2-TFS-MW-15DL1	350740705DL1	40705D5.D	10/31/12	0904
10	Q2-TFS-MW-15-DUPDL1	350740706DL1	40706D5.D	10/31/12	0927

COMMENTS:

Page 1 of 1

131112 1348

Form IV

2A

WATER SEMI-VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507407

Column(1): HPMS-5 ID: 0.25 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
151249MB	96.0	84.0					0
151250LCS	100.0	92.0					0
Q2-TFS-MW-11	92.0	78.0					0
Q2-TFS-MW-15	84.0	68.0					0
Q2-TFS-MW-15DL1	90.0	86.0					0
Q2-TFS-MW-15-DUP	90.0	76.0					0
Q2-TFS-MW-15-DUPDL1	88.0	88.0					0
Q2-TFS-MW-17	130.0	74.0					0
Q2-TFS-MW-17-MS	94.0	78.0					0
Q2-TFS-MW-17-MSD	96.0	78.0					0
Q2-TFS-MW-17-RS	92.0	78.0					0

Control Limits

S1 = p-Terphenyl-d14 33 - 141

S2 = 2-Fluorobiphenyl 43 - 116

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

131112 1348

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: DFTPP1.D DFTPP Injection Date: 10/30/12

Instrument ID: SMSD01 DFTPP Injection Time: 0848

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	48	
68	Less than 2.0% of mass 69	0.6	(1.12)1
69	Mass 69 relative abundance	51	
70	Less than 2.0% of mass 69	0.4	(0.84)1
127	10.0 - 80.0% of mass 198	53.7	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.9	
275	10.0 - 60.0% of mass 198	25.1	
365	Greater than 1.0% of mass 198	3.1	
441	0.0 - 24.0% of mass 442	13.2	(16.46)2
442	Greater than 50.0% of mass 198	80.4	
443	15.0 - 24.0% of mass 442	14.4	(17.89)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1129156	48051	SIMCAL1.D	10/30/12	0909
2	STD1129158	48050	SIMCAL2.D	10/30/12	0933
3	STD1129159	48049	SIMCAL3.D	10/30/12	0957
4	STD1129160	48048	SIMCAL4.D	10/30/12	1020
5	STD1129161	48047	SIMCAL5.D	10/30/12	1044
6	STD1129162	48046	SIMCAL6.D	10/30/12	1108
7	STD1129163	48045	SIMCAL7.D	10/30/12	1132
8	STD1129164	48044	SIMCAL8.D	10/30/12	1156
9	STD1129165	48043	SIMCAL9.D	10/30/12	1221
10	STD1129157	48042	SIMCAL10.D	10/30/12	1245
11	SSC1129169	48052	SIMSEC.D	10/30/12	1309

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: DFTPP1.D DFTPP Injection Date: 10/31/12

Instrument ID: SMSD01 DFTPP Injection Time: 0650

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	45.4	
68	Less than 2.0% of mass 69	0	(0)1
69	Mass 69 relative abundance	46.8	
70	Less than 2.0% of mass 69	0.3	(0.66)1
127	10.0 - 80.0% of mass 198	52	
197	Less than 2.0% of mass 198	0.9	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.6	
275	10.0 - 60.0% of mass 198	23.6	
365	Greater than 1.0% of mass 198	3.1	
441	0.0 - 24.0% of mass 442	15.4	(17.2)2
442	Greater than 50.0% of mass 198	89.6	
443	15.0 - 24.0% of mass 442	17.2	(19.25)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129168	48046	SIMCCV2.D	10/31/12	0815
2	Q2-TFS-MW-15DL1	350740705DL1	40705D5.D	10/31/12	0904
3	Q2-TFS-MW-15-DUPDL1	350740706DL1	40706D5.D	10/31/12	0927

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: DFTPP2.D DFTPP Injection Date: 10/30/12

Instrument ID: SMSD01 DFTPP Injection Time: 1330

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	46.7	
68	Less than 2.0% of mass 69	0.6	(1.28)1
69	Mass 69 relative abundance	48.6	
70	Less than 2.0% of mass 69	0.3	(0.68)1
127	10.0 - 80.0% of mass 198	53.3	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.5	
275	10.0 - 60.0% of mass 198	25.1	
365	Greater than 1.0% of mass 198	2.9	
441	0.0 - 24.0% of mass 442	12.5	(15.59)2
442	Greater than 50.0% of mass 198	80.4	
443	15.0 - 24.0% of mass 442	14.5	(18.09)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129166	48046	SIMCCV1.D	10/30/12	1350
2	151249MB	151249MB	11363MB.D	10/30/12	1725
3	151250LCS	151250LCS	11363LCS.D	10/30/12	1748
4	Q2-TFS-MW-17-RS	350740701	40701.D	10/30/12	1812
5	Q2-TFS-MW-17-MS	350740703	40703.D	10/30/12	1836
6	Q2-TFS-MW-17-MSD	350740704	40704.D	10/30/12	1900
7	Q2-TFS-MW-15	350740705	40705.D	10/30/12	1948
8	Q2-TFS-MW-15-DUP	350740706	40706.D	10/30/12	2012
9	Q2-TFS-MW-11	350740707	40707.D	10/30/12	2036
10	Q2-TFS-MW-17	350740702	40702.D	10/31/12	0126

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID (Standard): SIMCAL6.D Date Analyzed: 10/30/2012

Instrument ID: SMSD01 Time Analyzed: 11:08

GC Column: HPMS-5 ID: 0.25 (mm)

		IS1 AREA #	RT	IS2 AREA #	RT	IS3 AREA #	RT
	MID CAL STD	17661	3.74	69571	4.89	33825	6.58
	UPPER LIMIT	35322	4.24	139142	5.39	67650	7.08
	LOWER LIMIT	8830.5	3.24	34785.5	4.39	16912.5	6.08
	EPA SAMPLE NO.						
1	151249MB	18199	3.74	70977	4.89	35934	6.58
2	151250LCS	16576	3.74	66202	4.89	34101	6.58
3	Q2-TFS-MW-17-RS	16700	3.74	67599	4.89	35712	6.58
4	Q2-TFS-MW-17-MS	17735	3.74	71193	4.89	37557	6.58
5	Q2-TFS-MW-17-MSD	17447	3.74	71193	4.89	36918	6.58
6	Q2-TFS-MW-15	19720	3.74	87237	4.89	46639	6.58
7	Q2-TFS-MW-15-DUP	19723	3.74	85311	4.89	46585	6.58
8	Q2-TFS-MW-11	18060	3.74	72377	4.89	37154	6.58
9	Q2-TFS-MW-17	18389	3.74	75652	4.89	39616	6.58
10	Q2-TFS-MW-15DL1	20267	3.74	91516	4.89	41150	6.58
11	Q2-TFS-MW-15-DUPDL1	18858	3.74	81858	4.89	38889	6.58

IS1 = 1,4-Dichlorobenzene-d4

IS2 = Naphthalene-d8

IS3 = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1348

FORM VIII

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID (Standard): SIMCAL6.D Date Analyzed: 10/30/2012

Instrument ID: SMSD01 Time Analyzed: 11:08

GC Column: HPMS-5 ID: 0.25 (mm)

		IS4 AREA #	RT	IS5 AREA #	RT	IS6 AREA #	RT
	MID CAL STD	71319	8.02	72178	10.60	65012	11.89
	UPPER LIMIT	142638	8.52	144356	11.10	130024	12.39
	LOWER LIMIT	35659.5	7.52	36089	10.10	32506	11.39
	EPA SAMPLE NO.						
1	151249MB	75147	8.02	72488	10.61	68085	11.90
2	151250LCS	70493	8.02	72989	10.60	67949	11.89
3	Q2-TFS-MW-17-RS	74570	8.02	72816	10.60	68532	11.89
4	Q2-TFS-MW-17-MS	82791	8.02	78926	10.60	80767	11.89
5	Q2-TFS-MW-17-MSD	81522	8.02	78992	10.60	80257	11.89
6	Q2-TFS-MW-15	91596	8.02	88271	10.60	89711	11.89
7	Q2-TFS-MW-15-DUP	95861	8.02	87118	10.60	87704	11.89
8	Q2-TFS-MW-11	79547	8.02	81214	10.60	82318	11.89
9	Q2-TFS-MW-17	87831	8.02	85399	10.60	87741	11.89
10	Q2-TFS-MW-15DL1	86809	8.02	85482	10.60	85522	11.90
11	Q2-TFS-MW-15-DUPDL1	84359	8.02	84352	10.60	85349	11.89

IS4 = Phenanthrene-d10

IS5 = Chrysene-d12

IS6 = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1348

FORM VIII

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/30/12

Instrument ID: SMSD01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 9.59 S2 : 5.94 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	DFTPP1	47701	DFTPP1.D	10/30/12	0848				
2	STD1129156	48051	SIMCAL1.D	10/30/12	0909	9.6	5.95		
3	STD1129158	48050	SIMCAL2.D	10/30/12	0933	9.6	5.95		
4	STD1129159	48049	SIMCAL3.D	10/30/12	0957	9.6	5.95		
5	STD1129160	48048	SIMCAL4.D	10/30/12	1020	9.6	5.95		
6	STD1129161	48047	SIMCAL5.D	10/30/12	1044	9.59	5.95		
7	STD1129162	48046	SIMCAL6.D	10/30/12	1108	9.59	5.94		
8	STD1129163	48045	SIMCAL7.D	10/30/12	1132	9.59	5.94		
9	STD1129164	48044	SIMCAL8.D	10/30/12	1156	9.59	5.94		
10	STD1129165	48043	SIMCAL9.D	10/30/12	1221	9.59	5.94		
11	STD1129157	48042	SIMCAL10.D	10/30/12	1245	9.58	5.94		
12	SSC1129169	48052	SIMSEC.D	10/30/12	1309	9.59	5.95		
13	DFTPP2	47701	DFTPP2.D	10/30/12	1330				
14	CCV1129166	48046	SIMCCV1.D	10/30/12	1350	9.59	5.94		
15	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1443				
16	151249MB	151249MB	11363MB.D	10/30/12	1725	9.59	5.94		
17	151250LCS	151250LCS	11363LCS.D	10/30/12	1748	9.59	5.94		
18	Q2-TFS-MW-17-RS	350740701	40701.D	10/30/12	1812	9.59	5.94		
19	Q2-TFS-MW-17-MS	350740703	40703.D	10/30/12	1836	9.59	5.94		
20	Q2-TFS-MW-17-MSD	350740704	40704.D	10/30/12	1900	9.59	5.94		
21	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1924				
22	Q2-TFS-MW-15	350740705	40705.D	10/30/12	1948	9.59	5.94		
23	Q2-TFS-MW-15-DUP	350740706	40706.D	10/30/12	2012	9.59	5.94		
24	Q2-TFS-MW-11	350740707	40707.D	10/30/12	2036	9.59	5.94		
25	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2100				
26	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2124				

			QC LIMITS
S1	=	p-Terphenyl-d14	(+/- 0.64 MINUTES)
S2	=	2-Fluorobiphenyl	(+/- 0.39 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

131112 1348

FORM VIII

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/30/12

Instrument ID: SMSD01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 9.59 S2 : 5.94 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2148				
28	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2213				
29	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2237				
30	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2301				
31	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2325				
32	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2349				
33	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0013				
34	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0037				
35	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0102				
36	Q2-TFS-MW-17	350740702	40702.D	10/31/12	0126	9.59	5.94		
37	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0150				
38	DFTPP1	47701	DFTPP1.D	10/31/12	0650				
39	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0710				
40	CCV1129168	48046	SIMCCV2.D	10/31/12	0815	9.59	5.94		
41	Q2-TFS-MW-15DL1	350740705DL1	40705D5.D	10/31/12	0904	9.59	5.94		
42	Q2-TFS-MW-15-DUPDL1	350740706DL1	40706D5.D	10/31/12	0927	9.59	5.94		
43	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0951				
44	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1016				

			QC LIMITS
S1	=	p-Terphenyl-d14	(+/- 0.64 MINUTES)
S2	=	2-Fluorobiphenyl	(+/- 0.39 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151250LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
1-Methylnaphthalene	0.5	0.4	80.0			68 - 115
2-Methylnaphthalene	0.5	0.38	76.0			47 - 121
Acenaphthene	0.5	0.4	80.0			64 - 110
Acenaphthylene	0.5	0.4	80.0			45 - 115
Anthracene	0.5	0.42	84.0			61 - 108
Benzo(a)anthracene	0.5	0.44	88.0			53 - 110
Benzo(a)pyrene	0.5	0.44	88.0			55 - 109
Benzo(b)fluoranthene	0.5	0.44	88.0			65 - 110
Benzo(g,h,i)perylene	0.5	0.42	84.0			68 - 115
Benzo(k)fluoranthene	0.5	0.41	82.0			70 - 111
Chrysene	0.5	0.42	84.0			71 - 115
Dibenzo(a,h)anthracene	0.5	0.46	92.0			60 - 104
Fluoranthene	0.5	0.43	86.0			63 - 114
Fluorene	0.5	0.4	80.0			59 - 120
Indeno(1,2,3-cd)pyrene	0.5	0.44	88.0			66 - 110
Naphthalene	0.5	0.39	78.0			68 - 125
Phenanthrene	0.5	0.42	84.0			31 - 147
Pyrene	0.5	0.41	82.0			59 - 120

Spike Recovery: 0 out of 18 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Q2-TFS-MW-17-MS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
1-Methylnaphthalene	0.50	0	0.35	70.0	36 - 138
2-Methylnaphthalene	0.50	0	0.40	80.0	34 - 141
Acenaphthene	0.50	0.99	1.4	82.0	47 - 128
Acenaphthylene	0.50	0	0.41	82.0	32 - 153
Anthracene	0.50	0	0.41	82.0	53 - 128
Benzo(a)anthracene	0.50	0	0.46	92.0	59 - 166
Benzo(a)pyrene	0.50	0	0.41	82.0	43 - 146
Benzo(b)fluoranthene	0.50	0	0.40	80.0	56 - 173
Benzo(g,h,i)perylene	0.50	0	0.36	72.0	25 - 174
Benzo(k)fluoranthene	0.50	0	0.34	68.0	56 - 158
Chrysene	0.50	0	0.37	74.0	55 - 128
Dibenzo(a,h)anthracene	0.50	0	0.41	82.0	21 - 207
Fluoranthene	0.50	0.041	0.45	81.8	55 - 155
Fluorene	0.50	0	0.40	80.0	40 - 151
Indeno(1,2,3-cd)pyrene	0.50	0	0.38	76.0	19 - 166
Naphthalene	0.50	0.027	0.35	64.6	38 - 139
Phenanthrene	0.50	0	0.39	78.0	65 - 120
Pyrene	0.50	0	0.42	84.0	49 - 158

Spike Recovery: 0 out of 18 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1-Methylnaphthalene	0.50	0.36	72.0	2.8	20	36 - 138
2-Methylnaphthalene	0.50	0.40	80.0	0.0	20	34 - 141
Acenaphthene	0.50	1.5	102.0	6.9	20	47 - 128
Acenaphthylene	0.50	0.41	82.0	0.0	20	32 - 153
Anthracene	0.50	0.42	84.0	2.4	20	53 - 128
Benzo(a)anthracene	0.50	0.46	92.0	0.0	20	59 - 166
Benzo(a)pyrene	0.50	0.41	82.0	0.0	20	43 - 146
Benzo(b)fluoranthene	0.50	0.37	74.0	7.8	20	56 - 173
Benzo(g,h,i)perylene	0.50	0.36	72.0	0.0	20	25 - 174
Benzo(k)fluoranthene	0.50	0.36	72.0	5.7	20	56 - 158
Chrysene	0.50	0.36	72.0	2.7	20	55 - 128
Dibenzo(a,h)anthracene	0.50	0.40	80.0	2.5	20	21 - 207
Fluoranthene	0.50	0.45	81.8	0.0	20	55 - 155
Fluorene	0.50	0.41	82.0	2.5	20	40 - 151
Indeno(1,2,3-cd)pyrene	0.50	0.38	76.0	0.0	20	19 - 166
Naphthalene	0.50	0.35	64.6	0.0	20	38 - 139
Phenanthrene	0.50	0.40	80.0	2.5	19	65 - 120
Pyrene	0.50	0.42	84.0	0.0	17	49 - 158

RPD: 0 out of 18 outside limits

Spike Recovery: 0 out of 18 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

8270 SIM Standards Data

131112 1348

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 909 End: 1245

Min RRF for SPCC(#) = N/A Max %RSD for CCC(*) = 15 %

LAB FILE ID: RRF0.02 =SIMCAL1.D RRF0.05 =SIMCAL2.D
RRF0.07 =SIMCAL3.D RRF0.1 =SIMCAL4.D RRF0.2 =SIMCAL5.D

COMPOUND	RRF0.02	RRF0.05	RRF0.07	RRF0.1	RRF0.2	$\overline{RRF}$	%RSD OR R^2	RSD
1-Methylnaphthalene	0.761	0.882	0.894	0.946	0.860			
2-Methylnaphthalene	0.587	0.700	0.652	0.742	0.676			
Acenaphthene	* 1.286	1.418	1.312	1.479	1.352		*	
Acenaphthylene	1.816	1.920	1.899	2.003	1.900			
Anthracene	0.898	0.994	0.831	0.990	1.007			
Benzo(a)anthracene	1.026	0.929	0.866	0.966	0.911			
Benzo(a)pyrene	* 0.864	0.909	0.831	1.040	0.993		*	
Benzo(b)fluoranthene	0.895	0.956	0.957	0.988	0.933			
Benzo(g,h,i)perylene	1.044	1.078	1.023	1.166	1.036			
Benzo(k)fluoranthene	1.708	1.562	1.487	1.707	1.612			
Chrysene	1.357	1.469	1.331	1.490	1.411			
Dibenzo(a,h)anthracene	0.800	0.835	0.802	0.973	0.885			
Fluoranthene	* 1.079	1.178	1.115	1.242	1.173		*	
Fluorene	1.517	1.664	1.553	1.610	1.592			
Indeno(1,2,3-cd)pyrene	1.059	1.084	1.073	1.190	1.140			
Naphthalene	1.203	1.197	1.139	1.231	1.112			
Phenanthrene	1.108	1.129	1.075	1.159	1.106			
Pyrene	1.261	1.289	1.227	1.406	1.271			
==========								
p-Terphenyl-d14(SURR)	0.854	0.868	0.837	0.936	0.899			
2-Fluorobiphenyl(SURR)	1.479	1.560	1.381	1.640	1.556			

131112 1348

FORM VI

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 909 End: 1245

Min RRF for SPCC(#) = N/A Max %RSD for CCC(*) = 15 %

LAB FILE ID: RRF0.5 =SIMCAL6.D RRF0.7 =SIMCAL7.D
RRF1 =SIMCAL8.D RRF5 =SIMCAL9.D RRF10 =SIMCAL10.D

COMPOUND	RRF0.5	RRF0.7	RRF1	RRF5	RRF10	$\overline{RRF}$	%RSD OR R^2	RSD
1-Methylnaphthalene	0.888	0.854	0.887	0.730	0.752	0.8455	8.5	
2-Methylnaphthalene	0.722	0.720	0.765	0.790	0.816	0.7171	9.4	
Acenaphthene	* 1.401	1.372	1.421	1.429	1.472	1.39413	4.6	*
Acenaphthylene	2.005	1.971	2.045	2.134	2.267	1.99594	6.5	
Anthracene	1.089	1.076	1.138	1.228	1.258	1.05101	12.9	
Benzo(a)anthracene	0.928	0.933	1.010	1.117	1.186	0.98732	10.1	
Benzo(a)pyrene	* 1.061	1.078	1.159	1.258	1.294	1.04857	14.9	*
Benzo(b)fluoranthene	1.119	1.134	1.133	1.293	1.327	1.07352	14.2	
Benzo(g,h,i)perylene	1.107	1.135	1.179	1.264	1.282	1.13142	8.1	
Benzo(k)fluoranthene	1.528	1.490	1.660	1.536	1.535	1.5826	5.3	
Chrysene	1.434	1.412	1.445	1.279	1.261	1.38897	5.7	
Dibenzo(a,h)anthracene	0.981	1.000	1.090	1.207		0.95264	14.4	
Fluoranthene	* 1.253	1.260	1.315	1.361	1.388	1.23649	8.2	*
Fluorene	1.673	1.603	1.718	1.769	1.799	1.64974	5.6	
Indeno(1,2,3-cd)pyrene	1.223	1.241	1.328	1.440	1.483	1.22614	12.2	
Naphthalene	1.136	1.134	1.185	1.203	1.198	1.17395	3.4	
Phenanthrene	1.163	1.158	1.206	1.222	1.230	1.15565	4.5	
Pyrene	1.297	1.272	1.349	1.290	1.325	1.29884	3.9	
==========								
p-Terphenyl-d14(SURR)	0.928	0.894	0.949	0.900	0.919	0.89827	4.1	
2-Fluorobiphenyl(SURR)	1.653	1.564	1.669	1.605	1.613	1.57199	5.6	

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD01 CalibrationDate: 10/30/12 Time: 1309

CCV ID: SSC1129169 Lab File ID: SIMSEC.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = N/A Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
1-Methylnaphthalene		0.8455	0.94537	11.8	AVRG	
2-Methylnaphthalene		0.7171	0.58769	18.0	AVRG	
Acenaphthene	*	1.39413	1.365	2.1	AVRG	*
Acenaphthylene		1.99594	1.949	2.4	AVRG	
Anthracene		1.05101	1.005	4.4	AVRG	
Benzo(a)anthracene		0.98732	0.90189	8.7	AVRG	
Benzo(a)pyrene	*	1.04857	1.054	0.5	AVRG	*
Benzo(b)fluoranthene		1.07352	1.089	1.4	AVRG	
Benzo(g,h,i)perylene		1.13142	1.142	0.9	AVRG	
Benzo(k)fluoranthene		1.5826	1.582	0.0	AVRG	
Chrysene		1.38897	1.495	7.6	AVRG	
Dibenzo(a,h)anthracene		0.95264	0.98043	2.9	AVRG	
Fluoranthene	*	1.23649	1.31	5.9	AVRG	*
Fluorene		1.64974	1.615	2.1	AVRG	
Indeno(1,2,3-cd)pyrene		1.22614	1.233	0.6	AVRG	
Naphthalene		1.17395	1.188	1.2	AVRG	
Phenanthrene		1.15565	1.159	0.3	AVRG	
Pyrene		1.29884	1.276	1.8	AVRG	
==========						
p-Terphenyl-d14(SURR)		0.89827	0.88607	1.4	AVRG	
2-Fluorobiphenyl(SURR)		1.57199	1.494	5.0	AVRG	

131112 1348

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD01 CalibrationDate: 10/30/12 Time: 1350

CCV ID: CCV1129166 Lab File ID: SIMCCV1.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = N/A Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
1-Methylnaphthalene		0.8455	0.8359	1.1	AVRG	
2-Methylnaphthalene		0.7171	0.70203	2.1	AVRG	
Acenaphthene	*	1.39413	1.364	2.2	AVRG	*
Acenaphthylene		1.99594	1.899	4.9	AVRG	
Anthracene		1.05101	1.041	1.0	AVRG	
Benzo(a)anthracene		0.98732	0.89382	9.5	AVRG	
Benzo(a)pyrene	*	1.04857	1.04	0.8	AVRG	*
Benzo(b)fluoranthene		1.07352	1.077	0.3	AVRG	
Benzo(g,h,i)perylene		1.13142	1.094	3.3	AVRG	
Benzo(k)fluoranthene		1.5826	1.509	4.7	AVRG	
Chrysene		1.38897	1.455	4.8	AVRG	
Dibenzo(a,h)anthracene		0.95264	0.97648	2.5	AVRG	
Fluoranthene	*	1.23649	1.221	1.3	AVRG	*
Fluorene		1.64974	1.597	3.2	AVRG	
Indeno(1,2,3-cd)pyrene		1.22614	1.202	2.0	AVRG	
Naphthalene		1.17395	1.138	3.1	AVRG	
Phenanthrene		1.15565	1.145	0.9	AVRG	
Pyrene		1.29884	1.242	4.4	AVRG	
==========						
p-Terphenyl-d14(SURR)		0.89827	0.89111	0.8	AVRG	
2-Fluorobiphenyl(SURR)		1.57199	1.583	0.7	AVRG	

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FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD01 CalibrationDate: 10/31/12 Time: 0815

CCV ID: CCV1129168 Lab File ID: SIMCCV2.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = N/A Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
1-Methylnaphthalene	0.8455	0.88737	5.0	AVRG	
2-Methylnaphthalene	0.7171	0.72945	1.7	AVRG	
Acenaphthene	* 1.39413	1.387	0.5	AVRG	*
Acenaphthylene	1.99594	2.038	2.1	AVRG	
Anthracene	1.05101	1.134	7.9	AVRG	
Benzo(a)anthracene	0.98732	0.99953	1.2	AVRG	
Benzo(a)pyrene	* 1.04857	1.104	5.3	AVRG	*
Benzo(b)fluoranthene	1.07352	1.109	3.3	AVRG	
Benzo(g,h,i)perylene	1.13142	1.138	0.6	AVRG	
Benzo(k)fluoranthene	1.5826	1.434	9.4	AVRG	
Chrysene	1.38897	1.405	1.2	AVRG	
Dibenzo(a,h)anthracene	0.95264	1.123	17.9	AVRG	
Fluoranthene	* 1.23649	1.29	4.3	AVRG	*
Fluorene	1.64974	1.682	2.0	AVRG	
Indeno(1,2,3-cd)pyrene	1.22614	1.31	6.8	AVRG	
Naphthalene	1.17395	1.138	3.1	AVRG	
Phenanthrene	1.15565	1.146	0.8	AVRG	
Pyrene	1.29884	1.271	2.1	AVRG	
==========					
p-Terphenyl-d14(SURR)	0.89827	0.8992	0.1	AVRG	
2-Fluorobiphenyl(SURR)	1.57199	1.605	2.1	AVRG	

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FORM VII

8270 Semi-Volatile Organics

131112 1348

CASE NARRATIVE
Semi-Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW8270D.

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510 for 8270 semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met with the exception of:

Kepone exceeded the Max % RSD of 15% (35.9%) for the initial calibration. This compound has historically been a poor performer. No further action was taken, since this compound was not detected in any samples.

SSC1124049 was the second source verification standard analyzed with the initial calibration on 10/11/12. The %D was over the 20% limit for the following compounds: 1,3-Dinitrobenzene (+21.4%), 4-Nitroquinoline-1-oxide (+24%), Methapyriline (-29.8%), Aramite (-24.9%), 1,3,5-Trinitrobenzene (-43.6%), Kepone (+78.1%). No further action was taken, since these compounds were not detected in any samples.

CCV1129934 was analyzed with the water samples on 10/31/12. The %D was over the 20% limit for the following compounds: Safrole (+21.1%), Kepone (+76.3%). No further action was taken, since these compounds were not detected in any samples.

B. Blanks:

All acceptance criteria were met.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

C. Surrogates:

All acceptance criteria were met with the exception of:

Sample Q2-TFS-MW-15-DUP was recovered below criteria for the following surrogates: 2-Fluorobiphenyl at 45 % with criteria of (50-110), p-Terphenyl-d14 at 48.9 % with criteria of (50-135). Since the other four surrogates met criteria, no further action was taken. This sample contained large amounts of non-target compounds that could have interfered with surrogate recovery.

Samples coded accordingly.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:

LCS 151400LCS was analyzed with the water samples extracted on 10/31/02. The following analytes were recovered above criteria: 1,3-Dinitrobenzene at 120 % with criteria of (61-112), 2-Chloronaphthalene at 107 % with criteria of (50-105), Chlorobenzilate at 103 % with criteria of (58-101), Pentachloronitrobenzene(PCNB) at 108 % with criteria of (60-104), Safrole at 113 % with criteria of (52-100). Since these compounds were recovered only slightly above criteria, no further action was taken. The following analyte had marginal exceedance limit failures: a,a-Dimethylphenethylamine at 0 % with criteria of (60-140), Safrole at 113 % with criteria of (44-108). No further action was taken. None of these compounds were detected in any samples.

Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

A client requested MS/SD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met with the exception of:

MS - Q2-TFS-MW-17-MS was analyzed with the water samples extracted on 10/31/12. The following analytes were recovered below criteria:1,4-Naphthoquinone at 0 % with criteria of (28-143), 2-Naphthylamine at 58.2 % with criteria of (70-130), a,a-Dimethylphenethylamine at 42 % with criteria of (70-130) and the following analyte(s) were recovered above criteria:2,4-Dimethylphenol at 111 % with criteria of (30-110), Butylbenzylphthalate at 130 % with criteria of (45-115), Chlorobenzilate at 127 % with criteria of (58-101), N-Nitrosodiphenylamine at 116 % with criteria of (50-110), Pentachloronitrobenzene(PCNB) at 118 % with criteria of (60-104), Pentachlorophenol at 130 % with criteria of (40-115), Safrole at 115 % with criteria of (52-100).

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

SD - Q2-TFS-MW-17-MSD was analyzed with the water samples extracted on 10/31/12. The following analytes were recovered below criteria:1,4-Naphthoquinone at 7.7 % with criteria of (28-143), 2-Naphthylamine at 65.6 % with criteria of (70-130), a,a-Dimethylphenethylamine at 0 % with criteria of (70-130) and the following analyte(s) were recovered above criteria:1,3-Dinitrobenzene at 121 % with criteria of (61-112), 2,4,5-Trichlorophenol at 111 % with criteria of (50-110), Chlorobenzilate at 122 % with criteria of (58-101), Pentachloronitrobenzene(PCNB) at 114 % with criteria of (60-104), Pentachlorophenol at 122 % with criteria of (40-115). The following analytes exceeded RPD criteria:1,4-Naphthoquinone at 200 % with criteria of (20), a,a-Dimethylphenethylamine at 200 % with criteria of (20).

Samples coded accordingly.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Brian C. Spanh Title: Lab Director

SIGNED: DATE: 11/07/2012

SEMI-VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Method: 8270

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17-RS	350740701
Q2-TFS-MW-17	350740702
Q2-TFS-MW-15	350740705
Q2-TFS-MW-15-DUP	350740706
Q2-TFS-MW-11	350740707

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8270 Sample Data

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1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 40701.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1902

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.3	U	2.1	4.3	4.3
62-75-9	N-Nitrosodimethylamine	4.5	U	2.2	4.5	4.5
62-53-3	Aniline	5.7	U	2.8	5.7	5.7
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3.1	6.1	6.1
108-95-2	Phenol	3.5	U	1.7	3.5	4.1
95-57-8	2-Chlorophenol	5.9	U	3	5.9	5.9
541-73-1	1,3-Dichlorobenzene	5.5	U	2.8	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.8	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.3	U	2.6	5.3	5.3
100-51-6	Benzyl alcohol	6.3	U	3.2	6.3	10.2
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.4	6.7	6.7
95-48-7	2-Methylphenol	5.3	U	2.6	5.3	5.3
67-72-1	Hexachloroethane	5.3	U	2.6	5.3	5.3
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3.1	6.1	6.1
106-44-5	4-Methylphenol	12.4	U	6.2	12.4	12.4
98-95-3	Nitrobenzene	2	U	1	2	4.1
78-59-1	Isophorone	7.8	U	3.9	7.8	7.8
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4.1
105-67-9	2,4-Dimethylphenol	4.7	U	2.3	4.7	4.7
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.6	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.2	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.3	U	2.6	5.3	5.3
106-47-8	4-Chloroaniline	6.1	U	3.1	6.1	6.1
87-68-3	Hexachlorobutadiene	5.1	U	2.6	5.1	5.1
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.8	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.7	U	0.84	1.7	4.1

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.86	1.7	4.1
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.5	6.9	6.9
91-58-7	2-Chloronaphthalene	5.7	U	2.8	5.7	5.7
88-74-4	2-Nitroaniline	6.1	U	3.1	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3.1	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.7	U	2.8	5.7	5.7
99-09-2	3-Nitroaniline	5.7	U	2.8	5.7	5.7
51-28-5	2,4-Dinitrophenol	11.4	U	5.7	11.4	20.4
132-64-9	Dibenzofuran	5.5	U	2.8	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.7	U	2.8	5.7	5.7
100-02-7	4-Nitrophenol	8.2	U	4.1	8.2	8.2
7005-72-3	4-Chlorophenyl-phenylether	5.1	U	2.6	5.1	5.1
84-66-2	Diethylphthalate	5.7	U	2.8	5.7	5.7
100-01-6	4-Nitroaniline	3.1	U	1.5	3.1	4.1
534-52-1	4,6-Dinitro-2-methylphenol	8.2	U	4.1	8.2	8.2
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.5	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.7	U	2.3	4.7	4.7
118-74-1	Hexachlorobenzene	0.84	U	0.42	0.84	4.1
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.2
84-74-2	Di-n-butylphthalate	1.8	U	0.88	1.8	4.1
85-68-7	Butylbenzylphthalate	6.1	U	3.1	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.8	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	9	U	4.5	9	9
117-84-0	Di-n-octylphthalate	4.1	U	2	4.1	4.1
109-06-8	2-Picoline	8.2	U	4.1	8.2	8.2
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.8	5.5	5.5

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.2	6.3	6.3
66-27-3	Methylmethanesulfonate	3.9	U	1.9	3.9	4.1
62-50-0	Ethyl methanesulfonate	5.1	U	2.6	5.1	5.1
76-01-7	Pentachloroethane	5.1	U	2.6	5.1	20.4
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.8	5.5	5.5
98-86-2	Acetophenone	8.2	U	4.1	8.2	8.2
59-89-2	N-Nitrosomorpholine	6.1	U	3.1	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.8	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.6	U	16.3	32.6	32.6
87-65-0	2,6-Dichlorophenol	7.1	U	3.6	7.1	7.1
1888-71-7	Hexachloropropene	4.1	U	2	4.1	4.1
924-16-3	N-Nitrosodibutylamine	5.5	U	2.8	5.5	5.5
120-58-1	Isosafrole	5.3	U	2.6	5.3	5.3
95-94-3	1,2,4,5-Tetrachlorobenzene	4.5	U	2.2	4.5	4.5
94-59-7	Safrole	5.1	U	2.6	5.1	5.1
130-15-4	1,4-Naphthoquinone	6.3	U	3.2	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5.1	U	2.6	5.1	5.1
608-93-5	Pentachlorobenzene	4.5	U	2.2	4.5	4.5
134-32-7	1-Naphthylamine	3.7	U	1.8	3.7	4.1
91-59-8	2-Naphthylamine	5.1	U	2.6	5.1	5.1
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3.1	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.3	U	2.6	5.3	5.3
106-50-3	p-Phenylenediamine	4.1	U	2	4.1	4.1
62-44-2	Phenacetin	1.8	U	0.91	1.8	4.1
92-67-1	4-Aminobiphenyl	4.1	U	2	4.1	4.1
23950-58-5	Pronamide	1.6	U	0.83	1.6	4.1

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 40702.D

Sample wt/vol: 980 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1925

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4.1	U	2	4.1	4.1
88-85-7	Dinoseb	8.2	U	4.1	8.2	8.2
56-57-5	4-Nitroquinoline-1-oxide	7.6	U	3.8	7.6	10.2
91-80-5	Methapyriline	4.5	U	2.2	4.5	4.5
140-57-8	Aramite	8.2	U	4.1	8.2	8.2
60-11-7	p-Dimethylaminoazobenzene	1.3	U	0.63	1.3	4.1
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4.1
57-97-6	7,12-Dimethylbenz(a)anthracene	2	U	0.98	2	4.1
56-49-5	3-Methylcholanthrene	4.5	U	2.2	4.5	4.5
100-75-4	N-Nitrosopiperidine	5.7	U	2.8	5.7	5.7
99-35-4	1,3,5-Trinitrobenzene	4.1	U	2	4.1	4.1
2303-16-4	Diallate (Avadex)	1.7	U	0.86	1.7	4.1
465-73-6	Isodrin	5.3	U	2.6	5.3	5.3
510-15-6	Chlorobenzilate	1.6	U	0.8	1.6	4.1
143-50-0	Kepone	32.6	U	16.3	32.6	32.6
126-68-1	0,0,0-Triethylphosphorothioate	5.9	U	3	5.9	5.9

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 40705.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2036

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 40706.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2059

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	5.9	J	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 40707.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2123

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

8270 QC Summary

131112 1348

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/02

Concentrated Extract Volume: 1 Date Extracted: 10/31/02

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6	U	3	6	6
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.4	U	2.7	5.4	5.4
106-46-7	1,4-Dichlorobenzene	5.4	U	2.7	5.4	5.4
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.2	U	3.1	6.2	10
108-60-1	2,2'-Oxybis(1-chloropropane)	6.6	U	3.3	6.6	6.6
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6	U	3	6	6
106-44-5	4-Methylphenol	12.2	U	6.1	12.2	12.2
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.6	U	3.8	7.6	7.6
88-75-5	2-Nitrophenol	1.5	U	0.77	1.5	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7	U	3.5	7	7
120-83-2	2,4-Dichlorophenol	6.2	U	3.1	6.2	6.2
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6	U	3	6	6
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.4	U	2.7	5.4	5.4
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.82	1.6	4
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.84	1.7	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/02

Concentrated Extract Volume: 1 Date Extracted: 10/31/02

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
95-95-4	2,4,5-Trichlorophenol	6.8	U	3.4	6.8	6.8
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6	U	3	6	6
131-11-3	Dimethylphthalate	6	U	3	6	6
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.2	U	5.6	11.2	20
132-64-9	Dibenzofuran	5.4	U	2.7	5.4	5.4
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8	U	4	8	8
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8	U	4	8	8
86-30-6	N-Nitrosodiphenylamine	6.8	U	3.4	6.8	6.8
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.82	U	0.41	0.82	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10
84-74-2	Di-n-butylphthalate	1.7	U	0.86	1.7	4
85-68-7	Butylbenzylphthalate	6	U	3	6	6
91-94-1	3,3'-Dichlorobenzidine	5.4	U	2.7	5.4	5.4
117-81-7	Bis(2-ethylhexyl)phthalate	8.8	U	4.4	8.8	8.8
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8	U	4	8	8
10595-95-6	N-Nitrosomethylethylamine	5.4	U	2.7	5.4	5.4
55-18-5	N-Nitrosodiethylamine	6.2	U	3.1	6.2	6.2
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/02

Concentrated Extract Volume: 1 Date Extracted: 10/31/02

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20
930-55-2	N-Nitrosopyrrolidine	5.4	U	2.7	5.4	5.4
98-86-2	Acetophenone	8	U	4	8	8
59-89-2	N-Nitrosomorpholine	6	U	3	6	6
95-53-4	o-Toluidine	5.4	U	2.7	5.4	5.4
122-09-8	a,a-Dimethylphenethylamine	32	U	16	32	32
87-65-0	2,6-Dichlorophenol	7	U	3.5	7	7
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.4	U	2.7	5.4	5.4
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.2	U	3.1	6.2	6.2
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6	U	3	6	6
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.89	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.81	1.6	4
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8	U	4	8	8
56-57-5	4-Nitroquinoline-1-oxide	7.4	U	3.7	7.4	10

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/02

Concentrated Extract Volume: 1 Date Extracted: 10/31/02

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8	U	4	8	8
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.62	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.96	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.84	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.78	1.6	4
143-50-0	Kepone	32	U	16	32	32
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

SEMI-VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID: 11388MB.D Lab Sample ID: 151399MB

Instrument ID: SMSD03 Date Extracted: 10/31/02

Matrix: WATER Date Analyzed: 10/31/12

Level:(low/med) LOW Time Analyzed: 1727

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151400LCS	151400LCS	11388LCS.D	10/31/12	1751
2	Q2-TFS-MW-17-RS	350740701	40701.D	10/31/12	1902
3	Q2-TFS-MW-17	350740702	40702.D	10/31/12	1925
4	Q2-TFS-MW-17-MS	350740703	40703.D	10/31/12	1949
5	Q2-TFS-MW-17-MSD	350740704	40704.D	10/31/12	2012
6	Q2-TFS-MW-15	350740705	40705.D	10/31/12	2036
7	Q2-TFS-MW-15-DUP	350740706	40706.D	10/31/12	2059
8	Q2-TFS-MW-11	350740707	40707.D	10/31/12	2123

COMMENTS:

Page 1 of 1

131112 1348

Form IV

2A

WATER SEMI-VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507407

Column(1): HPMS-5 ID: 0.25 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
151399MB	56.7	34.6	81.6	94.8	106.0	82.4	0
151400LCS	52.7	33.6	86.6	102.0	102.0	87.0	0
Q2-TFS-MW-11	46.6	29.8	95.0	85.7	102.0	81.6	0
Q2-TFS-MW-15	64.6	19.2	75.0	74.1	91.9	90.5	0
Q2-TFS-MW-15-DUP	37.7	11.3	50.1	45.0 *	50.7	48.9 *	2
Q2-TFS-MW-17	51.2	32.2	87.6	89.2	108.0	87.8	0
Q2-TFS-MW-17-MS	57.7	34.8	92.8	85.1	93.3	104.0	0
Q2-TFS-MW-17-MSD	52.7	33.4	85.9	89.3	105.0	98.0	0
Q2-TFS-MW-17-RS	58.9	35.0	89.1	88.3	113.0	82.6	0

Control Limits

S1	=	2-Fluorophenol	20 -	110
S2	=	Phenol-d5	10 -	115
S3	=	Nitrobenzene-d5	40 -	110
S4	=	2-Fluorobiphenyl	50 -	110
S5	=	2,4,6-Tribromophenol	40 -	125
S6	=	p-Terphenyl-d14	50 -	135

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out
Control limit source: (lab/method) METHOD

Form II

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: DFTPP3.D DFTPP Injection Date: 10/11/12

Instrument ID: SMSD03 DFTPP Injection Time: 1255

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
51	10.0 - 80.0% of mass 198	32.6
68	Less than 2.0% of mass 69	0.2 (0.42)1
69	Mass 69 relative abundance	39.5
70	Less than 2.0% of mass 69	0 (0)1
127	10.0 - 80.0% of mass 198	48.6
197	Less than 2.0% of mass 198	0
198	Base Peak, 100% relative abundance	100
199	5.0 - 9.0% of mass 198	7
275	10.0 - 60.0% of mass 198	24.3
365	Greater than 1.0% of mass 198	2.5
441	0.0 - 24.0% of mass 442	11.3 (15.03)2
442	Greater than 50.0% of mass 198	75.4
443	15.0 - 24.0% of mass 442	14.6 (19.43)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1124035	47763	8270CAL7.D	10/11/12	1315
2	STD1124034	47764	8270CAL6.D	10/11/12	1339
3	STD1124033	47765	8270CAL5.D	10/11/12	1403
4	STD1124032	47766	8270CAL4.D	10/11/12	1426
5	STD1124031	47767	8270CAL3.D	10/11/12	1450
6	STD1124030	47768	8270CAL2.D	10/11/12	1514
7	STD1124029	47769	8270CAL1.D	10/11/12	1537
8	SSC1124039	47770	8270SEC.D	10/11/12	1601
9	STD1124057	47885	BSCAL7.D	10/11/12	1625
10	STD1124056	47962	BSCAL6.D	10/11/12	1649
11	STD1124055	47964	BSCAL5.D	10/11/12	1713
12	STD1124054	47965	BSCAL4.D	10/11/12	1736
13	STD1124053	47966	BSCAL3.D	10/11/12	1800
14	STD1124052	47967	BSCAL2.D	10/11/12	1824
15	STD1124051	47968	BSCAL1.D	10/11/12	1848
16	SSC1124059	47969	BSSEC.D	10/11/12	1912
17	STD1124046	47933	AP9CAL7.D	10/11/12	1935
18	STD1124045	47934	AP9CAL6.D	10/11/12	1959
19	STD1124044	47935	AP9CAL5.D	10/11/12	2023

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: DFTPP3.D DFTPP Injection Date: 10/11/12

Instrument ID: SMSD03 DFTPP Injection Time: 1255

GC Column: HPMS-5 ID: 0.25 (mm)

20	STD1124043	47936	AP9CAL4.D	10/11/12	2046
21	STD1124042	47937	AP9CAL3.D	10/11/12	2110
22	STD1124041	47938	AP9CAL2.D	10/11/12	2133
23	STD1124040	47939	AP9CAL1.D	10/11/12	2157
24	SSC1124049	47943	AP9SEC.D	10/11/12	2220

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Lab File ID: DFTPP2.D DFTPP Injection Date: 10/31/12

Instrument ID: SMSD03 DFTPP Injection Time: 1532

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	27.6	
68	Less than 2.0% of mass 69	0	(0)1
69	Mass 69 relative abundance	33.8	
70	Less than 2.0% of mass 69	0	(0)1
127	10.0 - 80.0% of mass 198	46.3	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.6	
275	10.0 - 60.0% of mass 198	25.6	
365	Greater than 1.0% of mass 198	2.7	
441	0.0 - 24.0% of mass 442	12.8	(14.03)2
442	Greater than 50.0% of mass 198	91.3	
443	15.0 - 24.0% of mass 442	17.6	(19.25)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129929	47766	8270CCV4.D	10/31/12	1615
2	CCV1129935	47965	BSCCV1.D	10/31/12	1639
3	CCV1129934	47936	AP9CCV1.D	10/31/12	1703
4	151399MB	151399MB	11388MB.D	10/31/12	1727
5	151400LCS	151400LCS	11388LCS.D	10/31/12	1751
6	Q2-TFS-MW-17-RS	350740701	40701.D	10/31/12	1902
7	Q2-TFS-MW-17	350740702	40702.D	10/31/12	1925
8	Q2-TFS-MW-17-MS	350740703	40703.D	10/31/12	1949
9	Q2-TFS-MW-17-MSD	350740704	40704.D	10/31/12	2012
10	Q2-TFS-MW-15	350740705	40705.D	10/31/12	2036
11	Q2-TFS-MW-15-DUP	350740706	40706.D	10/31/12	2059
12	Q2-TFS-MW-11	350740707	40707.D	10/31/12	2123

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID (Standard): 8270CAL4.D Date Analyzed: 10/11/2012

Instrument ID: SMSD03 Time Analyzed: 14:26

GC Column: HPMS-5 ID: 0.25 (mm)

		IS1 AREA	#	RT	IS2 AREA	#	RT	IS3 AREA	#	RT
	MID CAL STD	264318		4.54	982340		5.70	584218		7.40
	UPPER LIMIT	528636		5.04	1964680		6.20	1168436		7.90
	LOWER LIMIT	132159		4.04	491170		5.20	292109		6.90
	EPA SAMPLE NO.									
1	151399MB	304167		4.53	1006118		5.69	615332		7.38
2	151400LCS	362685		4.53	1096590		5.69	653905		7.38
3	Q2-TFS-MW-17-RS	315959		4.53	1003020		5.69	583371		7.38
4	Q2-TFS-MW-17	366631		4.53	1168123		5.69	636828		7.38
5	Q2-TFS-MW-17-MS	350725		4.53	1109780		5.69	800932		7.39
6	Q2-TFS-MW-17-MSD	357465		4.53	1186859		5.69	665151		7.39
7	Q2-TFS-MW-15	308632		4.53	1306859		5.69	866852		7.39
8	Q2-TFS-MW-15-DUP	311132		4.53	1408835		5.69	913970		7.39
9	Q2-TFS-MW-11	391807		4.53	1113775		5.69	656889		7.38

IS1 = 1,4-Dichlorobenzene-d4

IS2 = Naphthalene-d8

IS3 = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1348

FORM VIII

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID (Standard): 8270CAL4.D Date Analyzed: 10/11/2012

Instrument ID: SMSD03 Time Analyzed: 14:26

GC Column: HPMS-5 ID: 0.25 (mm)

		IS4 AREA	#	RT	IS5 AREA	#	RT	IS6 AREA	#	RT
	MID CAL STD	939810		8.85	1092640		11.45	1073524		12.79
	UPPER LIMIT	1879620		9.35	2185280		11.95	2147048		13.29
	LOWER LIMIT	469905		8.35	546320		10.95	536762		12.29
	EPA SAMPLE NO.									
1	151399MB	1016587		8.84	1173987		11.43	1116689		12.77
2	151400LCS	1058304		8.84	1321820		11.44	1268653		12.77
3	Q2-TFS-MW-17-RS	1009872		8.84	1221423		11.43	1181364		12.77
4	Q2-TFS-MW-17	1097591		8.84	1310993		11.43	1276173		12.77
5	Q2-TFS-MW-17-MS	1085360		8.84	1305821		11.44	1269220		12.77
6	Q2-TFS-MW-17-MSD	1135543		8.84	1336067		11.44	1338934		12.77
7	Q2-TFS-MW-15	1195937		8.85	1369450		11.44	1255357		12.77
8	Q2-TFS-MW-15-DUP	1205935		8.85	1422795		11.44	1333098		12.77
9	Q2-TFS-MW-11	1115762		8.84	1340202		11.43	1304612		12.77

IS4 = Phenanthrene-d10

IS5 = Chrysene-d12

IS6 = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1348

FORM VIII

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/11/12

Instrument ID: SMSD03

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.45 S2 : 4.2 S3 : 5.03 S4 : 6.73

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	DFTPP3	47701	DFTPP3.D	10/11/12	1255				
2	STD1124035	47763	8270CAL7.D	10/11/12	1315	3.46	4.21	5.04	6.74
3	STD1124034	47764	8270CAL6.D	10/11/12	1339	3.45	4.21	5.04	6.74
4	STD1124033	47765	8270CAL5.D	10/11/12	1403	3.45	4.2	5.03	6.74
5	STD1124032	47766	8270CAL4.D	10/11/12	1426	3.45	4.2	5.03	6.73
6	STD1124031	47767	8270CAL3.D	10/11/12	1450	3.45	4.2	5.03	6.73
7	STD1124030	47768	8270CAL2.D	10/11/12	1514	3.45	4.2	5.03	6.73
8	STD1124029	47769	8270CAL1.D	10/11/12	1537	3.45	4.19	5.03	6.73
9	SSC1124039	47770	8270SEC.D	10/11/12	1601	3.45	4.2	5.03	6.73
10	STD1124057	47885	BSCAL7.D	10/11/12	1625				
11	STD1124056	47962	BSCAL6.D	10/11/12	1649				
12	STD1124055	47964	BSCAL5.D	10/11/12	1713				
13	STD1124054	47965	BSCAL4.D	10/11/12	1736				
14	STD1124053	47966	BSCAL3.D	10/11/12	1800				
15	STD1124052	47967	BSCAL2.D	10/11/12	1824				
16	STD1124051	47968	BSCAL1.D	10/11/12	1848				
17	SSC1124059	47969	BSSEC.D	10/11/12	1912				
18	STD1124046	47933	AP9CAL7.D	10/11/12	1935				
19	STD1124045	47934	AP9CAL6.D	10/11/12	1959				
20	STD1124044	47935	AP9CAL5.D	10/11/12	2023				
21	STD1124043	47936	AP9CAL4.D	10/11/12	2046				
22	STD1124042	47937	AP9CAL3.D	10/11/12	2110				
23	STD1124041	47938	AP9CAL2.D	10/11/12	2133				
24	STD1124040	47939	AP9CAL1.D	10/11/12	2157				
25	SSC1124049	47943	AP9SEC.D	10/11/12	2220				
26	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/11/12	2244				

			QC LIMITS
S1	=	2-Fluorophenol	(+/- 0.27 MINUTES)
S2	=	Phenol-d5	(+/- 0.27 MINUTES)
S3	=	Nitrobenzene-d5	(+/- 0.34 MINUTES)
S4	=	2-Fluorobiphenyl	(+/- 0.44 MINUTES)
S5	=	2,4,6-Tribromophenol	(+/- 0.44 MINUTES)
S6	=	p-Terphenyl-d14	(+/- 0.69 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/11/12

Instrument ID: SMSD03

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.45 S2 : 4.2 S3 : 5.03 S4 : 6.73

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1356				
28	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1417				
29	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1440				
30	DFTPP2	47701	DFTPP2.D	10/31/12	1532				
31	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1552				
32	CCV1129929	47766	8270CCV4.D	10/31/12	1615	3.44	4.19	5.02	6.72
33	CCV1129935	47965	BSCCV1.D	10/31/12	1639				
34	CCV1129934	47936	AP9CCV1.D	10/31/12	1703				
35	151399MB	151399MB	11388MB.D	10/31/12	1727	3.44	4.18	5.02	6.72
36	151400LCS	151400LCS	11388LCS.D	10/31/12	1751	3.44	4.18	5.02	6.72
37	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1814				
38	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1838				
39	Q2-TFS-MW-17-RS	350740701	40701.D	10/31/12	1902	3.43	4.18	5.02	6.72
40	Q2-TFS-MW-17	350740702	40702.D	10/31/12	1925	3.44	4.18	5.02	6.72
41	Q2-TFS-MW-17-MS	350740703	40703.D	10/31/12	1949	3.44	4.19	5.02	6.72
42	Q2-TFS-MW-17-MSD	350740704	40704.D	10/31/12	2012	3.44	4.19	5.02	6.72
43	Q2-TFS-MW-15	350740705	40705.D	10/31/12	2036	3.44	4.19	5.02	6.73
44	Q2-TFS-MW-15-DUP	350740706	40706.D	10/31/12	2059	3.44	4.2	5.02	6.72
45	Q2-TFS-MW-11	350740707	40707.D	10/31/12	2123	3.44	4.19	5.02	6.72
46	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2147				
47	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2210				
48	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2234				
49	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2257				
50	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2321				
51	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2345				
52	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	0008				

QC LIMITS

S1	=	2-Fluorophenol	(+/- 0.27 MINUTES)
S2	=	Phenol-d5	(+/- 0.27 MINUTES)
S3	=	Nitrobenzene-d5	(+/- 0.34 MINUTES)
S4	=	2-Fluorobiphenyl	(+/- 0.44 MINUTES)
S5	=	2,4,6-Tribromophenol	(+/- 0.44 MINUTES)
S6	=	p-Terphenyl-d14	(+/- 0.69 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/11/12

Instrument ID: SMSD03

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.45 S2 : 4.2 S3 : 5.03 S4 : 6.73

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
53	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	0032				
54	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	0055				

			QC LIMITS
S1	=	2-Fluorophenol	(+/- 0.27 MINUTES)
S2	=	Phenol-d5	(+/- 0.27 MINUTES)
S3	=	Nitrobenzene-d5	(+/- 0.34 MINUTES)
S4	=	2-Fluorobiphenyl	(+/- 0.44 MINUTES)
S5	=	2,4,6-Tribromophenol	(+/- 0.44 MINUTES)
S6	=	p-Terphenyl-d14	(+/- 0.69 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151400LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Pyridine	40	13.8	34.5			22 - 70
N-Nitrosodimethylamine	40	18.9	47.2			25 - 110
Aniline	40	26.5	66.2			14 - 99
Bis(2-chloroethyl)ether	40	36.2	90.5			35 - 110
Phenol	40	14.1	35.2			0 - 115
2-Chlorophenol	40	31.1	77.8			35 - 105
1,3-Dichlorobenzene	40	28.7	71.8			30 - 100
1,4-Dichlorobenzene	40	30.9	77.2			30 - 100
1,2-Dichlorobenzene	40	27.9	69.8			35 - 100
Benzyl alcohol	40	26.2	65.5			30 - 110
2,2'-Oxybis(1-chloropropane)	40	31.8	79.5			25 - 130
2-Methylphenol	40	26	65.0			40 - 110
Hexachloroethane	40	25	62.5			30 - 95
N-Nitroso-di-n-propylamine	40	28.8	72.0			35 - 130
4-Methylphenol	40	22.7	56.8			30 - 110
Nitrobenzene	40	34.5	86.2			45 - 110
Isophorone	40	32.5	81.2			50 - 110
2-Nitrophenol	40	37.8	94.5			40 - 115
2,4-Dimethylphenol	40	39.2	98.0			30 - 110
Bis(2-chloroethoxy)methane	40	37.8	94.5			45 - 105
2,4-Dichlorophenol	40	36.6	91.5			50 - 105
1,2,4-Trichlorobenzene	40	34.4	86.0			35 - 105
4-Chloroaniline	40	35.5	88.8			15 - 110
Hexachlorobutadiene	40	35.6	89.0			25 - 105
4-Chloro-3-methylphenol	40	37.2	93.0			45 - 110
Hexachlorocyclopentadiene	40	30.6	76.5			13 - 80
2,4,6-Trichlorophenol	40	42.8	107.0			50 - 115
2,4,5-Trichlorophenol	40	41.4	104.0			50 - 110
2-Chloronaphthalene	40	42.9	107.0 *			50 - 105
2-Nitroaniline	40	43.8	110.0			50 - 115
Dimethylphthalate	40	41.3	103.0			25 - 125
2,6-Dinitrotoluene	40	43.2	108.0			50 - 115

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151400LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
3-Nitroaniline	40	39	97.5			20 - 125
2,4-Dinitrophenol	80	86.3	108.0			15 - 140
Dibenzofuran	40	37.4	93.5			55 - 105
2,4-Dinitrotoluene	40	39	97.5			50 - 120
4-Nitrophenol	40	15	37.5			0 - 125
4-Chlorophenyl-phenylether	40	37.3	93.2			50 - 110
Diethylphthalate	40	39.1	97.8			40 - 120
4-Nitroaniline	40	41.7	104.0			35 - 120
4,6-Dinitro-2-methylphenol	40	40.1	100.0			40 - 130
N-Nitrosodiphenylamine	40	41.3	103.0			50 - 110
4-Bromophenyl-phenylether	40	40.1	100.0			50 - 115
Hexachlorobenzene	40	38.1	95.2			50 - 110
Pentachlorophenol	40	46.1	115.0			40 - 115
Di-n-butylphthalate	40	41.4	104.0			55 - 115
Butylbenzylphthalate	40	42.2	106.0			45 - 115
3,3'-Dichlorobenzidine	80	78.9	98.6			20 - 110
Bis(2-ethylhexyl)phthalate	40	42.2	106.0			40 - 125
Di-n-octylphthalate	40	45.1	113.0			35 - 135
2-Picoline	40	17.6	44.0			15 - 110
N-Nitrosomethylethylamine	40	25.5	63.8			25 - 131
N-Nitrosodiethylamine	40	30.4	76.0			46 - 111
Methylmethanesulfonate	40	24.4	61.0			15 - 103
Ethyl methanesulfonate	40	36.3	90.8			46 - 113
Pentachloroethane	40	28.5	71.2			27 - 99
N-Nitrosopyrrolidine	40	24.1	60.2			51 - 112
Acetophenone	80	66.6	83.2			45 - 118
N-Nitrosomorpholine	40	23.8	59.5			51 - 112
o-Toluidine	40	24.8	62.0			49 - 97
a,a-Dimethylphenethylamine	40	0	0.0 *			70 - 130
2,6-Dichlorophenol	40	36.4	91.0			50 - 135
Hexachloropropene	40	29.6	74.0			21 - 105
N-Nitrosodibutylamine	40	37.7	94.2			43 - 130

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151400LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Isosafrole	40	39.4	98.5			70 - 130
1,2,4,5-Tetrachlorobenzene	40	33.8	84.5			40 - 100
Safrole	40	45.1	113.0 *			52 - 100
1,4-Naphthoquinone	40	14.3	35.8			28 - 143
1,3-Dinitrobenzene	40	47.9	120.0 *			61 - 112
Pentachlorobenzene	40	35.7	89.2			50 - 99
1-Naphthylamine	40	26.7	66.8			38 - 91
2-Naphthylamine	40	25.2	63.0 *			70 - 130
2,3,4,6-Tetrachlorophenol	40	37.4	93.5			55 - 122
5-Nitro-o-toluidine	40	31.8	79.5			70 - 130
p-Phenylenediamine	40	33	82.5			58 - 107
Phenacetin	40	32.9	82.2			57 - 114
4-Aminobiphenyl	40	35.8	89.5			49 - 103
Pronamide	40	34.5	86.2			59 - 99
Pentachloronitrobenzene(PCNB)	40	43.2	108.0 *			60 - 104
Dinoseb	40	40.6	102.0			44 - 142
4-Nitroquinoline-1-oxide	40	34.7	86.8			10 - 125
Methapyriline	40	6.6	16.5			0 - 90
Aramite	40	28.8	72.0			41 - 127
p-Dimethylaminoazobenzene	40	36.8	92.0			70 - 130
2-Acetylaminofluorene	40	35.9	89.8			63 - 103
7,12-Dimethylbenz(a)anthracene	40	35.1	87.8			57 - 95
3-Methylcholanthrene	40	32.6	81.5			52 - 105
N-Nitrosopiperidine	40	34.4	86.0			53 - 112
1,3,5-Trinitrobenzene	40	21	52.5			29 - 163
Diallate (Avadex)	40	31.9	79.8			56 - 98
Isodrin	40	39.5	98.8			54 - 110
Chlorobenzilate	40	41.2	103.0 *			58 - 101
Kepone	40	55	138.0			0 - 165
0,0,0-Triethylphosphorothioate	40	26.5	66.2			50 - 106

Spike Recovery: 7 out of 94 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1348

Form III

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Q2-TFS-MW-17-MS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
Pyridine	40	0	20	49.5	22 - 70
N-Nitrosodimethylamine	40	0	22	55.0	25 - 110
Aniline	40	0	28	69.7	14 - 99
Bis(2-chloroethyl)ether	40	0	37	92.0	35 - 110
Phenol	40	0	15	37.1	0 - 115
2-Chlorophenol	40	0	38	95.0	35 - 105
1,3-Dichlorobenzene	40	0	35	87.6	30 - 100
1,4-Dichlorobenzene	40	0	32	80.8	30 - 100
1,2-Dichlorobenzene	40	0	34	84.6	35 - 100
Benzyl alcohol	40	0	32	80.1	30 - 110
2,2'-Oxybis(1-chloropropane)	40	0	32	80.1	25 - 130
2-Methylphenol	40	0	31	77.6	40 - 110
Hexachloroethane	40	0	30	74.1	30 - 95
N-Nitroso-di-n-propylamine	40	0	36	90.8	35 - 130
4-Methylphenol	40	0	30	75.4	30 - 110
Nitrobenzene	40	0	37	91.8	45 - 110
Isophorone	40	0	37	91.5	50 - 110
2-Nitrophenol	40	0	44	110.0	40 - 115
2,4-Dimethylphenol	40	0	45	111.0 *	30 - 110
Bis(2-chloroethoxy)methane	40	0	42	104.0	45 - 105
2,4-Dichlorophenol	40	0	41	103.0	50 - 105
1,2,4-Trichlorobenzene	40	0	39	96.5	35 - 105
4-Chloroaniline	40	0	38	94.8	15 - 110
Hexachlorobutadiene	40	0	39	96.8	25 - 105
4-Chloro-3-methylphenol	40	0	44	110.0	45 - 110
Hexachlorocyclopentadiene	40	0	29	72.6	13 - 80
2,4,6-Trichlorophenol	40	0	40	100.0	50 - 115
2,4,5-Trichlorophenol	40	0	41	102.0	50 - 110
2-Chloronaphthalene	40	0	38	94.5	50 - 105
2-Nitroaniline	40	0	35	87.3	50 - 115

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Q2-TFS-MW-17-MS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
Dimethylphthalate	40	0	38	93.5	25 - 125
2,6-Dinitrotoluene	40	0	39	97.3	50 - 115
3-Nitroaniline	40	0	42	104.0	20 - 125
2,4-Dinitrophenol	80	0	93	116.0	15 - 140
Dibenzofuran	40	0	35	86.6	55 - 105
2,4-Dinitrotoluene	40	0	36	90.8	50 - 120
4-Nitrophenol	40	0	17	42.3	0 - 125
4-Chlorophenyl-phenylether	40	0	35	86.3	50 - 110
Diethylphthalate	40	0	36	89.8	40 - 120
4-Nitroaniline	40	0	39	97.5	35 - 120
4,6-Dinitro-2-methylphenol	40	0	46	115.0	40 - 130
N-Nitrosodiphenylamine	40	0	47	116.0 *	50 - 110
4-Bromophenyl-phenylether	40	0	44	110.0	50 - 115
Hexachlorobenzene	40	0	42	104.0	50 - 110
Pentachlorophenol	40	0	52	130.0 *	40 - 115
Di-n-butylphthalate	40	0	39	97.0	55 - 115
Butylbenzylphthalate	40	0	52	130.0 *	45 - 115
3,3'-Dichlorobenzidine	80	0	68	85.2	20 - 110
Bis(2-ethylhexyl)phthalate	40	0	46	116.0	40 - 125
Di-n-octylphthalate	40	0	47	116.0	35 - 135
2-Picoline	40	0	24	60.9	15 - 110
N-Nitrosomethylethylamine	40	0	32	78.9	25 - 131
N-Nitrosodiethylamine	40	0	34	83.8	46 - 111
Methylmethanesulfonate	40	0	29	72.4	15 - 103
Ethyl methanesulfonate	40	0	40	100.0	46 - 113
Pentachloroethane	40	0	31	77.6	27 - 99
N-Nitrosopyrrolidine	40	0	33	81.1	51 - 112
Acetophenone	80	0	78	97.5	45 - 118
N-Nitrosomorpholine	40	0	30	75.4	51 - 112
o-Toluidine	40	0	30	75.1	49 - 97

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Q2-TFS-MW-17-MS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
a,a-Dimethylphenethylamine	40	0	17	42.0 *	70 - 130
2,6-Dichlorophenol	40	0	39	96.5	50 - 135
Hexachloropropene	40	0	34	84.6	21 - 105
N-Nitrosodibutylamine	40	0	34	84.1	43 - 130
Isosafrole	40	0	48	118.0	70 - 130
1,2,4,5-Tetrachlorobenzene	40	0	35	87.6	40 - 100
Safrole	40	0	46	115.0 *	52 - 100
1,4-Naphthoquinone	40	0	0	0.0 *	28 - 143
1,3-Dinitrobenzene	40	0	43	107.0	61 - 112
Pentachlorobenzene	40	0	36	90.8	50 - 99
1-Naphthylamine	40	0	25	61.2	38 - 91
2-Naphthylamine	40	0	23	58.2 *	70 - 130
2,3,4,6-Tetrachlorophenol	40	0	38	93.5	55 - 122
5-Nitro-o-toluidine	40	0	30	73.4	70 - 130
p-Phenylenediamine	40	0	37	91.5	58 - 107
Phenacetin	40	0	33	81.1	57 - 114
4-Aminobiphenyl	40	0	34	84.6	49 - 103
Pronamide	40	0	38	93.8	59 - 99
Pentachloronitrobenzene(PCNB)	40	0	47	118.0 *	60 - 104
Dinoseb	40	0	47	116.0	44 - 142
4-Nitroquinoline-1-oxide	40	0	6.0	14.9	10 - 125
Methapyriline	40	0	21	52.0	0 - 90
Aramite	40	0	35	87.6	41 - 127
p-Dimethylaminoazobenzene	40	0	41	103.0	70 - 130
2-Acetylaminofluorene	40	0	41	103.0	63 - 103
7,12-Dimethylbenz(a)anthracene	40	0	38	93.8	57 - 95
3-Methylcholanthrene	40	0	35	86.8	52 - 105
N-Nitrosopiperidine	40	0	37	91.3	53 - 112
1,3,5-Trinitrobenzene	40	0	17	43.0	29 - 163
Diallate (Avadex)	40	0	28	69.7	56 - 98

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
Isodrin	40	0	27	67.2	54 - 110
Chlorobenzilate	40	0	51	127.0 *	58 - 101
Kepone	40	0	0	0.0	0 - 165
0,0,0-Triethylphosphorothioate	40	0	31	77.4	50 - 106

Spike Recovery: 10 out of 94 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Pyridine	40	19	47.3	4.1	20	22 - 70
N-Nitrosodimethylamine	40	21	52.0	5.1	20	25 - 110
Aniline	40	28	68.8	0.7	20	14 - 99
Bis(2-chloroethyl)ether	40	36	89.1	2.7	20	35 - 110
Phenol	40	15	36.6	0.7	20	0 - 115
2-Chlorophenol	40	38	93.1	1.6	20	35 - 105
1,3-Dichlorobenzene	40	33	82.7	5.2	20	30 - 100
1,4-Dichlorobenzene	40	33	80.7	0.3	20	30 - 100
1,2-Dichlorobenzene	40	34	83.7	0.6	20	35 - 100
Benzyl alcohol	40	32	80.2	0.6	20	30 - 110
2,2'-Oxybis(1-chloropropane)	40	31	77.7	2.5	20	25 - 130
2-Methylphenol	40	30	73.3	5.3	20	40 - 110
Hexachloroethane	40	29	72.0	2.4	20	30 - 95
N-Nitroso-di-n-propylamine	40	33	82.2	9.5	20	35 - 130
4-Methylphenol	40	26	63.4	16.8	20	30 - 110
Nitrobenzene	40	35	87.6	4.1	20	45 - 110
Isophorone	40	35	87.4	4.2	20	50 - 110
2-Nitrophenol	40	43	106.0	3.0	20	40 - 115
2,4-Dimethylphenol	40	43	107.0	3.4	20	30 - 110
Bis(2-chloroethoxy)methane	40	40	98.3	5.2	20	45 - 105
2,4-Dichlorophenol	40	40	98.8	3.7	20	50 - 105
1,2,4-Trichlorobenzene	40	36	88.1	8.6	20	35 - 105
4-Chloroaniline	40	37	91.1	3.5	20	15 - 110
Hexachlorobutadiene	40	37	92.6	3.9	20	25 - 105
4-Chloro-3-methylphenol	40	38	94.6	14.6	20	45 - 110
Hexachlorocyclopentadiene	40	32	80.0	10.1	20	13 - 80
2,4,6-Trichlorophenol	40	44	110.0	9.5	20	50 - 115
2,4,5-Trichlorophenol	40	45	111.0 *	9.3	20	50 - 110
2-Chloronaphthalene	40	38	94.1	0.0	20	50 - 105
2-Nitroaniline	40	38	93.6	7.4	20	50 - 115

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268 Q2-TFS-MW-17-MSD

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Dimethylphthalate	40	40	99.5	6.7	20	25 - 125
2,6-Dinitrotoluene	40	42	103.0	6.4	20	50 - 115
3-Nitroaniline	40	38	93.3	10.1	20	20 - 125
2,4-Dinitrophenol	81	100	125.0	8.4	20	15 - 140
Dibenzofuran	40	40	98.5	13.4	20	55 - 105
2,4-Dinitrotoluene	40	44	110.0	19.5	20	50 - 120
4-Nitrophenol	40	20	49.0	15.2	20	0 - 125
4-Chlorophenyl-phenylether	40	40	99.3	14.4	20	50 - 110
Diethylphthalate	40	43	105.0	16.5	20	40 - 120
4-Nitroaniline	40	46	114.0	15.7	20	35 - 120
4,6-Dinitro-2-methylphenol	40	44	108.0	5.5	20	40 - 130
N-Nitrosodiphenylamine	40	43	106.0	8.2	20	50 - 110
4-Bromophenyl-phenylether	40	40	99.5	9.0	20	50 - 115
Hexachlorobenzene	40	39	95.8	7.9	20	50 - 110
Pentachlorophenol	40	49	122.0 *	6.1	20	40 - 115
Di-n-butylphthalate	40	44	109.0	12.3	20	55 - 115
Butylbenzylphthalate	40	45	112.0	14.3	20	45 - 115
3,3'-Dichlorobenzidine	81	63	77.7	8.7	20	20 - 110
Bis(2-ethylhexyl)phthalate	40	45	112.0	2.4	20	40 - 125
Di-n-octylphthalate	40	45	111.0	4.6	20	35 - 135
2-Picoline	40	24	59.7	1.6	20	15 - 110
N-Nitrosomethylethylamine	40	29	71.5	9.2	20	25 - 131
N-Nitrosodiethylamine	40	36	87.9	5.2	20	46 - 111
Methylmethanesulfonate	40	27	66.3	8.2	20	15 - 103
Ethyl methanesulfonate	40	39	96.8	3.0	20	46 - 113
Pentachloroethane	40	30	75.2	2.6	20	27 - 99
N-Nitrosopyrrolidine	40	29	71.8	11.7	20	51 - 112
Acetophenone	81	70	86.6	11.3	20	45 - 118
N-Nitrosomorpholine	40	29	71.3	5.1	20	51 - 112
o-Toluidine	40	29	71.0	5.1	20	49 - 97

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268 Q2-TFS-MW-17-MSD

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
a,a-Dimethylphenethylamine	40	0	0.0 *	200.0 *	20	70 - 130
2,6-Dichlorophenol	40	40	99.8	3.8	20	50 - 135
Hexachloropropene	40	32	79.2	6.1	20	21 - 105
N-Nitrosodibutylamine	40	35	85.6	2.3	20	43 - 130
Isosafrole	40	42	104.0	12.3	20	70 - 130
1,2,4,5-Tetrachlorobenzene	40	40	98.5	12.3	20	40 - 100
Safrole	40	40	98.8	14.6	20	52 - 100
1,4-Naphthoquinone	40	3.1	7.7 *	200.0 *	20	28 - 143
1,3-Dinitrobenzene	40	49	121.0 *	12.8	20	61 - 112
Pentachlorobenzene	40	40	97.8	7.9	20	50 - 99
1-Naphthylamine	40	27	67.6	10.4	20	38 - 91
2-Naphthylamine	40	26	65.6 *	12.4	20	70 - 130
2,3,4,6-Tetrachlorophenol	40	45	111.0	17.7	20	55 - 122
5-Nitro-o-toluidine	40	35	86.9	17.3	20	70 - 130
p-Phenylenediamine	40	36	87.9	3.6	20	58 - 107
Phenacetin	40	32	79.5	1.5	20	57 - 114
4-Aminobiphenyl	40	32	79.2	6.1	20	49 - 103
Pronamide	40	36	90.3	3.2	20	59 - 99
Pentachloronitrobenzene(PCNB)	40	46	114.0 *	2.8	20	60 - 104
Dinoseb	40	49	121.0	4.8	20	44 - 142
4-Nitroquinoline-1-oxide	40	5.0	12.4	18.2	20	10 - 125
Methapyriline	40	21	52.5	1.4	20	0 - 90
Aramite	40	35	86.9	0.3	20	41 - 127
p-Dimethylaminoazobenzene	40	38	92.8	9.9	20	70 - 130
2-Acetylaminofluorene	40	40	100.0	2.0	20	63 - 103
7,12-Dimethylbenz(a)anthracene	40	38	93.8	0.5	20	57 - 95
3-Methylcholanthrene	40	35	86.6	0.3	20	52 - 105
N-Nitrosopiperidine	40	38	93.1	2.4	20	53 - 112
1,3,5-Trinitrobenzene	40	21	51.7	18.8	20	29 - 163
Diallate (Avadex)	40	33	82.4	17.3	20	56 - 98

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

3

SEMI-VOLATILE ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Isodrin	40	29	72.5	8.2	20	54 - 110
Chlorobenzilate	40	49	122.0 *	3.6	20	58 - 101
Kepone	40	0	0.0		20	0 - 165
0,0,0-Triethylphosphorothioate	40	33	82.7	7.1	20	50 - 106

RPD: 2 out of 94 outside limits

Spike Recovery: 8 out of 94 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1348

8270 Standards Data

131112 1348

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF4 =8270CAL1.D RRF10 =8270CAL2.D
RRF20 =8270CAL3.D RRF45 =8270CAL4.D RRF60 =8270CAL5.D

COMPOUND		RRF4	RRF10	RRF20	RRF45	RRF60	$\overline{RRF}$	%RSD OR R^2	RSD
Pyridine		1.668	1.776	1.767	1.759	1.718			
N-Nitrosodimethylamine		0.521	0.547	0.538	0.536	0.542			
Aniline		2.112	2.172	2.100	1.961	2.013			
Bis(2-chloroethyl)ether		1.458	1.499	1.444	1.407	1.398			
Phenol	*	1.775	1.845	1.796	1.724	1.709		*	
2-Chlorophenol		1.321	1.428	1.393	1.377	1.384			
1,3-Dichlorobenzene		1.578	1.582	1.535	1.491	1.471			
1,4-Dichlorobenzene	*	1.602	1.598	1.540	1.486	1.485		*	
1,2-Dichlorobenzene		1.516	1.516	1.483	1.429	1.416			
Benzyl alcohol		0.833	0.933	0.908	0.928	0.939			
2,2'-Oxybis(1-chloropropane)		1.823	1.835	1.775	1.723	1.728			
2-Methylphenol		1.057	1.115	1.111	1.086	1.090			
Hexachloroethane		0.602	0.614	0.601	0.596	0.594			
N-Nitroso-di-n-propylamine	#	1.002	1.074	1.053	1.030	1.050		#	
4-Methylphenol		1.523	1.640	1.631	1.593	1.582			
Nitrobenzene		0.427	0.433	0.424	0.404	0.408			
Isophorone		0.743	0.766	0.763	0.730	0.726			
2-Nitrophenol	*	0.172	0.201	0.204	0.206	0.208		*	
2,4-Dimethylphenol		0.316	0.325	0.322	0.302	0.310			
Bis(2-chloroethoxy)methane		0.504	0.508	0.496	0.467	0.473			
2,4-Dichlorophenol	*	0.294	0.325	0.318	0.308	0.312		*	
1,2,4-Trichlorobenzene		0.354	0.360	0.348	0.328	0.330			
4-Chloroaniline		0.451	0.477	0.472	0.446	0.452			
Hexachlorobutadiene	*	0.198	0.205	0.200	0.192	0.192		*	
4-Chloro-3-methylphenol	*	0.297	0.326	0.323	0.315	0.322		*	
Hexachlorocyclopentadiene	#	0.381	0.417	0.419	0.404	0.411		#	
2,4,6-Trichlorophenol	*	0.366	0.385	0.384	0.379	0.382		*	
2,4,5-Trichlorophenol		0.402	0.441	0.422	0.420	0.422			
2-Chloronaphthalene		1.218	1.234	1.211	1.134	1.112			
2-Nitroaniline		0.294	0.331	0.347	0.352	0.349			
Dimethylphthalate		1.426	1.447	1.385	1.281	1.253			
2,6-Dinitrotoluene		0.281	0.315	0.310	0.316	0.318			
3-Nitroaniline		0.309	0.352	0.355	0.341	0.343			
2,4-Dinitrophenol	#		0.107	0.145	0.178	0.192		#	

131112 1348

FORM VI

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF4 =8270CAL1.D RRF10 =8270CAL2.D
RRF20 =8270CAL3.D RRF45 =8270CAL4.D RRF60 =8270CAL5.D

COMPOUND	RRF4	RRF10	RRF20	RRF45	RRF60	$\overline{RRF}$	%RSD OR R^2	RSD
Dibenzofuran	1.732	1.744	1.659	1.532	1.515			
2,4-Dinitrotoluene	0.363	0.415	0.414	0.393	0.403			
4-Nitrophenol #	0.127	0.149	0.153	0.160	0.167		#	
4-Chlorophenyl-phenylether	0.688	0.689	0.652	0.588	0.574			
Diethylphthalate	1.327	1.280	1.202	1.140	1.155			
4-Nitroaniline	0.330	0.300	0.293	0.315	0.315			
4,6-Dinitro-2-methylphenol	0.082	0.119	0.137	0.162	0.165			
N-Nitrosodiphenylamine *	0.549	0.577	0.555	0.514	0.507		*	
4-Bromophenyl-phenylether	0.231	0.236	0.232	0.218	0.216			
Hexachlorobenzene	0.258	0.263	0.256	0.244	0.242			
Pentachlorophenol *		0.133	0.142	0.159	0.161		*	
Di-n-butylphthalate	1.282	1.419	1.376	1.212	1.173			
Butylbenzylphthalate	0.428	0.502	0.520	0.530	0.527			
3,3'-Dichlorobenzidine	0.303	0.352	0.394	0.415	0.418			
Bis(2-ethylhexyl)phthalate	0.611	0.690	0.706	0.685	0.678			
Di-n-octylphthalate *	0.958	1.181	1.247	1.232	1.231		*	
2-Picoline	1.815	1.780	1.755	1.673	1.689			
N-Nitrosomethylethylamine	0.789	0.763	0.759	0.769	0.764			
N-Nitrosodiethylamine	0.731	0.750	0.749	0.745	0.746			
Methylmethanesulfonate	0.753	0.779	0.770	0.775	0.770			
Ethyl methanesulfonate	1.166	1.153	1.127	1.135	1.148			
Pentachloroethane	0.550	0.559	0.544	0.539	0.542			
N-Nitrosopyrrolidine	0.711	0.780	0.791	0.808	0.813			
Acetophenone	0.575	0.564	0.555	0.532	0.515			
N-Nitrosomorpholine	0.733	0.736	0.726	0.716	0.721			
o-Toluidine	2.341	2.384	2.321	2.274	2.222			
a,a-Dimethylphenethylamine	0.829	0.929	0.940	0.976	0.970			
2,6-Dichlorophenol	0.273	0.300	0.302	0.297	0.295			
Hexachloropropene	0.218	0.222	0.223	0.225	0.223			
N-Nitrosodibutylamine	0.265	0.268	0.279	0.276	0.273			
Isosafrole	0.281	0.274	0.272	0.268	0.266			
1,2,4,5-Tetrachlorobenzene	0.615	0.599	0.598	0.563	0.553			
Safrole	0.239	0.240	0.244	0.248	0.244			
1,4-Naphthoquinone	0.438	0.497	0.511	0.502	0.478			

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF4 =8270CAL1.D RRF10 =8270CAL2.D
RRF20 =8270CAL3.D RRF45 =8270CAL4.D RRF60 =8270CAL5.D

COMPOUND	RRF4	RRF10	RRF20	RRF45	RRF60	$\overline{RRF}$	%RSD OR R^2	RSD
1,3-Dinitrobenzene	0.140	0.180	0.204	0.221	0.220			
Pentachlorobenzene	0.556	0.540	0.529	0.505	0.490			
1-Naphthylamine	1.180	1.235	1.230	1.194	1.141			
2-Naphthylamine	1.375	1.414	1.415	1.356	1.289			
2,3,4,6-Tetrachlorophenol	0.239	0.285	0.302	0.315	0.310			
5-Nitro-o-toluidine	0.316	0.376	0.409	0.401	0.391			
p-Phenylenediamine	0.305	0.368	0.387	0.407	0.402			
Phenacetin	0.311	0.377	0.390	0.408	0.410			
4-Aminobiphenyl	0.776	0.817	0.839	0.822	0.812			
Pronamide	0.321	0.351	0.363	0.364	0.361			
Pentachloronitrobenzene(PCNB)	0.081	0.093	0.094	0.092	0.092			
Dinoseb	0.070	0.123	0.157	0.193	0.197			
4-Nitroquinoline-1-oxide	0.057	0.066	0.059	0.047	0.042			
Methapyriline	0.192	0.245	0.274	0.290	0.293			
Aramite	0.094	0.118	0.136	0.147	0.147			
p-Dimethylaminoazobenzene	0.189	0.224	0.232	0.241	0.239			
2-Acetylaminofluorene	0.265	0.374	0.434	0.459	0.462			
7,12-Dimethylbenz(a)anthracene	0.481	0.522	0.525	0.525	0.518			
3-Methylcholanthrene	0.325	0.368	0.387	0.409	0.413			
N-Nitrosopiperidine	0.182	0.195	0.198	0.200	0.197			
1,3,5-Trinitrobenzene	0.375	0.492	0.573	0.605	0.608			
Diallate (Avadex)	0.624	0.630	0.638	0.611	0.600			
Isodrin	0.143	0.138	0.139	0.136	0.133			
Chlorobenzilate	0.224	0.275	0.291	0.303	0.299			
Kepone		0.010	0.020	0.025	0.018			
0,0,0-Triethylphosphorothioate	0.715	0.726	0.717	0.706	0.702			
==========								
2-Fluorophenol(SURR)	1.316	1.383	1.338	1.302	1.290			
Phenol-d5(SURR)	1.644	1.734	1.677	1.615	1.606			
Nitrobenzene-d5(SURR)	0.408	0.425	0.427	0.409	0.417			
2-Fluorobiphenyl(SURR)	1.452	1.476	1.408	1.301	1.281			
2,4,6-Tribromophenol(SURR)	0.160	0.167	0.169	0.159	0.156			
p-Terphenyl-d14(SURR)	0.804	0.827	0.811	0.764	0.752			

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF75 =8270CAL6.D RRF100 =8270CAL7.D

COMPOUND		RRF75	RRF100				$\overline{RRF}$	%RSD OR R^2		RSD
Pyridine		1.730	1.754				1.73899	2.1		
N-Nitrosodimethylamine		0.542	0.556				0.54014	2		
Aniline		2.027	1.975				2.05114	3.8		
Bis(2-chloroethyl)ether		1.402	1.380				1.42684	2.9		
Phenol	*	1.701	1.653				1.74335	3.8	*	
2-Chlorophenol		1.393	1.356				1.37902	2.4		
1,3-Dichlorobenzene		1.457	1.409				1.50331	4.3		
1,4-Dichlorobenzene	*	1.469	1.425				1.51514	4.4	*	
1,2-Dichlorobenzene		1.402	1.362				1.4463	4.1		
Benzyl alcohol		0.944	0.931				0.91656	4.2		
2,2'-Oxybis(1-chloropropane)		1.733	1.696				1.75907	3		
2-Methylphenol		1.091	1.073				1.08903	1.9		
Hexachloroethane		0.595	0.582				0.59747	1.6		
N-Nitroso-di-n-propylamine	#	1.058	1.057				1.0462	2.2	#	
4-Methylphenol		1.572	1.524				1.58083	2.9		
Nitrobenzene		0.403	0.400				0.41415	3.2		
Isophorone		0.721	0.707				0.73666	3		
2-Nitrophenol	*	0.206	0.204				0.20028	6.3	*	
2,4-Dimethylphenol		0.303	0.299				0.311	3.3		
Bis(2-chloroethoxy)methane		0.466	0.453				0.48094	4.4		
2,4-Dichlorophenol	*	0.305	0.302				0.30911	3.3	*	
1,2,4-Trichlorobenzene		0.321	0.313				0.33617	5.3		
4-Chloroaniline		0.444	0.433				0.45358	3.4		
Hexachlorobutadiene	*	0.187	0.184				0.19389	3.8	*	
4-Chloro-3-methylphenol	*	0.316	0.311				0.31572	3.1	*	
Hexachlorocyclopentadiene	#	0.406	0.390				0.40382	3.5	#	
2,4,6-Trichlorophenol	*	0.380	0.370				0.37791	1.9	*	
2,4,5-Trichlorophenol		0.416	0.404				0.41814	3.1		
2-Chloronaphthalene		1.090	1.046				1.14916	6.3		
2-Nitroaniline		0.352	0.345				0.33862	6.2		
Dimethylphthalate		1.229	1.180				1.31463	7.9		
2,6-Dinitrotoluene		0.314	0.301				0.30771	4.2		
3-Nitroaniline		0.342	0.338				0.34002	4.4		
2,4-Dinitrophenol	#	0.202	0.203				0.17113	0.99883	#	22.18966

131112 1348

FORM VI

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF75 =8270CAL6.D RRF100 =8270CAL7.D

COMPOUND		RRF75	RRF100				$\overline{RRF}$	%RSD OR R^2		RSD
Dibenzofuran		1.462	1.384				1.57532	8.8		
2,4-Dinitrotoluene		0.406	0.389				0.39764	4.5		
4-Nitrophenol	#	0.172	0.169				0.15675	9.9	#	
4-Chlorophenyl-phenylether		0.569	0.533				0.61315	10.2		
Diethylphthalate		1.147	1.089				1.19134	7.1		
4-Nitroaniline		0.317	0.319				0.31261	3.9		
4,6-Dinitro-2-methylphenol		0.163	0.165				0.142	0.99956		
N-Nitrosodiphenylamine	*	0.487	0.482				0.52427	6.9	*	
4-Bromophenyl-phenylether		0.210	0.209				0.22177	4.9		
Hexachlorobenzene		0.236	0.232				0.24719	4.8		
Pentachlorophenol	*	0.160	0.158				0.15188	7.6	*	
Di-n-butylphthalate		1.127	1.073				1.23749	10.3		
Butylbenzylphthalate		0.525	0.507				0.50544	7.1		
3,3'-Dichlorobenzidine		0.415	0.397				0.38489	11.1		
Bis(2-ethylhexyl)phthalate		0.655	0.625				0.66424	5.3		
Di-n-octylphthalate	*	1.185					1.17218	9.3	*	
2-Picoline		1.627	1.572				1.70128	5.1		
N-Nitrosomethylethylamine		0.757	0.751				0.76452	1.6		
N-Nitrosodiethylamine		0.725	0.716				0.73735	1.8		
Methylmethanesulfonate		0.755	0.751				0.76466	1.5		
Ethyl methanesulfonate		1.113	1.098				1.13431	2.1		
Pentachloroethane		0.523	0.509				0.53805	3.1		
N-Nitrosopyrrolidine		0.784	0.778				0.78052	4.3		
Acetophenone		0.511	0.492				0.53482	5.7		
N-Nitrosomorpholine		0.700	0.694				0.71796	2.2		
o-Toluidine		2.108	2.020				2.23847	5.9		
a,a-Dimethylphenethylamine		0.960	0.894				0.92829	5.6		
2,6-Dichlorophenol		0.296	0.286				0.2927	3.4		
Hexachloropropene		0.226	0.217				0.22195	1.6		
N-Nitrosodibutylamine		0.268	0.260				0.26997	2.4		
Isosafrole		0.266	0.256				0.26907	2.9		
1,2,4,5-Tetrachlorobenzene		0.540	0.525				0.57032	6		
Safrole		0.243	0.234				0.24148	1.8		
1,4-Naphthoquinone		0.464	0.444				0.4762	6.1		

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF75 =8270CAL6.D RRF100 =8270CAL7.D

COMPOUND	RRF75	RRF100				$\overline{RRF}$	%RSD OR R^2	RSD
1,3-Dinitrobenzene	0.218	0.210				0.19896	14.9	
Pentachlorobenzene	0.478	0.461				0.50832	6.8	
1-Naphthylamine	1.091	1.033				1.15766	6.4	
2-Naphthylamine	1.214	1.122				1.31205	8.4	
2,3,4,6-Tetrachlorophenol	0.303	0.299				0.29328	8.8	
5-Nitro-o-toluidine	0.386	0.369				0.37801	8.1	
p-Phenylenediamine	0.404	0.403				0.38242	9.6	
Phenacetin	0.412	0.407				0.38769	9.3	
4-Aminobiphenyl	0.775	0.721				0.79445	5.1	
Pronamide	0.351	0.346				0.35094	4.3	
Pentachloronitrobenzene(PCNB)	0.091	0.091				0.0905	4.6	
Dinoseb	0.202	0.202				0.16332	0.99952	
4-Nitroquinoline-1-oxide	0.037	0.035				0.04917	0.99695	
Methapyriline	0.292	0.291				0.2682	14.1	
Aramite	0.150	0.145				0.13374	0.99908	
p-Dimethylaminoazobenzene	0.237	0.228				0.22702	7.9	
2-Acetylaminofluorene	0.462	0.457				0.4161	0.99967	
7,12-Dimethylbenz(a)anthracene	0.507	0.487				0.50918	3.6	
3-Methylcholanthrene	0.407	0.401				0.38717	8.1	
N-Nitrosopiperidine	0.199	0.192				0.19481	3.1	
1,3,5-Trinitrobenzene	0.598	0.595				0.54921	0.99952	
Diallate (Avadex)	0.590	0.579				0.61038	3.6	
Isodrin	0.131	0.129				0.13559	3.6	
Chlorobenzilate	0.296	0.284				0.28163	9.6	
Kepone	0.012					0.01714	35.9	<-
0,0,0-Triethylphosphorothioate	0.680	0.654				0.70003	3.6	
==========								
2-Fluorophenol(SURR)	1.276	1.235				1.30566	3.6	
Phenol-d5(SURR)	1.588	1.537				1.62889	3.9	
Nitrobenzene-d5(SURR)	0.409	0.409				0.41481	2	
2-Fluorobiphenyl(SURR)	1.255	1.195				1.33835	8	
2,4,6-Tribromophenol(SURR)	0.153	0.148				0.15884	4.7	
p-Terphenyl-d14(SURR)	0.741	0.707				0.77254	5.6	

Average Used: 5.1

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FORM VI

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 1601

CCV ID: SSC1124039 Lab File ID: 8270SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type		RRF
Pyridine		1.73899	1.676	3.6	AVRG		
N-Nitrosodimethylamine		0.54014	0.57935	7.3	AVRG		
Aniline		2.05114	1.906	7.1	AVRG		
Bis(2-chloroethyl)ether		1.42684	1.614	13.1	AVRG		
Phenol	*	1.74335	1.872	7.4	AVRG	*	
2-Chlorophenol		1.37902	1.459	5.8	AVRG		
1,3-Dichlorobenzene		1.50331	1.566	4.2	AVRG		
1,4-Dichlorobenzene	*	1.51514	1.573	3.8	AVRG	*	
1,2-Dichlorobenzene		1.4463	1.507	4.2	AVRG		
Benzyl alcohol		0.91656	0.98246	7.2	AVRG		
2,2'-Oxybis(1-chloropropane)		1.75907	1.873	6.5	AVRG		
2-Methylphenol		1.08903	1.161	6.6	AVRG		
Hexachloroethane		0.59747	0.62022	3.8	AVRG		
N-Nitroso-di-n-propylamine	#	1.0462	1.147	9.6	AVRG	#	
4-Methylphenol		1.58083	1.708	8.0	AVRG		
Nitrobenzene		0.41415	0.43469	5.0	AVRG		
Isophorone		0.73666	0.73304	0.5	AVRG		
2-Nitrophenol	*	0.20028	0.2143	7.0	AVRG	*	
2,4-Dimethylphenol		0.311	0.35694	14.8	AVRG		
Bis(2-chloroethoxy)methane		0.48094	0.52465	9.1	AVRG		
2,4-Dichlorophenol	*	0.30911	0.32275	4.4	AVRG	*	
1,2,4-Trichlorobenzene		0.33617	0.35006	4.1	AVRG		
4-Chloroaniline		0.45358	0.48661	7.3	AVRG		
Hexachlorobutadiene	*	0.19389	0.21891	12.9	AVRG	*	
4-Chloro-3-methylphenol	*	0.31572	0.33888	7.3	AVRG	*	
Hexachlorocyclopentadiene	#	0.40382	0.43047	6.6	AVRG	#	
2,4,6-Trichlorophenol	*	0.37791	0.40522	7.2	AVRG	*	
2,4,5-Trichlorophenol		0.41814	0.44557	6.6	AVRG		
2-Chloronaphthalene		1.14916	1.211	5.4	AVRG		
2-Nitroaniline		0.33862	0.40051	18.3	AVRG		
Dimethylphthalate		1.31463	1.399	6.4	AVRG		
2,6-Dinitrotoluene		0.30771	0.33637	9.3	AVRG		
3-Nitroaniline		0.34002	0.39618	16.5	AVRG		
2,4-Dinitrophenol	#	45	50.7	12.7	LINR	#	0.21341
Dibenzofuran		1.57532	1.697	7.7	AVRG		
2,4-Dinitrotoluene		0.39764	0.43892	10.4	AVRG		

131112 1349

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 1601

CCV ID: SSC1124039 Lab File ID: 8270SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
4-Nitrophenol	#	0.15675	0.16897	7.8	AVRG	#
4-Chlorophenyl-phenylether		0.61315	0.62061	1.2	AVRG	
Diethylphthalate		1.19134	1.271	6.7	AVRG	
4-Nitroaniline		0.31261	0.37044	18.5	AVRG	
4,6-Dinitro-2-methylphenol		45	46.4	3.1	LINR	
N-Nitrosodiphenylamine	*	0.52427	0.59071	12.7	AVRG	*
4-Bromophenyl-phenylether		0.22177	0.2389	7.7	AVRG	
Hexachlorobenzene		0.24719	0.2615	5.8	AVRG	
Pentachlorophenol	*	0.15188	0.17186	13.2	AVRG	*
Di-n-butylphthalate		1.23749	1.328	7.3	AVRG	
Butylbenzylphthalate		0.50544	0.6042	19.5	AVRG	
Bis(2-ethylhexyl)phthalate		0.66424	0.76939	15.8	AVRG	
Di-n-octylphthalate	*	1.17218	1.401	19.5	AVRG	*
==========						
2-Fluorophenol(SURR)		1.30566	1.407	7.8	AVRG	
Phenol-d5(SURR)		1.62889	1.674	2.8	AVRG	
Nitrobenzene-d5(SURR)		0.41481	0.41763	0.7	AVRG	
2-Fluorobiphenyl(SURR)		1.33835	1.338	0.0	AVRG	
2,4,6-Tribromophenol(SURR)		0.15884	0.16589	4.4	AVRG	
p-Terphenyl-d14(SURR)		0.77254	0.79231	2.6	AVRG	

131112 1349

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 1912

CCV ID: SSC1124059 Lab File ID: BSSEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3,3'-Dichlorobenzidine	0.38489	0.44045	14.4	AVRG	
Acetophenone	0.53482	0.55757	4.3	AVRG	

131112 1349

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 2220

CCV ID: SSC1124049 Lab File ID: AP9SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
2-Picoline	1.70128	1.714	0.7	AVRG	
N-Nitrosomethylethylamine	0.76452	0.74144	3.0	AVRG	
N-Nitrosodiethylamine	0.73735	0.75486	2.4	AVRG	
Methylmethanesulfonate	0.76466	0.81615	6.7	AVRG	
Ethyl methanesulfonate	1.13431	1.343	18.4	AVRG	
Pentachloroethane	0.53805	0.5494	2.1	AVRG	
N-Nitrosopyrrolidine	0.78052	0.82464	5.7	AVRG	
Acetophenone	0.53482	0.54325	1.6	AVRG	
N-Nitrosomorpholine	0.71796	0.73767	2.7	AVRG	
o-Toluidine	2.23847	2.313	3.3	AVRG	
a,a-Dimethylphenethylamine	0.92829	0.93354	0.6	AVRG	
2,6-Dichlorophenol	0.2927	0.30911	5.6	AVRG	
Hexachloropropene	0.22195	0.22592	1.8	AVRG	
N-Nitrosodibutylamine	0.26997	0.27466	1.7	AVRG	
Isosafrole	0.26907	0.28728	6.8	AVRG	
1,2,4,5-Tetrachlorobenzene	0.57032	0.58501	2.6	AVRG	
Safrole	0.24148	0.27332	13.2	AVRG	
1,4-Naphthoquinone	0.4762	0.53786	12.9	AVRG	
1,3-Dinitrobenzene	0.19896	0.24157	21.4	AVRG	
Pentachlorobenzene	0.50832	0.52263	2.8	AVRG	
1-Naphthylamine	1.15766	1.094	5.5	AVRG	
2-Naphthylamine	1.31205	1.331	1.4	AVRG	
2,3,4,6-Tetrachlorophenol	0.29328	0.30904	5.4	AVRG	
5-Nitro-o-toluidine	0.37801	0.40151	6.2	AVRG	
p-Phenylenediamine	0.38242	0.38697	1.2	AVRG	
Phenacetin	0.38769	0.3909	0.8	AVRG	
4-Aminobiphenyl	0.79445	0.80875	1.8	AVRG	
Pronamide	0.35094	0.37293	6.3	AVRG	
Pentachloronitrobenzene(PCNB)	0.0905	0.09844	8.8	AVRG	
Dinoseb	45	46.2	2.7	LINR	
4-Nitroquinoline-1-oxide	45	55.8	24.0	2ORD	
Methapyriline	0.2682	0.18816	29.8	AVRG	
Aramite	45	33.8	24.9	LINR	
p-Dimethylaminoazobenzene	0.22702	0.24323	7.1	AVRG	
2-Acetylaminofluorene	45	45.2	0.4	LINR	
7,12-Dimethylbenz(a)anthracene	0.50918	0.54423	6.9	AVRG	

131112 1349

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 2220

CCV ID: SSC1124049 Lab File ID: AP9SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3-Methylcholanthrene	0.38717	0.40343	4.2	AVRG	
N-Nitrosopiperidine	0.19481	0.20264	4.0	AVRG	
1,3,5-Trinitrobenzene	45	25.4	43.6	LINR	
Diallate (Avadex)	0.61038	0.63108	3.4	AVRG	
Isodrin	0.13559	0.14805	9.2	AVRG	
Chlorobenzilate	0.28163	0.30478	8.2	AVRG	
Kepone	0.01714	0.03053	78.1	AVRG	
0,0,0-Triethylphosphorothioate	0.70003	0.7	0.0	AVRG	

Average Used: 9.1

131112 1349

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1615

CCV ID: CCV1129929 Lab File ID: 8270CCV4.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type		RRF
Pyridine		1.73899	1.78	2.4	AVRG		
N-Nitrosodimethylamine		0.54014	0.49662	8.1	AVRG		
Aniline		2.05114	1.828	10.9	AVRG		
Bis(2-chloroethyl)ether		1.42684	1.477	3.5	AVRG		
Phenol	*	1.74335	1.781	2.2	AVRG	*	
2-Chlorophenol		1.37902	1.369	0.7	AVRG		
1,3-Dichlorobenzene		1.50331	1.47	2.2	AVRG		
1,4-Dichlorobenzene	*	1.51514	1.45	4.3	AVRG	*	
1,2-Dichlorobenzene		1.4463	1.536	6.2	AVRG		
Benzyl alcohol		0.91656	1.051	14.7	AVRG		
2,2'-Oxybis(1-chloropropane)		1.75907	1.551	11.8	AVRG		
2-Methylphenol		1.08903	1.114	2.3	AVRG		
Hexachloroethane		0.59747	0.60929	2.0	AVRG		
N-Nitroso-di-n-propylamine	#	1.0462	0.93879	10.3	AVRG	#	
4-Methylphenol		1.58083	1.504	4.9	AVRG		
Nitrobenzene		0.41415	0.3917	5.4	AVRG		
Isophorone		0.73666	0.69524	5.6	AVRG		
2-Nitrophenol	*	0.20028	0.21076	5.2	AVRG	*	
2,4-Dimethylphenol		0.311	0.29939	3.7	AVRG		
Bis(2-chloroethoxy)methane		0.48094	0.45937	4.5	AVRG		
2,4-Dichlorophenol	*	0.30911	0.32372	4.7	AVRG	*	
1,2,4-Trichlorobenzene		0.33617	0.33811	0.6	AVRG		
4-Chloroaniline		0.45358	0.45442	0.2	AVRG		
Hexachlorobutadiene	*	0.19389	0.20541	5.9	AVRG	*	
4-Chloro-3-methylphenol	*	0.31572	0.31277	0.9	AVRG	*	
Hexachlorocyclopentadiene	#	0.40382	0.42545	5.4	AVRG	#	
2,4,6-Trichlorophenol	*	0.37791	0.39221	3.8	AVRG	*	
2,4,5-Trichlorophenol		0.41814	0.43283	3.5	AVRG		
2-Chloronaphthalene		1.14916	1.131	1.6	AVRG		
2-Nitroaniline		0.33862	0.32196	4.9	AVRG		
Dimethylphthalate		1.31463	1.276	2.9	AVRG		
2,6-Dinitrotoluene		0.30771	0.3151	2.4	AVRG		
3-Nitroaniline		0.34002	0.34041	0.1	AVRG		
2,4-Dinitrophenol	#	45	43.1	4.2	LINR	#	0.17687
Dibenzofuran		1.57532	1.537	2.4	AVRG		
2,4-Dinitrotoluene		0.39764	0.40453	1.7	AVRG		

131112 1349

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1615

CCV ID: CCV1129929 Lab File ID: 8270CCV4.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
4-Nitrophenol	#	0.15675	0.16187	3.3	AVRG	#
4-Chlorophenyl-phenylether		0.61315	0.60982	0.5	AVRG	
Diethylphthalate		1.19134	1.169	1.9	AVRG	
4-Nitroaniline		0.31261	0.31521	0.8	AVRG	
4,6-Dinitro-2-methylphenol		45	44.6	0.9	LINR	
N-Nitrosodiphenylamine	*	0.52427	0.50293	4.1	AVRG	*
4-Bromophenyl-phenylether		0.22177	0.2332	5.2	AVRG	
Hexachlorobenzene		0.24719	0.25515	3.2	AVRG	
Pentachlorophenol	*	0.15188	0.17547	15.5	AVRG	*
Di-n-butylphthalate		1.23749	1.159	6.3	AVRG	
Butylbenzylphthalate		0.50544	0.52534	3.9	AVRG	
Bis(2-ethylhexyl)phthalate		0.66424	0.66746	0.5	AVRG	
Di-n-octylphthalate	*	1.17218	1.177	0.4	AVRG	*
==========						
2-Fluorophenol(SURR)		1.30566	1.383	5.9	AVRG	
Phenol-d5(SURR)		1.62889	1.703	4.5	AVRG	
Nitrobenzene-d5(SURR)		0.41481	0.40479	2.4	AVRG	
2-Fluorobiphenyl(SURR)		1.33835	1.326	0.9	AVRG	
2,4,6-Tribromophenol(SURR)		0.15884	0.1724	8.5	AVRG	
p-Terphenyl-d14(SURR)		0.77254	0.78206	1.2	AVRG	

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1639

CCV ID: CCV1129935 Lab File ID: BSCCV1.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3,3'-Dichlorobenzidine	0.38489	0.42737	11.0	AVRG	
Acetophenone	0.53482	0.52751	1.4	AVRG	

131112 1349

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1703

CCV ID: CCV1129934 Lab File ID: AP9CCV1.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
2-Picoline	1.70128	1.731	1.7	AVRG	
N-Nitrosomethylethylamine	0.76452	0.7597	0.6	AVRG	
N-Nitrosodiethylamine	0.73735	0.74781	1.4	AVRG	
Methylmethanesulfonate	0.76466	0.72895	4.7	AVRG	
Ethyl methanesulfonate	1.13431	1.161	2.4	AVRG	
Pentachloroethane	0.53805	0.57165	6.2	AVRG	
N-Nitrosopyrrolidine	0.78052	0.73219	6.2	AVRG	
Acetophenone	0.53482	0.55464	3.7	AVRG	
N-Nitrosomorpholine	0.71796	0.596	17.0	AVRG	
o-Toluidine	2.23847	1.985	11.3	AVRG	
a,a-Dimethylphenethylamine	0.92829	0.88844	4.3	AVRG	
2,6-Dichlorophenol	0.2927	0.30501	4.2	AVRG	
Hexachloropropene	0.22195	0.23837	7.4	AVRG	
N-Nitrosodibutylamine	0.26997	0.26829	0.6	AVRG	
Isosafrole	0.26907	0.28355	5.4	AVRG	
1,2,4,5-Tetrachlorobenzene	0.57032	0.55932	1.9	AVRG	
Safrole	0.24148	0.2924	21.1	AVRG	
1,4-Naphthoquinone	0.4762	0.52565	10.4	AVRG	
1,3-Dinitrobenzene	0.19896	0.22446	12.8	AVRG	
Pentachlorobenzene	0.50832	0.49631	2.4	AVRG	
1-Naphthylamine	1.15766	1.154	0.3	AVRG	
2-Naphthylamine	1.31205	1.196	8.8	AVRG	
2,3,4,6-Tetrachlorophenol	0.29328	0.32119	9.5	AVRG	
5-Nitro-o-toluidine	0.37801	0.36692	2.9	AVRG	
p-Phenylenediamine	0.38242	0.40408	5.7	AVRG	
Phenacetin	0.38769	0.41165	6.2	AVRG	
4-Aminobiphenyl	0.79445	0.83182	4.7	AVRG	
Pronamide	0.35094	0.36393	3.7	AVRG	
Pentachloronitrobenzene(PCNB)	0.0905	0.0957	5.7	AVRG	
Dinoseb	45	44.5	1.1	LINR	
4-Nitroquinoline-1-oxide	45	42.6	5.3	2ORD	
Methapyriline	0.2682	0.25942	3.3	AVRG	
Aramite	45	45.4	0.9	LINR	
p-Dimethylaminoazobenzene	0.22702	0.24283	7.0	AVRG	
2-Acetylaminofluorene	45	46.1	2.4	LINR	
7,12-Dimethylbenz(a)anthracene	0.50918	0.48936	3.9	AVRG	

131112 1349

FORM VII

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1703

CCV ID: CCV1129934 Lab File ID: AP9CCV1.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3-Methylcholanthrene	0.38717	0.40625	4.9	AVRG	
N-Nitrosopiperidine	0.19481	0.20234	3.9	AVRG	
1,3,5-Trinitrobenzene	45	40.8	9.3	LINR	
Diallate (Avadex)	0.61038	0.53846	11.8	AVRG	
Isodrin	0.13559	0.13584	0.2	AVRG	
Chlorobenzilate	0.28163	0.3021	7.3	AVRG	
Kepone	0.01714	0.03022	76.3	AVRG	
0,0,0-Triethylphosphorothioate	0.70003	0.6235	10.9	AVRG	

Average Used: 7.3

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FORM VII

FL-PRO Organics

131112 1349

CASE NARRATIVE
FL-PRO Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method FL-PRO

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510 for FL PRO semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

A client requested MS/SD set was analyzed.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

All percent recovery and relative percent difference (RPD) criteria were met.

E. Internal Standards:

This method does not require the use of internal standards.

F. Samples:

Sample analysis proceeded normally.
Sample Q2-TFS-MW-15 required a 10X dilution due to high concentration of the following analyte: TPH.

Sample Q2-TFS-MW-15-DUP required a 10X dilution due to high concentration of the following analyte: TPH.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: DATE: 11/06/2012

FL-PRO ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Method: FL-PRO

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17-RS	350740701
Q2-TFS-MW-17	350740702
Q2-TFS-MW-15	350740705
Q2-TFS-MW-15-DUP	350740706
Q2-TFS-MW-11	350740707

131112 1349

FL-PRO Sample Data

131112 1349

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17-RS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740701 Lab File ID 407-1.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1411

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	505	U	252	505	505

131112 1349

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702 Lab File ID 407-2.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1433

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	1500		252	505	505

131112 1349

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705 Lab File ID 407-5D10.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1308

PercentSolids: 0 decanted : Dilution Factor: 10

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	24300		2520	5050	5050

131112 1349

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15-DUP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740706 Lab File ID 407-6D10.D

Sample wt/vol: 990 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1352

PercentSolids: 0 decanted : Dilution Factor: 10

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	24100		2520	5050	5050

131112 1349

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-11

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740707 Lab File ID 407-7.D

Sample wt/vol: 995 Units: ML Date Received: 10/25/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1624

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	370	J	251	502	502

131112 1349

Form I

FL-PRO QC Summary

131112 1349

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151252MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 151252MB Lab File ID: 11364MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/30/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1242

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	500	U	250	500	500

131112 1349

Form I

FL-PRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151252MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Lab File ID: 11364MB.D Lab Sample ID: 151252MB

Instrument ID: SFID01 Date Extracted: 10/30/12

Matrix: WATER Date Analyzed: 11/01/12

Level:(low/med) LOW Time Analyzed: 1242

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151253LCS	151253LCS	11364LCS.D	11/01/12	1304
2	Q2-TFS-MW-17-RS	350740701	407-1.D	11/01/12	1411
3	Q2-TFS-MW-17	350740702	407-2.D	11/01/12	1433
4	Q2-TFS-MW-17-MS	350740703	407-3.D	11/01/12	1455
5	Q2-TFS-MW-17-MSD	350740704	407-4.D	11/01/12	1517
6	Q2-TFS-MW-11	350740707	407-7.D	11/01/12	1624
7	Q2-TFS-MW-15	350740705	407-5D10.D	11/02/12	1308
8	Q2-TFS-MW-15-DUP	350740706	407-6D10.D	11/02/12	1352

COMMENTS:

Page 1 of 1

131112 1349

Form IV

2A

WATER FL-PRO ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507407

Column(1): RTX-5 ID: 0.53 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
151252MB	87.0	57.3					0
151253LCS	89.0	62.0					0
Q2-TFS-MW-11	94.0	57.6					0
Q2-TFS-MW-15	99.0	72.4					0
Q2-TFS-MW-15-DUP	98.0	65.1					0
Q2-TFS-MW-17	88.1	65.8					0
Q2-TFS-MW-17-MS	87.1	72.4					0
Q2-TFS-MW-17-MSD	90.1	72.4					0
Q2-TFS-MW-17-RS	99.0	65.8					0

Control Limits

S1 = o-Terphenyl Surrogate 82 - 142

S2 = Nonatriacontane (C-39) 42 - 193

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

131112 1349

FL-PRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 11/01/12

Instrument ID: SFID01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.86 S2 : 9.21 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	STD1130223	47312	PROCAL7.D	11/01/12	0922	3.84	9.11		
2	STD1130222	47313	PROCAL6.D	11/01/12	0944	3.86	9.14		
3	STD1130221	47314	PROCAL5.D	11/01/12	1007	3.85	9.13		
4	STD1130220	48158	PROCAL4.D	11/01/12	1029	3.86	9.21		
5	STD1130219	47316	PROCAL3.D	11/01/12	1051	3.86	9.22		
6	STD1130218	47317	PROCAL2.D	11/01/12	1113	3.86	9.21		
7	STD1130217	47318	PROCAL1.D	11/01/12	1135	3.87	9.24		
8	SSC1130230	47319	PROSEC.D	11/01/12	1157	3.88	9.27		
9	CCV1130225	48158	PROCCV1B.D	11/01/12	1220	3.87	9.28		
10	151252MB	151252MB	11364MB.D	11/01/12	1242	3.87	9.23		
11	151253LCS	151253LCS	11364LCS.D	11/01/12	1304	3.86	9.22		
12	Q2-TFS-MW-17-RS	350740701	407-1.D	11/01/12	1411	3.86	9.19		
13	Q2-TFS-MW-17	350740702	407-2.D	11/01/12	1433	3.87	9.2		
14	Q2-TFS-MW-17-MS	350740703	407-3.D	11/01/12	1455	3.86	9.21		
15	Q2-TFS-MW-17-MSD	350740704	407-4.D	11/01/12	1517	3.85	9.17		
16	Q2-TFS-MW-11	350740707	407-7.D	11/01/12	1624	3.85	9.16		
17	CCV1130226	48158	PROCCV2.D	11/01/12	1708	3.85	9.14		
18	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	2005				
19	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	2347				
20	CCV1130224	48158	PROCCV1.D	11/02/12	1139	3.9	9.35		
21	Q2-TFS-MW-15	350740705	407-5D10.D	11/02/12	1308	3.87	9.25		
22	Q2-TFS-MW-15-DUP	350740706	407-6D10.D	11/02/12	1352	3.86	9.21		
23	CCV1130227	48158	PROCCV2.D	11/02/12	1628	3.86	9.21		

			QC LIMITS
S1	=	o-Terphenyl Surrogate	(+/- 0.2 MINUTES)
S2	=	Nonatriacontane (C-39)	(+/- 0.46 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

Page 1 of 1

131112 1349

FORM VIII

3

FL-PRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151253LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH	3400	2200	64.7			55 - 118

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1349

Form III

3

FL-PRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.P

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	SAMPLE CONCENTRATION ug/L	MS CONCENTRATION ug/L	MS % REC #	QC LIMITS REC.
TPH	3400	1500	3800	67.1	41 - 101

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1349

3

FL-PRO ORGANIC MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

EPA Sample No.

Q2-TFS-MW-17-MSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

COMPOUND	SPIKE ADDED ug/L	MSD CONCENTRATION ug/L	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
TPH	3400	3900	70.0	2.6	20	41 - 101

RPD: 0 out of 1 outside limits

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

Form III

131112 1349

FL-PRO Standards Data

131112 1349

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

LAB FILE ID: RRF0.17 =PROCAL1.D RRF0.34 =PROCAL2.D
RRF0.85 =PROCAL3.D RRF1.7 =PROCAL4.D RRF2.55 =PROCAL5.D

COMPOUND	RRF0.17	RRF0.34	RRF0.85	RRF1.7	RRF2.55
TPH	9246817.647	6938179.412	7207214.118	6600123.529	7037540
==========					
Nonatriacontane (C-39)(SURR)	3419720	3452493.333	3744653.333	3811626.667	4543346.667
o-Terphenyl Surrogate(SURR)	7499260	7231760	7554360	8615300	6966400

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

LAB FILE ID: RRF3.4 =PROCAL6.D RRF5.1 =PROCAL7.D

COMPOUND	RRF3.4	RRF5.1			
TPH	6678698.235	6304933.725			
==========					
Nonatriacontane (C-39)(SURR)	4442680	3955213.333			
o-Terphenyl Surrogate(SURR)	7031380	4717120			

131112 1349

FORM VI

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

COMPOUND	CURVE	COEFFICIENTS AO	COEFFICIENTS A1	%RSD OR R^2
TPH	AVRG		7144786.667	13.6
==========				
Nonatriacontane (C-39)(SURR)	AVRG		3909961.905	11.3
o-Terphenyl Surrogate(SURR)	AVRG		7087940	16.7

131112 1349

FORM VI

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT1: PROCAL1.D RT2: PROCAL2.D
RT3: PROCAL3.D RT4: PROCAL4.D RT5: PROCAL5.D

COMPOUND	RT1	RT2	RT3	RT4	RT5	MIDCAL RT	RT WINDOW FROM	TO
TPH	5.260	5.417	5.417	5.260	5.260			
==========								
Nonatriacontane (C-39)(SURR)	9.240	9.207	9.220	9.207	9.133			
o-Terphenyl Surrogate(SURR)	3.873	3.860	3.863	3.860	3.847			

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT6: PROCAL6.D RT7: PROCAL7.D

COMPOUND	RT6	RT7				MIDCAL RT	RT WINDOW FROM	TO
TPH	5.260	5.417				5.260	0.523	9.997
==========								
Nonatriacontane (C-39)(SURR)	9.140	9.110				9.207	8.747	9.667
o-Terphenyl Surrogate(SURR)	3.860	3.843				3.860	3.660	4.060

7SSC

FL-PRO ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 1157

CCV ID: SSC1130230 Lab File ID: PROSEC.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6360302.941	11.0	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3849826.667	1.5	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7584620	7.0	AVRG	

131112 1349

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 1220

CCV ID: CCV1130225 Lab File ID: PROCCV1B.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6071966.471	15.0	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3415413.333	12.6	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7531340	6.3	AVRG	

131112 1349

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 1708

CCV ID: CCV1130226 Lab File ID: PROCCV2.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6413641.765	10.2	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3748946.667	4.1	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7970400	12.5	AVRG	

131112 1349

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SFID01 CalibrationDate: 11/02/12 Time: 1139

CCV ID: CCV1130224 Lab File ID: PROCCV1.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	5863202.941	17.9	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3702373.333	5.3	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7441220	5.0	AVRG	

131112 1349

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID: SFID01 CalibrationDate: 11/02/12 Time: 1628

CCV ID: CCV1130227 Lab File ID: PROCCV2.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6474067.059	9.4	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	4872253.333	24.6	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7752680	9.4	AVRG	

131112 1349

FORM VII

Inorganics

131112 1349

Inorganic Data Qualifiers

C (Concentration) Qualifier - Entries and their meanings are:

J The reported value obtained was less than the RL but greater than or equal to the MDL.

E The reported value obtained was over calibration or linear range.

U The reported value obtained was less than the MDL or was not detected.

Q Qualifier - Entries and their meanings are:

U The reported value is estimated because of interference. An explanatory comment must be included under "Comments" on the Cover Page if the problem applies to all samples in this data package or on the individual FORM 1 if it is an isolated problem.

M Duplicate injection precision was not met (two analyses of the same sample did not agree).

N Spiked sample recovery not within control limits.

E Serial Dilution percent difference not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA).

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.

***** Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

X The data is flagged as rejected by analyst utilizing analytical judgement.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can apear in the same field.

M (Method) Qualifier - Enter one of the following:

P ICP
A Flame AA
F Furnace AA
CV Manual Cold Vapor AA
TC Total Organic Carbon
AS Semi-Automated Spectrophotometric
CA Midi-Distillation Spectrophotometric
T Titrimetric
C Manual Spectrophotometric
GR Gravimetric
NR Analyte was not required by your lab

131112 1349

Inorganic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for inorganic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

A Post Digestion Spike.

L Serial Dilution.

131112 1349

Metals Data Package

131112 1349

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW6010B

IV. PREPARATION

Water samples were prepared according to Spectrum Analytical Inc. Laboratory's Standard Operating Procedures and EPA Method 3010A.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

All acceptance criteria were met.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

All acceptance criteria were met.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/30/2012

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SDG No.: 3507407

SOW No.:

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17	350740702
Q2-TFS-MW-15	350740705

Were ICP interelement corrections applied?	Yes/No	Yes
Were ICP background corrections applied?	Yes/No	Yes
If yes - were raw data generated before application of background corrections?	Yes/No	No

Comments:

131112 1349

Metals Inorganic Sample Data

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	2.65	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	4.88	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

Metals Inorganic QC Summary Data

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

150776MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 150776MB

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	0.7	U		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Initial Calibration Source: 47792

Continuing Calibration Source: 47710

Concentration Units: (ug/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Manganese	400	393.000	98.2	500	508.000	101.6	506.000	101.2	P

ICV IDs: P= ICV1128523

CCV1 IDs: P= CCV1128528

CCV2 IDs: P= CCV1128540

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

131112 1349

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Initial Calibration Source:

Continuing Calibration Source: 47710

Concentration Units: (ug/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Manganese				500	498.000	99.6			P

ICV IDs:

CCV1 IDs: P= CCV1128549

CCV2 IDs:

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

131112 1349

U.S. EPA - CLP

2B

CRDL STANDARD FOR AA AND ICP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

AA CRDL Standard Source:

ICP CRDL Standard Source: 48068

Concentration Units: UG/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Manganese				10	9.98	99.8		

Control Limits: No limits have been established by EPA at this time

131112 1349

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Preparation Blank Matrix (water/soil): WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Manganese	0.35	U	0.35	U	0.35	U	0.35	U	0.7	U	P

ICB IDs: P= ICB1128524

CCB1 IDs: P= CCB1128529

CCB2 IDs: P= CCB1128541

CCB3 IDs: P= CCB1128550

131112 1349

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

ICP ID#: ICAP2 ICSA Source: 47383

ICSAB Source: 47602

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Manganese	0	500	-0.26	465.407	93.1			

ICSA: ICS1128526

ICSAB: ICS1128527

131112 1349

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

350739205A

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Manganese	80 - 120	946.00		450.65		500	99.0		P

Comments:

131112 1349

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

150778LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Manganese	20	518		504		2.7		P

Comments:

131112 1349

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 150777LCS

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Solid LCS Source:

Aqueous LCS Source: 47790, 47357, 46091,

	Aqueous (ug/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Manganese	500	518	103.6				-	

131112 1349

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 150778LCSD

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Solid LCS Source:

Aqueous LCS Source: 47790, 47357, 46091,

	Aqueous (ug/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Manganese	500	504	100.8				-	

131112 1349

U.S. EPA - CLP

9

SERIAL DILUTIONS

EPA Sample No.

350739205L

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ- ence	Q	M
Manganese	450.65		461.00		2.3		P

Comments:

131112 1349

U.S. EPA - CLP

10

METHOD DETECTION LIMITS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

ICP ID Number : ICAP2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Raw MDL (ug/L)	CRDL (ug/L)	MDL (ug/L)	Verification Date	M
Manganese	257.61	0.35	10	0.35	7/13/2012	P

Comments:

131112 1349

U.S. EPA - CLP

11A

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No.: SDG No.: 3507407

ICP ID Number : ICAP2 Date: 12/11/2007

Analyte	Wave-length	Interelement Correction Factors for:													
		Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg
Manganese	257.61														

Comments:

131112 1349

U.S. EPA - CLP

11A

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No.: SDG No.: 3507407

ICP ID Number : ICAP2 Date: 12/11/2007

Analyte	Wave-length	Interelement Correction Factors for:												
		Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	V	Zn
Manganese	257.61					0.514043		0.637384				1.127690		

Comments:

131112 1349

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12

ICP LINEAR RANGES (SEMI-ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

ICP ID NUMBER : ICAP2 DATE : 12/8/2009

Analyte	Integ. Time (sec.)	Concentration UG/L	M
Manganese	1	5000	P

Comments:

131112 1349

U.S. EPA - CLP

13

PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Method : 6010

EPA Sample No:	Preparation Date	Weight (gram)	Volume (mL)
150776MB	25 Oct 12		50
150777LCS	25 Oct 12		50
150778LCSD	25 Oct 12		50
Q2-TFS-MW-15	25 Oct 12		50
Q2-TFS-MW-17	25 Oct 12		50

131112 1349

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14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID Number : ICAP2 Method : P

Start Date : 10/26/2012 End Date : 10/26/2012

EPA Sample No.	D/F	Time	%R	Analytes																											
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CAL01	1	10:55																		X											
CAL02	1	11:01																													
CAL03	1	11:07																		X											
CAL04	1	11:13																		X											
CAL05	1	11:19																		X											
CAL06	1	11:24																		X											
ICV1128523	1	11:32																		X											
ICB1128524	1	11:37																		X											
CRD1128525	1	11:49																		X											
ICS1128526	1	11:56																		X											
ICS1128527	1	12:01																		X											
CCV1128528	1	12:06																		X											
CCB1128529	1	12:11																		X											
150776MB	1	12:50																		X											
150777LCS	1	12:57																		X											
150778LCSD	1	13:02																		X											
ZZZZZZ	1	13:07																													
350739205L	5	13:14																		X											
ZZZZZZ	1	13:20																													
ZZZZZZ	1	13:25																													
350739205A	1	13:30																		X											
ZZZZZZ	1	13:36																													
ZZZZZZ	1	13:41																													
CCV1128540	1	13:47																		X											
CCB1128541	1	13:53																		X											
ZZZZZZ	1	13:59																													
ZZZZZZ	1	14:05																													
ZZZZZZ	1	14:11																													
Q2-TFS-MW-17	1	14:18																		X											
Q2-TFS-MW-15	1	14:24																		X											
ZZZZZZ	1	14:30																													
ZZZZZZ	1	14:36																													
CCV1128549	1	14:41																		X											
CCB1128550	1	14:46																		X											

131112 1349

Wet Chemistry Data Package

131112 1349

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SDG No.: 3507407

SOW No.:

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17	SB58938-01
Q2-TFS-MW-15	SB58938-02

Comments:

131112 1349

Wetchem_sal Inorganic Sample Data

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: SB58938-01

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1.08			N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: SB58938-02

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1349

Wetchem_sal Inorganic QC Summary Data

131112 1350

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6

DUPLICATES

EPA Sample No.

Q2-TFS-MW-15DUP3

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 100

Concentration Units (mg/L or mg/kg): ppt (1000)

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Salinity	200	1	U	0.77	J	26.0		N/A

Comments:

131112 1350

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

Q2-TFS-MW-17DUP2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 100

Concentration Units (mg/L or mg/kg): ppt (1000)

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Salinity	200	1.08		1.04		3.8		N/A

Comments:

131112 1350

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 1227157-SRM1

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: (soil/water) WATER

Concentration Units: (ppt ()

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Salinity		N/A	90	110	10	10.3	103	

Comments:

131112 1350

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 1227157-SRM2

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: (soil/water) WATER

Concentration Units: (ppt ()

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Salinity		N/A	90	110	10	10.3	103	

Comments:

131112 1350

U.S. EPA - CLP

10

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: Water

Concentration Units: ppt (1000)

PARAMETER	M	INSTRUMENT ID	DATE	CRDL	MDL	Raw MDL (UG/L)
Salinity	N/A			1	0.144	0.144

Comments:

131112 1350

Wet Chemistry Data Package

131112 1350

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method E300.1

IV. PREPARATION

There is no preparation step for this method.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met. No action required. The following ICB/CCB(s) had element concentrations below the RL:

ICB1128158 was analyzed on 10/25/12 11:55. The following analyte(s) were detected below RL: Sulfate at 0.38 mg/L.
Samples coded accordingly.

The hit in the blank is below the RL, therefore, no corrective action was taken.

2. Method Blanks:

All acceptance criteria were met.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

C. Spikes:

1. Laboratory Control Spikes (LCS):

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

Not applicable.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

Not applicable.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

Sample Q2-TFS-MW-15 required a 10X dilution due to high concentration of the following analyte(s): Chloride, Sulfate.
Sample Q2-TFS-MW-17 required a 10X dilution due to high concentration of the following analyte(s): Chloride, Sulfate.

The samples were diluted initially due to a strong sulfur smell and to maintain instrument integrity.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

Signature: _____
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/26/2012

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method A2540C

IV. PREPARATION

Water samples were prepared according to PEL Laboratory's Standard Operating Procedures and EPA Method 160.1.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Spectrum Analytical Inc. Lab Reference No./SDG: 3507407

Client: CH2M Hill

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

Not applicable.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

Not applicable.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/30/2012

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SDG No.: 3507407

SOW No.:

EPA Sample No	Lab Sample ID
Q2-TFS-MW-17	350740702
Q2-TFS-MW-15	350740705

Comments:

131112 1350

Wet Chemistry Sample Data

131112 1350

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-17

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740702

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	372			IC	3.4	6.8	10
1-01-0	Residue, Filterable (TDS)	1290			GR	10	20	20
3-03-5	Sulfate	96.6			IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	101.6	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-15

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 350740705

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	157			IC	3.4	6.8	10
1-01-0	Residue, Filterable (TDS)	1020			GR	10	20	20
3-03-5	Sulfate	7.5	J		IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	99.2	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

Wet Chemistry QC Summary Data

131112 1350

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

102512MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 102512MB

Level:(low/med) LOW Date Received: 10/25/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	0.68	U		IC	0.34	0.68	1
3-03-5	Sulfate	0.64	U		IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	106.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

150813MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Lab Sample ID: 150813MB

Level:(low/med) LOW Date Received: 10/26/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	20	U		GR	10	20	20

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1350

U.S. EPA - CLP

2-CC

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Concentration Units: (mg/L)

Analyte	Initial Calibration				Continuing Calibration						
	Source Used	True	Found	%R (1)	Source Used	True	Found	%R (1)	Found	%R (1)	M
Chloride	46963	8	8.300	103.8	46963	8	8.200	102.5	8.100	101.2	IC
Residue, Filterabl											GR
Sulfate	46963	8	8.200	102.5	46963	8	8.200	102.5	8.200	102.5	IC

ICV IDs: IC= ICV1128159

CCV1 IDs: IC= CCV1128156

CCV2 IDs: IC= CCV1128157

(1) Control Limits: TOC: 75-125

Comments:

131112 1350

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Preparation Blank Matrix (water/soil): WATER
WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/L
Percent R

Analyte	Initial Calib. Blank (mg/L)	C	Continuing Calibration Blank (mg/L)	C		C		C	Prepa-ration Blank	C	M
Chloride	0.34	U	0.34	U	0.34	U			0.68	U	IC
Residue, Filterable (TDS)									20	U	GR
Sulfate	0.38	J	0.32	U	0.32	U			0.64	U	IC

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	106.0	90 - 115	

ICB IDs: IC= ICB1128158

CCB1 IDs: IC= CCB1128154

CCB2 IDs: IC= CCB1128155

CCB3 IDs:

131112 1350

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

102512LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): mg/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Chloride	20	8.1		8.2		1.2		IC
Sulfate	20	8.1		8.2		1.2		IC

Comments:

131112 1350

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

150815LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): MG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Residue, Filterable (TDS)	20	266		258		3.1		GR

Comments:

131112 1350

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 102512LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Chloride	46963	IC	75	125	8	8.1	101.2	
Sulfate	46963	IC	75	125	8	8.1	101.2	

Comments:

131112 1350

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 102512LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Chloride	46963	IC	75	125	8	8.2	102.5	
Sulfate	46963	IC	75	125	8	8.2	102.5	

Comments:

131112 1350

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 150814LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: (soil/water) WATER

Concentration Units: (MG/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Residue, Filterable (TDS)	47993	GR	80	120	250	266	106.4	

Comments:

131112 1350

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 150815LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507407

Matrix: (soil/water) WATER

Concentration Units: (MG/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Residue, Filterable (TDS)	47993	GR	80	120	250	258	103.2	

Comments:

131112 1350

U.S. EPA - CLP

10

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Matrix: Water

Concentration Units: mg/L

PARAMETER	M	INSTRUMENT ID	DATE	CRDL	MDL	Raw MDL (UG/L)
Chloride	IC	IC	10/10/2012	1	0.34	0.34
Residue, Filterable (TDS)	GR	HACH	7/22/2004	20	10	10
Sulfate	IC	IC	10/10/2012	1	0.32	0.32

Comments:

131112 1350

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID Number : IC Method : IC

Start Date : 7/31/2012 End Date : 10/25/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
OICAL1	1	11:57		X
OICAL2	1	12:20		X
OICAL3	1	12:42		X
OICAL4	1	13:04		X
OICAL5	1	13:26		X
OICAL6	1	13:48		X
OICAL7	1	14:10		X
ICV1128159	1	11:33		X
ICB1128158	1	11:55		X
102512MB	1	12:16		X
102512LCS	1	12:38		X
102512LCSD	1	13:00		X
ZZZZZZ	5	13:22		
ZZZZZZ	10	13:44		
ZZZZZZ	10	14:06		
ZZZZZZ	10	14:28		
ZZZZZZ	500	14:52		
CCV1128156	1	15:14		X
CCB1128154	1	15:36		X
ZZZZZZ	1	15:58		
Q2-TFS-MW-17	10	16:19		X
ZZZZZZ	1	16:41		
ZZZZZZ	1	17:03		
Q2-TFS-MW-15	10	17:25		X
CCV1128157	1	17:47		X
CCB1128155	1	18:09		X

* Chloride

* Dichloroacetate - DCA

* Sulfate

131112 1350

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14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507407

Instrument ID Number : HACH Method : GR

Start Date : 10/26/2012 End Date : 10/26/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
150813MB	1	10:40		X
150814LCS	1	10:43		X
150815LCSD	1	10:46		X
ZZZZZZ	1	10:49		
ZZZZZZ	1	10:52		
ZZZZZZ	1	10:55		
Q2-TFS-MW-17	1	10:58		X
Q2-TFS-MW-15	1	11:01		X

* Residue, Filterable (TDS)

131112 1350

Chain of Custody Documentation

131112 1350

PEL

A Division of SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

3507407 MK

Page 1 of ____

Special Handling:
TAT- Indicate Date Needed: 28 day
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Greg Rowell
CH2M HILL
Atlanta, GA

Project Mgr.: Greg Rowell

Invoice To: Greg Rowell
– on file –

P.O. No.: ____ RQN: ____

Project No.: 426847.PP.FW.09
Site Name: NASKW TFS
Location: Boca Chica State: FL
Sampler(s): Nikki Monroe

1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9=____ 10=____ 11=____

List preservative code below: 2 | 3 | 4

Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1=____ X2=____ X3=____

G=Grab C=Composite

Containers: Analyses:

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		8260B	8270D/8270 SIM	FL-PRO	300.1 (Chlorides Sulfates)	6010 (Manganese)	SM2520 (Salinity)	~~160.1~~ (TDS)	SM2540C mg	
-01	Q2-TFS-MW-17-RS	10-24-12	0905	G	W	3	6				3	X	X	~~NM~~					EB
-02	Q2-TFS-MW-17	10-24-12	1035	G	GW	3	6		3		3	X	X	X	X	X	X		
-03	Q2-TFS-MW-17-MS	10-24-12	1040	G	GW	3	6				3	X	X						MS
-04	Q2-TFS-MW-17-MSD	10-24-12	1040	G	GW	3	6				3	X	X						MSD
-05	Q2-TFS-MW-15	10-24-12	1310	G	GW	3	6		3		3	X	X	X	X	X	X		
-06	Q2-TFS-MW-15-DUP	10-24-12	1315	G	GW	3	6				3	X	X						FD
-07	Q2-TFS-MW-11	10-24-12	1505	G	GW	3	6				3	X	X						
-08	Q2-TFS-TB-1	10-24-12	—	G	W	1					1	X							TB

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other ____

State specific reporting standards: per contract

☐ E-mail to greg.rowell@ch2m.com
EDD Format CH2M HILL
PH < 2 8260, FL-Pro, 6010

Condition upon receipt: ☒ Iced ☐ Ambient ☐ °C 4.6, 5.4, 4.8, 3.8

Relinquished by:	Received by:	Date:	Time:
[signature]	Fed Ex	10-24-12	1645
	[signature]	10/25/12	09:59

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3507407

253

3900 N CAUSEWAY BLVD STE 1200
METAIRIE, LA 700027272
UNITED STATES US

BILL SENDER

TO SAMPLE RECEIVING
PEL LABORATORIES
8405 BENJAMIN RD
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TAMPA FL 33634
(813) 888-9507

REF:
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PO:
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FedEx Express

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J12201209208125

FedEx Express NEW Package US Airbill

FedEx Tracking Number 8005 5031 8055

1 From [redacted]

Date 10-24-12

Sender's Name Nikki Monroe Phone 504 473 1390

Company CH2M HILL

Address 30419 Seagrape Trail Dept./Floor/Suite/Rc

City Big Pine Key State FL ZIP 33043

2 Your Internal Billing Reference 426847.PP.FW.09

3 To

Recipient's Name Sample Receiving Phone 813 888 9507

Company PEL

Address 8405 Benjamin Rd Suite A Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Use this line for the HOLD location address or for continuation of your shipping address.

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PRIORITY OVERNIGHT

33634
FL-US TPA

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☐ Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?

One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry ice, 9, UN 1845 ____ x ____ kg

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[redacted]

Total Packages 4 Total Weight 250 lbs. [redacted] Credit Card Auth.

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3507407

254

ORIGIN ID: EYWA (504) 593-9421
CH2M HILL

3900 N CAUSEWAY BLVD STE 1250

METAIRIE, LA 700027272
UNITED STATES US

SHIP DATE: 24OCT12
ACTWGT: 64.5 LB
CAD: /POS1321
DIMS: 24x14x14 IN

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4 of 4
MPS# 0681 7955 4670 ART 163 1 A
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ORIGIN ID: EYWA (504) 593-9421
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METAIRIE, LA 700027272
UNITED STATES US

SHIP DATE: 24OCT12
ACTWGT: 64.5 LB
CAD: /POS1321
DIMS: 24x14x14 IN

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3 of 4
MPS# 7955 4670 4640
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Mstr# 8005 5031 8055
0200

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34 TPFA

pH LOG SHEET

WO#: 3507407

Client/Project NAS Key West

SampNumber	Method	Matrix		pH	Containers	Temp	Acid	
350740701	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12
350740701	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740702	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12
350740702	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740702	6010	W	<	2	(1)		HNO3	MKeohane 25-Oct-12
350740703	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12
350740703	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740704	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740704	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12
350740705	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12

SampNumber	Method	Matrix		pH	Containers	Temp	Acid	
350740705	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740705	6010	W	<	2	(1)		HNO3	MKeohane 25-Oct-12
350740706	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12
350740706	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740707	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12
350740707	FL-PRO	W	<	2	(2)		H2SO4	MKeohane 25-Oct-12
350740708	8260	W	<	2	(3)		HCl	MKeohane 25-Oct-12

Sample Receipt Confirmation Sheet

Client Information

SDG:	3507407	**Level:**	3
Client:	CH2M Hill	**Date Rec'd:**	10/25/2012 9:59:00 AM
Profile:	91013	**Due Date:**	11/8/2012
Project:	Boca Chica Truck Fill Stand - JP-5	**Profile Name:**	NAS Key West

Sample Verification

Samples/Cooler Secure?	Yes	**COC Present?**	Yes
Temperature of Samples:	3.8,5.4	**All Samples on COC accounted For?**	Yes
Number of Coolers Received:	4	**All Samples Rec'd Intact?**	Yes
Temp Gun ID:	101722663	**Sample Vol. Sufficient For Analysis**	Yes
pH Verified?	Yes	**Samples Rec'd W/I Hold Time?**	Yes
pH WNL?	Yes	**Are All Samples to be Analyzed?**	Yes
Samples Received By:	Fed-Ex	**Correct Sample Containers?**	Yes
Tracking Number:	70,4639,795546	**COC Comments written on COC?**	Yes
Profile Picked By:	MG	**Samplers Initials on COC?**	Yes
Soil Origin (Domestic/Foreign):		**Sample Date/Time Indicated?**	Yes
Site Location/Project on COC?	Yes	**TAT Requested:**	STD
Client Project # on COC?	Yes	**Client Requests Verbal Results?**	No
Project Mgr. Indicated on COC?	Yes	**Client Requests Faxed Results?**	No
COC relinquished/Dated by Client?	Yes	**Specific Subcontract Indicated?**	No
COC Received/Dated by SA?	Yes	**Written on Outside Lab Board?**	No
Written on Internal COC?	Yes	**Radioactivity Check?**	No
Lab to Conduct ALL Analyses?	No		

Comments

Specific tests noted on COC.

LABEL REVIEW TR 10/25/12

PEER REVIEW CF 10/26/2012

Client: CH2M Hill

WONo: 3507407 Profile Name: NAS Key West Profile #: 91013

MATRIX W

Sample #	Bottle	Parameter		Check	Received	Date
01	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:20 PM
01	002	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:20 PM
01	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:20 PM
01	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:52:36 AM
01	004	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:20 PM
01	005	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:21 PM
01	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:08 AM
01	006	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:21 PM
01	007	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:21 PM
01	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:32:15 AM
01	008	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:21 PM
01	009	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:21 PM
01	009	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:27 AM
02	001	160.1	Total Dissolved Solids	In	MKeohane	10/25/2012 1:43:21 PM
02	001	160.1	Total Dissolved Solids	Out	Devon Thompson	10/26/2012 8:50:49 AM
02	001	160.1	Total Dissolved Solids	In	Devon Thompson	10/26/2012 12:00:40 PM
02	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	MKeohane	10/25/2012 1:43:21 PM
02	001	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/25/2012 2:39:23 PM
02	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/25/2012 3:55:09 PM
02	002	6010	Metals	In	MKeohane	10/25/2012 1:43:21 PM
02	002	6010	Metals	Out	Justin Bowman	10/25/2012 3:34:02 PM
02	002	6010	Metals	In	Justin Bowman	10/25/2012 4:35:36 PM

02	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:21 PM
02	004	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:22 PM
02	005	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:22 PM
02	004	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:52:40 AM
02	006	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:22 PM
02	007	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:22 PM
02	006	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:19 AM
02	008	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:22 PM
02	009	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:22 PM
02	009	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:32:33 AM
02	010	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:22 PM
02	011	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:22 PM
02	011	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:32 AM
03	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:22 PM
03	002	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:23 PM
03	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:23 PM
03	001	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:53:02 AM
03	004	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:23 PM
03	005	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:23 PM
03	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:23 AM
03	006	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:23 PM
03	007	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:23 PM
03	006	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:32:40 AM
03	008	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:23 PM
03	009	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:23 PM
03	008	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:36 AM
04	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:23 PM
04	002	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:24 PM

04	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:24 PM
04	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:53:06 AM
04	004	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:24 PM
04	004	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:28 AM
04	005	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:24 PM
04	006	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:24 PM
04	006	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:32:45 AM
04	007	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:24 PM
04	008	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:24 PM
04	007	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:40 AM
05	010	160.1	Total Dissolved Solids	In	MKeohane	10/25/2012 1:43:25 PM
05	010	160.1	Total Dissolved Solids	Out	Devon Thompson	10/26/2012 8:50:51 AM
05	010	160.1	Total Dissolved Solids	In	Devon Thompson	10/26/2012 12:00:38 PM
05	010	300.1	Determination of Inorganic Anions by Ion Chromatography	In	MKeohane	10/25/2012 1:43:25 PM
05	010	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/25/2012 2:39:20 PM
05	010	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/25/2012 3:55:07 PM
05	011	6010	Metals	In	MKeohane	10/25/2012 1:43:26 PM
05	011	6010	Metals	Out	Justin Bowman	10/25/2012 3:34:07 PM
05	011	6010	Metals	In	Justin Bowman	10/25/2012 4:35:39 PM
05	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:24 PM
05	002	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:24 PM
05	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:25 PM
05	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:52:44 AM
05	004	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:25 PM
05	005	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:25 PM

05	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:31 AM
05	006	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:25 PM
05	007	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:25 PM
05	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:32:49 AM
05	008	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:25 PM
05	009	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:25 PM
05	009	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:47 AM
06	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:26 PM
06	002	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:26 PM
06	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:26 PM
06	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:52:50 AM
06	004	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:26 PM
06	005	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:26 PM
06	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:35 AM
06	006	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:26 PM
06	007	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:26 PM
06	006	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:32:54 AM
06	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 1:56:02 PM
06	008	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:26 PM
06	009	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:27 PM
06	008	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:50 AM
07	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:27 PM
07	002	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:27 PM
07	003	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:27 PM
07	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:52:54 AM
07	004	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:27 PM
07	005	8270	GCMS semivolatile	In	MKeohane	10/25/2012 1:43:27 PM
07	004	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:40 AM

07	006	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:27 PM
07	007	8270_SIM	GCMS semivolatile SIM	In	MKeohane	10/25/2012 1:43:27 PM
07	006	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:33:01 AM
07	008	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:27 PM
07	009	FL-PRO	Petroleum Hydrocarbons	In	MKeohane	10/25/2012 1:43:28 PM
07	008	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:34:54 AM
08	001	8260	Volatile Organic Compounds	In	MKeohane	10/25/2012 1:43:28 PM
08	001	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 9:52:57 AM

Addendum

131112 1350

Letter of Acceptance

Customer Name:	CH2M Hill
Date and Time Received:	10/25/2012 9:59:00 AM
Date to be Reported:	11/21/2012
Laboratory Submission Number/SDG:	3507407

Project: NASKW TFS 426847.PP.FW.09

Samples: The submission consisted of 8 samples, including QC, with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: SM2540C, 300.1, 6010, 8260, 8270, 8270_SIM, FL-PRO, SM2520B_OL.

Sample Custody/COC discrepancies:

None.

Notes:

Temp 4.6,5.4,4.8,3.8
PH< 2 8260,6010, FL-PRO
300.1=Chloride and Sulfate
6010= MN only
SM2520OL was sent to Agawam

Distribution of Report to:

CH2M Hill
Attn: Greg Rowell

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. Spectrum Analytical letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials.

Log-in Report

Level: 3

Total of: 37 analyses on 11 samples (including QC) *26-Oct-12*

Report/SDG #: 3507407

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-17-RS	350740701		W	10/24/2012 9:05:00 AM	10/25/2012 9:59:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-17	350740702		W	10/24/2012 10:35:00 AM	10/25/2012 9:59:00 AM

Method		
SM2540C	Total Dissolved Solids	SM2540C
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO
SM2520B_OL	Salinity	2520B

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-17-MS	350740703		W	10/24/2012 10:40:00 AM	10/25/2012 9:59:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

Report/SDG #: 3507407

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-17-MSD	350740704		W	10/24/2012 10:40:00 AM	10/25/2012 9:59:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-15	350740705		W	10/24/2012 1:10:00 PM	10/25/2012 9:59:00 AM

Method		
SM2540C	Total Dissolved Solids	SM2540C
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO
SM2520B_OL	Salinity	2520B

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-15-DUP	350740706		W	10/24/2012 1:15:00 PM	10/25/2012 9:59:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

Report/SDG #: 3507407

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-11	350740707		W	10/24/2012 3:05:00 PM	10/25/2012 9:59:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-TB-1	350740708		W	10/24/2012	10/25/2012 9:59:00 AM

Method		
8260	Volatile Organic Compounds	8260

Mark Gudnason [Tampa]

From: Mark Gudnason [Tampa]
Sent: Tuesday, November 06, 2012 5:27 PM
To: Bethany.Garvey@CH2M.com; Camden.Robinson@CH2M.com
Subject: FW: 3507407-8260-NASKS Boca Chica

Good afternoon.
This will be in the case narrative for the referenced method and SDG.

1. Laboratory Control Spikes (LCS)

   All acceptance criteria were met with the exception of:

   LCS 103112LCS11 was analyzed with the water samples on 10/31/12. The following analyte(s) were recovered above criteria: 2-Hexanone at 132 % with criteria of (55-130). No further action was taken, since marginal exceedance criteria were met.

   Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

   A client requested MS/SD set was analyzed.
   All percent recovery and relative percent difference (RPD) criteria were met with the exception of:

   SD - Q2-TFS-MW-17-MSD was analyzed with the water samples on 10/31/12. The following analyte(s) were recovered above criteria:2-Hexanone at 146 % with criteria of (55-130), Acrylonitrile at 129 % with criteria of (55-126), Ethyl methacrylate at 165 % with criteria of (73-121), Methyl iodide at 162 % with criteria of (75-152). The following analyte(s) exceeded RPD criteria:1,2,3-Trichloropropane at 20.4 % with criteria of (20), 1,2-Dibromo-3-chloropropane at 20.2 % with criteria of (20), 1,4-Dichloro-2-butene at 22.6 % with criteria of (20), 2-Hexanone at 27.5 % with criteria of (20), 4-Methyl-2-pentanone at 21.6 % with criteria of (20), Acrolein at 43.7 % with criteria of (20), Acrylonitrile at 33.8 % with criteria of (20), Chloroethane at 30.9 % with criteria of (20), Chloromethane at 24.5 % with criteria of (20), Dichlorodifluoromethane at 28.7 % with criteria of (20), Ethyl methacrylate at 49.5 % with criteria of (20), Ethylbenzene at 20.1 % with criteria of (20), Isobutyl alcohol at 21.1 % with criteria of (20), Methyl iodide at 22.3 % with criteria of (20), Trichlorofluoromethane at 25.1 % with criteria of (20), Vinyl acetate at 27.5 % with criteria of (20), Vinyl chloride at 22.2 % with criteria of (20).

   No further action was taken based upon LCS recoveries. Samples coded accordingly.

B. Internal Standards:

   All acceptance criteria were met.

C. Samples:

   Sample analysis proceeded normally.

   Analytes were detected in Trip Blank Q2-TFS-TB-1. The following analyte(s) were detected below RL: Acetone at 2.4 ug/L.

Mark Gudnason [Tampa]

From: Mark Gudnason [Tampa]
Sent: Wednesday, November 07, 2012 3:00 PM
To: Bethany.Garvey@CH2M.com; Camden.Robinson@CH2M.com
Subject: FW: 3507407-8270-NASKW

Good afternoon.
This will be in the case narrative for the referenced method and SDG.

I. ANALYSIS

A. Calibration:

All acceptance criteria were met with the exception of:

Kepone exceeded the Max % RSD of 15% (35.9%) for the initial calibration. This compound has historically been a poor performer. No further action was taken, since this compound was not detected in any samples.

SSC1124049 was the second source verification standard analyzed with the initial calibration on 10/11/12. The %D was over the 20% limit for the following compounds: 1,3-Dinitrobenzene (+21.4%), 4-Nitroquinoline-1-oxide (+24%), Methapyriline (-29.8%), Aramite (-24.9%), 1,3,5-Trinitrobenzene (-43.6%), Kepone (+78.1%). No further action was taken, since these compounds were not detected in any samples.

CCV1129934 was analyzed with the water samples on 10/31/12. The %D was over the 20% limit for the following compounds: Safrole (+21.1%), Kepone (+76.3%). No further action was taken, since these compounds were not detected in any samples.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met with the exception of:

Sample Q2-TFS-MW-15-DUP was recovered below criteria for the following surrogates: 2-Fluorobiphenyl at 45 % with criteria of (50-110), p-Terphenyl-d14 at 48.9 % with criteria of (50-135). Since the other four surrogates met criteria, no further action was taken. This sample contained large amounts of non-target compounds that could have interfered with surrogate recovery.

Samples coded accordingly.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:

LCS 151400LCS was analyzed with the water samples extracted on 10/31/02. The following analytes were recovered above criteria: 1,3-Dinitrobenzene at 120 % with criteria of (61-112), 2-Chloronaphthalene at 107 % with criteria of (50-105), Chlorobenzilate at 103 % with criteria of (58-101),

Pentachloronitrobenzene(PCNB) at 108 % with criteria of (60-104), Safrole at 113 % with criteria of (52-100). Since these compounds were recovered only slightly above criteria, no further action was taken. The following analyte had marginal exceedance limit failures: a,a-Dimethylphenethylamine at 0 % with criteria of (60-140), Safrole at 113 % with criteria of (44-108). No further action was taken. None of these compounds were detected in any samples.

Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

A client requested MS/SD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met with the exception of:

MS - Q2-TFS-MW-17-MS was analyzed with the water samples extracted on 10/31/12. The following analytes were recovered below criteria:1,4-Naphthoquinone at 0 % with criteria of (28-143), 2-Naphthylamine at 58.2 % with criteria of (70-130), a,a-Dimethylphenethylamine at 42 % with criteria of (70-130) and the following analyte(s) were recovered above criteria:2,4-Dimethylphenol at 111 % with criteria of (30-110), Butylbenzylphthalate at 130 % with criteria of (45-115), Chlorobenzilate at 127 % with criteria of (58-101), N-Nitrosodiphenylamine at 116 % with criteria of (50-110), Pentachloronitrobenzene(PCNB) at 118 % with criteria of (60-104), Pentachlorophenol at 130 % with criteria of (40-115), Safrole at 115 % with criteria of (52-100).

SD - Q2-TFS-MW-17-MSD was analyzed with the water samples extracted on 10/31/12. The following analytes were recovered below criteria:1,4-Naphthoquinone at 7.7 % with criteria of (28-143), 2-Naphthylamine at 65.6 % with criteria of (70-130), a,a-Dimethylphenethylamine at 0 % with criteria of (70-130) and the following analyte(s) were recovered above criteria:1,3-Dinitrobenzene at 121 % with criteria of (61-112), 2,4,5-Trichlorophenol at 111 % with criteria of (50-110), Chlorobenzilate at 122 % with criteria of (58-101), Pentachloronitrobenzene(PCNB) at 114 % with criteria of (60-104), Pentachlorophenol at 122 % with criteria of (40-115). The following analytes exceeded RPD criteria:1,4-Naphthoquinone at 200 % with criteria of (20), a,a-Dimethylphenethylamine at 200 % with criteria of (20).

Samples coded accordingly.

Appendix

131112 1350

Supplemental Data

Report Date:
07-Nov-12 14:20

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
8405 Benjamin Road Suite A
Tampa, FL 33634
Attn: Mark Gudnason

Project: NAS Key West - Key West, FL
Project #: 3507407

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB58938-01	Q2-TFS-MW-17	Water	24-Oct-12 10:35	29-Oct-12 12:15
SB58938-02	Q2-TFS-MW-15	Water	24-Oct-12 13:10	29-Oct-12 12:15

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 6 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The samples were received 15.1 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-TFS-MW-17 SB58938-01	3507407	Water	24-Oct-12 10:35	29-Oct-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	**1.08**		ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-TFS-MW-15 SB58938-02	3507407	Water	24-Oct-12 13:10	29-Oct-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	< 1.00		ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1227157 - General Preparation										
Duplicate (1227157-DUP2)			**Source: SB58938-01**			Prepared: 05-Nov-12 Analyzed: 06-Nov-12				
Salinity	**1.04**		ppt (1000)	1.00		1.08			4	200
Duplicate (1227157-DUP3)			**Source: SB58938-02**			Prepared: 05-Nov-12 Analyzed: 06-Nov-12				
Salinity	**0.770**	J	ppt (1000)	1.00		0.800			4	200
Reference (1227157-SRM1)						Prepared & Analyzed: 05-Nov-12				
Salinity	**10.3**		ppt (1000)	1.00	10.0		103	90-110		
Reference (1227157-SRM2)						Prepared & Analyzed: 05-Nov-12				
Salinity	**10.3**		ppt (1000)	1.00	10.0		103	90-110		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Nicole Leja

Spectrum Analytical, Inc.
8405 Benjamin Rd., Suite A
Tampa, FL 33634
(P) 813-888-9507 (F) 813-889-7128

CHAIN-OF-CUSTODY RECORD

Thursday, October 25, 2012 1:50:17 PM

WorkOrder: 3507407 SB58938 EY

Send to:
Spectrum Analytical, Inc.
11 Almgren Dr.
Agawam, MA 01001
Phone: 800-789-9115 FAX: 413-789-4076

Project: NAS Key West
Project Name NASKW TFS 426847.PP/FW.09

Report To: Mark Gudnason, Ext 1
Report Level: 3 MG
Report RLU or MDLU: ~~MDL~~ U LODU
J Code results between ~~MDL~~ DL and ~~RL~~ LOQ

Sample ID	LabID	Collection Date	Date Needed	Mtx	ST	Cont	Requested Tests: SM2520B	Comments
Q2-TFS-MW-17	350740702	10/24/2012 10:35:00 AM	11/8/2012	W	N	1	X	58938 01
Q2-TFS-MW-15	350740705	10/24/2012 1:10:00 PM	11/8/2012	W	N	1	X	02

Comments: DODv4.2 LOD=2xMDL. Send ELD.□ / 8260B, 8270D, 6010C / Use only the clients samples for QC (MS/MSD). Do not report any samples that do not appear on the COC. In-house lab QC limits must accompany report, regardless if we are using them are not. Any preliminary reports are expected to contain analytical results/values that will NOT change from the results/values reported in the final data package. For 8270, SOW spike required. See Section Leader.□

		Date/Time			Date/Time
Relinquished by:	MK	10/25/12 14:00	**Received by:**	JLH	10/29/12 1215
Relinquished by:	Fedex		**Received by:**	Fedex	
Relinquished by:			**Received by:**		

15.1 °C

ORIGIN ID: TPFA (813) 888-9507
SHIPPING
SPECTRUM ANALYTICAL
8405 BENJAMIN RD STE A

TAMPA, FL 33634
UNITED STATES US

SHIP DATE: 25OCT12
ACTWGT: 17.5 LB
CAD: 770932/CAFE2605
DIMS: 18x12x10 IN

BILL SENDER

TO **JAIME FLORES**
SPECTRUM ANALYTICAL
11 ALMGREN DR

AGAWAM MA 01001
(800) 789-9115 REF:
INV:
PO: DEPT:

FedEx
Express

FRI - 26 OCT A2
TRK# 0201 4640 0771 8659 STANDARD OVERNIGHT

XE EHTA 01001
MA-US BDL

Part # 156148-434 NRIT 06-06

End Of Report

131112 1350

Date Reported:
13-Nov-12

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Laboratory Report

CH2M Hill
115 Perimeter Center Place, NE
Suite 700
Atlanta, GA 30346-1278

Attn: Greg Rowell

Project # 3507432
Project: NASKW TFS 426847.PP.FW.09

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
350743201	Q2-TFS-MW-05	W	25-Oct-12 10:30	27-Oct-12 11:50
350743202	Q2-TFS-MW-12	W	25-Oct-12 12:05	27-Oct-12 11:50
350743203	Q2-TFS-MW-01	W	25-Oct-12 14:05	27-Oct-12 11:50
350743204	Q2-TFS-TB-2	W	25-Oct-12 0:00	27-Oct-12 11:50
350743205	Q2-TFS-MW-8D	W	26-Oct-12 12:15	27-Oct-12 11:50
350743206	Q2-TFS-MW-04	W	26-Oct-12 13:05	27-Oct-12 11:50
350743207	Q2-TFS-MW-16	W	26-Oct-12 14:40	27-Oct-12 11:50

Soil samples are reported on dry weight basis, unless otherwise noted.

Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis.

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. The results relate only to the samples(s) as received. This report may not be reproduced, except in full, without written approval from Spectrum Analytical.

All applicable NELAC or USEPA CLP requirments have been meet unless noted in the case narrative.

Please contact the laboratory at 813-888-9507 with any questions regarding the data contained in the laboratory report.

Florida	E84207
Texas	T104704408-12-4
South Carolina	96011001
North Dakota	R-178
California	07253CA
Louisiana	02025
Kansas	E-10385
Arkansas	11-036-1

NELAP ACCREDITED TNI LABORATORY

LABORATORY ACCREDITATION BUREAU ACCREDITED
Certificate # L2259 Testing

Respectfully Submitted,

Brian Spann
Laboratory Director
Spectrum Analytical, Inc. Florida Division

Table of Contents

Organics 5

8260 Volatile Organics 8

8260 Sample Data 12

8260 QC Summary 34

8260 Standards Data 48

8270 SIM Semi-Volatile Organics 57

8270 SIM Sample Data 61

8270 SIM QC Summary 69

8270 SIM Standards Data 81

8270 Semi-Volatile Organics 87

8270 Sample Data 92

8270 QC Summary 117

8270 Standards Data 135

FL-PRO Organics 152

FL-PRO Sample Data 156

FL-PRO QC Summary 163

FL-PRO Standards Data 174

Inorganics 186

Metals Data Package 189

Metals Inorganic Sample Data 194

Metals Inorganic QC Summary Data 198

Wet Chemistry Data Package 220

Wet Chemistry Data Package 220

Wetchem sal Inorganic Sample Data 222

Wetchem sal Inorganic QC Summary Data 226

Wet Chemistry Sample Data 237

Wet Chemistry QC Summary Data 243

Chain of Custody Documentation 265

Addendum 277

Appendix 283

Supplemental Data 284

End of Report 294

EXECUTIVE SUMMARY - Detection Highlights

3507432

SAMPLE ID: Q2-TFS-MW-01

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Acetone	1.80 J	10	UG/L	SW8260B
1-Methylnaphthalene	0.140	0.050	UG/L	SW8270D-SIM
Acenaphthene	0.100	0.050	UG/L	SW8270D-SIM
Acenaphthylene	0.0340 J	0.050	UG/L	SW8270D-SIM
Fluoranthene	0.0270 J	0.050	UG/L	SW8270D-SIM
Fluorene	0.0660	0.050	UG/L	SW8270D-SIM
Naphthalene	0.140	0.050	UG/L	SW8270D-SIM
TPH	2400	500	UG/L	FL-PRO

SAMPLE ID: Q2-TFS-MW-04

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Sulfate	1.90	1.00	MG/L	E300.1
Manganese	20.8	10.0	UG/L	SW6010B
Benzene	0.300 J	0.50	UG/L	SW8260B
Acenaphthene	0.500	0.051	UG/L	SW8270D-SIM
Acenaphthylene	0.260	0.051	UG/L	SW8270D-SIM
Fluoranthene	0.0350 J	0.051	UG/L	SW8270D-SIM
Fluorene	0.600	0.051	UG/L	SW8270D-SIM
Phenanthrene	0.260	0.051	UG/L	SW8270D-SIM
TPH	8200	500	UG/L	FL-PRO
Residue, Filterable (TDS	786	20.0	MG/L	A2540C

SAMPLE ID: Q2-TFS-MW-04DL1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	144	5.00	MG/L	E300.1
1-Methylnaphthalene	49.3	0.51	UG/L	SW8270D-SIM
2-Methylnaphthalene	13.6	0.51	UG/L	SW8270D-SIM
Naphthalene	17.6	0.51	UG/L	SW8270D-SIM

131112 1340

EXECUTIVE SUMMARY - Detection Highlights

3507432

SAMPLE ID: Q2-TFS-MW-05

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Acenaphthene	0.0240 J	0.050	UG/L	SW8270D-SIM
TPH	300 J	500	UG/L	FL-PRO

SAMPLE ID: Q2-TFS-MW-12

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
TPH	310 J	500	UG/L	FL-PRO

SAMPLE ID: Q2-TFS-MW-16

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	413	10.0	MG/L	E300.1
Sulfate	91.8	10.0	MG/L	E300.1
Manganese	1.64 J	10.0	UG/L	SW6010B
TPH	360 JB	500	UG/L	FL-PRO
Residue, Filterable (TDS	1100	20.0	MG/L	A2540C

SAMPLE ID: Q2-TFS-MW-8D

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Sulfate	732	10.0	MG/L	E300.1
Manganese	2.93 J	10.0	UG/L	SW6010B
Acetone	1.80 J	10	UG/L	SW8260B
TPH	640	500	UG/L	FL-PRO
Salinity	10.7	1.00	ppt (1000)	A2520B

131112 1340

EXECUTIVE SUMMARY - Detection Highlights

3507432

Residue, Filterable (TDS	11300	20.0	MG/L	A2540C

SAMPLE ID: Q2-TFS-MW-8DDL1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Chloride	6100	100	MG/L	E300.1

SAMPLE ID: Q2-TFS-TB-2

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
Acetone	7.10 J	10	UG/L	SW8260B

131112 1340

Organics

131112 1340

Organic Data Qualifiers

U Indicates the analyte was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that analyte. The reporting limit can vary from sample to sample depending on dilution factors or the percent moisture adjustment when indicated.

J Indicates estimated value. It is used when the data indicates the presence of an analyte above the method detection limit (MDL) yet lower than the reporting limit.

B Indicates the analyte was found in the associated blank as well as in the sample. The notation indicates possible contamination of the sample.

E Indicates the value reported is above the highest calibration standard for that analyte. The sample should be analyzed at an appropriate dilution. "E" qualified values are estimations and the diluted result may be reported on another Form 1.

D Indicates the analyte has been identified in a dilution reanalysis. "D" qualifiers are used for samples that have been analyzed at a lesser dilution than required for accurate quantitation.

C The "C" qualifier indicates the presence of this analyte has been confirmed by GC/MS analysis.

P This qualifier is used for pesticide / Aroclor target analytes where there is greater than 25% difference for the detected concentration between the two GC columns.

N This qualifier indicates presumptive evidence of an analyte. This qualifier is only used for tentatively identified compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

A This qualifier indicates that a TIC is a suspected aldol-condensation product.

X Data flagged as rejected by analyst utilizing analytical judgement.

131112 1340

Organic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for organic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

131112 1340

8260 Volatile Organics

131112 1340

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW8260B

IV. PREPARATION

Water samples were prepared by SW846/5030 for EPA8260B volatiles analysis. All aspects of sample preparation proceeded without exception.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:

LCS 103112LCS11 was analyzed with the water samples on 10/31/12. The following analyte(s) were recovered above criteria: 2-Hexanone at 132 % with

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

criteria of (55-130). No further action was taken, since marginal exceedance criteria were met.

Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.

Analytes were detected in Trip Blank Q2-TFS-TB-2. The following analyte(s) were detected below RL: Acetone at 7.1 ug/L.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Brian C. Spanh Title: Lab Director

SIGNED: DATE: 11/05/2012

VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Method: 8260

EPA Sample No	Lab Sample ID
Q2-TFS-MW-05	350743201
Q2-TFS-MW-12	350743202
Q2-TFS-MW-01	350743203
Q2-TFS-TB-2	350743204
Q2-TFS-MW-8D	350743205
Q2-TFS-MW-04	350743206
Q2-TFS-MW-16	350743207

131112 1341

8260 Sample Data

131112 1341

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 743201.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1401

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 743201.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1401

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 743201.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1401

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 743202.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1423

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 743202.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1423

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 743202.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1423

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 743203.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1446

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	1.8	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 743203.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1446

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 743203.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1446

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743204 Lab File ID 743204.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1338

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	7.1	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743204 Lab File ID 743204.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1338

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-TB-2

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743204 Lab File ID 743204.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1338

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 743205.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1508

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	1.8	J	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 743205.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1508

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 743205.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1508

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 743206.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1553

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.3	J	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 743206.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1553

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 743206.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1553

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 743207.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1531

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 743207.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1531

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 743207.D

Sample wt/vol: 5 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1531

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

8260 QC Summary

131112 1341

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

103112BLK12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 103112BLK12 Lab File ID: BLK12.D

Sample wt/vol: 5 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0954

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
75-71-8	Dichlorodifluoromethane	1.2	U	0.6	1.2	1.2
74-87-3	Chloromethane	0.64	U	0.32	0.64	1
75-01-4	Vinyl chloride	0.36	U	0.18	0.36	1
74-83-9	Bromomethane	0.86	U	0.43	0.86	1
75-00-3	Chloroethane	1.4	U	0.72	1.4	1.4
75-69-4	Trichlorofluoromethane	0.8	U	0.4	0.8	1
75-35-4	1,1-Dichloroethene	0.38	U	0.19	0.38	0.5
107-02-8	Acrolein	8	U	4	8	10
74-88-4	Methyl iodide	1.5	U	0.74	1.5	1.5
75-15-0	Carbon disulfide	0.38	U	0.19	0.38	1
75-09-2	Methylene chloride	1.3	U	0.66	1.3	5
156-60-5	trans-1,2-Dichloroethene	0.66	U	0.33	0.66	0.66
107-13-1	Acrylonitrile	4	U	2	4	4
75-34-3	1,1-Dichloroethane	1	U	0.5	1	1
67-64-1	Acetone	2.6	U	1.3	2.6	10
78-93-3	2-Butanone	4	U	2	4	4
67-66-3	Chloroform	0.32	U	0.16	0.32	0.5
71-55-6	1,1,1-Trichloroethane	0.28	U	0.14	0.28	1
56-23-5	Carbon tetrachloride	0.28	U	0.14	0.28	0.5
71-43-2	Benzene	0.34	U	0.17	0.34	0.5
107-06-2	1,2-Dichloroethane	0.3	U	0.15	0.3	0.5
79-01-6	Trichloroethene	0.38	U	0.19	0.38	0.5
108-05-4	Vinyl acetate	0.36	U	0.18	0.36	1
78-87-5	1,2-Dichloropropane	0.3	U	0.15	0.3	1
74-95-3	Dibromomethane	0.8	U	0.4	0.8	1
75-27-4	Bromodichloromethane	0.3	U	0.15	0.3	0.5
10061-01-5	cis-1,3-Dichloropropene	0.8	U	0.4	0.8	1

131112 1341

Form I

1

VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

103112BLK12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 103112BLK12 Lab File ID: BLK12.D

Sample wt/vol: 5 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 5 Date Extracted:

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0954

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: PURGETRAP Station ID: Method: 8260

GPC Cleanup : (Y/N) pH:

Column(1): DB-624 ID: 0.18 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
108-10-1	4-Methyl-2-pentanone	2	U	1	2	4
108-88-3	Toluene	0.28	U	0.14	0.28	1
10061-02-6	trans-1,3-Dichloropropene	0.6	U	0.3	0.6	1
97-63-2	Ethyl methacrylate	1	U	0.5	1	1
79-00-5	1,1,2-Trichloroethane	0.4	U	0.2	0.4	1
127-18-4	Tetrachloroethene	0.42	U	0.21	0.42	0.5
591-78-6	2-Hexanone	0.96	U	0.48	0.96	4
124-48-1	Dibromochloromethane	0.26	U	0.13	0.26	0.5
106-93-4	1,2-Dibromoethane	0.22	U	0.11	0.22	1
108-90-7	Chlorobenzene	0.32	U	0.16	0.32	0.5
630-20-6	1,1,1,2-Tetrachloroethane	0.28	U	0.14	0.28	0.5
100-41-4	Ethylbenzene	0.44	U	0.22	0.44	0.5
100-42-5	Styrene	0.26	U	0.13	0.26	1
75-25-2	Bromoform	0.38	U	0.19	0.38	1
79-34-5	1,1,2,2-Tetrachloroethane	0.26	U	0.13	0.26	0.26
96-18-4	1,2,3-Trichloropropane	0.7	U	0.35	0.7	1
96-12-8	1,2-Dibromo-3-chloropropane	2	U	1	2	2
110-57-6	1,4-Dichloro-2-butene	4	U	2	4	4
75-05-8	Acetonitrile	20	U	10	20	20
107-05-1	Allyl chloride	0.48	U	0.24	0.48	1
123-91-1	1,4-Dioxane	20	U	10	20	40
78-83-1	Isobutyl alcohol	40	U	20	40	40
126-98-7	Methacrylonitrile	2	U	1	2	10
80-62-6	Methyl methacrylate	0.36	U	0.18	0.36	1
107-12-0	Propionitrile	20	U	10	20	20
126-99-8	Chloroprene	0.4	U	0.2	0.4	1
1330-20-7	Xylene (total)	1	U	0.5	1	2

4

VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

103112BLK12

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID: BLK12.D Lab Sample ID: 103112BLK12

Instrument ID: VMS01 Date Extracted:

Matrix: WATER Date Analyzed: 10/31/12

Level:(low/med) LOW Time Analyzed: 0954

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	103112LCS11	103112LCS11	LCS11.D	10/31/12	0727
2	103112LCS11D	103112LCS11D	LCS11D.D	10/31/12	0750
3	Q2-TFS-TB-2	350743204	743204.D	10/31/12	1338
4	Q2-TFS-MW-05	350743201	743201.D	10/31/12	1401
5	Q2-TFS-MW-12	350743202	743202.D	10/31/12	1423
6	Q2-TFS-MW-01	350743203	743203.D	10/31/12	1446
7	Q2-TFS-MW-8D	350743205	743205.D	10/31/12	1508
8	Q2-TFS-MW-16	350743207	743207.D	10/31/12	1531
9	Q2-TFS-MW-04	350743206	743206.D	10/31/12	1553

COMMENTS:

Page 1 of 1

131112 1341

Form IV

2A

WATER VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507432

Column(1): DB-624 ID: 0.18 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
103112BLK12	102.0	100.0	113.0	107.0			0
103112LCS11	101.0	102.0	107.0	106.0			0
103112LCS11D	99.6	102.0	103.0	102.0			0
Q2-TFS-MW-01	101.0	101.0	112.0	106.0			0
Q2-TFS-MW-04	101.0	104.0	104.0	105.0			0
Q2-TFS-MW-05	100.0	102.0	111.0	106.0			0
Q2-TFS-MW-12	99.0	99.2	107.0	104.0			0
Q2-TFS-MW-16	101.0	100.0	108.0	106.0			0
Q2-TFS-MW-8D	104.0	104.0	113.0	109.0			0
Q2-TFS-TB-2	97.8	100.0	110.0	104.0			0

Control Limits

S1	=	Dibromofluoromethane	85 - 115
S2	=	Toluene-d8	85 - 120
S3	=	4-Bromofluorobenzene	75 - 120
S4	=	1,2-Dichloroethane-d4	70 - 120

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out
Control limit source: (lab/method) METHOD

Form II

131112 1341

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: BFB11.D BFB Injection Date: 10/30/12

Instrument ID: VMS01 BFB Injection Time: 0619

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	18.2	
75	30.0 - 60.0% of mass 95	48.6	
95	Base Peak, 100% relative abundance	100	
96	5.0 - 9.0% of mass 95	6.5	
173	Less than 2.0% of mass 174	1	(1.2)1
174	50.0 - 100.0% of mass 95	81.9	
175	5.0 - 9.0% of mass 174	6.1	(7.44)1
176	95.0 - 101% of mass 174	79	(96.44)1
177	5.0 - 9.0% of mass 176	4.8	(6.14)2

1-Value is % of mass 174

2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1129184	80PPB	80PPB.D	10/30/12	0816
2	STD1129183	60PPB	60PPB.D	10/30/12	0838
3	STD1129181	50PPB	50PPB.D	10/30/12	0901
4	STD1129178	20PPB	20PPB.D	10/30/12	0923
5	STD1129175	10PPB	10PPB.D	10/30/12	0959
6	STD1129182	5PPB	5PPB.D	10/30/12	1022
7	STD1129179	2PPB	2PPB.D	10/30/12	1044
8	STD1129180	500PPT	500PPT.D	10/30/12	1129
9	STD1129177	200PPT	200PPT.D	10/30/12	1151
10	STD1129176	1PPB	1PPBR.D	10/30/12	1214
11	SSC1129192	SEC12	SEC12.D	10/30/12	1335

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: BFB11.D BFB Injection Date: 10/31/12

Instrument ID: VMS01 BFB Injection Time: 0611

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0% of mass 95	19.3	
75	30.0 - 60.0% of mass 95	50.7	
95	Base Peak, 100% relative abundance	100	
96	5.0 - 9.0% of mass 95	6.9	
173	Less than 2.0% of mass 174	1.2	(1.46)1
174	50.0 - 100.0% of mass 95	80	
175	5.0 - 9.0% of mass 174	5.8	(7.2)1
176	95.0 - 101% of mass 174	77	(96.15)1
177	5.0 - 9.0% of mass 176	4.9	(6.35)2

1-Value is % of mass 174

2-Value is % of mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129215	103112CCV11	50CCV11.D	10/31/12	0649
2	103112LCS11	103112LCS11	LCS11.D	10/31/12	0727
3	103112LCS11D	103112LCS11D	LCS11D.D	10/31/12	0750
4	103112BLK12	103112BLK12	BLK12.D	10/31/12	0954
5	Q2-TFS-TB-2	350743204	743204.D	10/31/12	1338
6	Q2-TFS-MW-05	350743201	743201.D	10/31/12	1401
7	Q2-TFS-MW-12	350743202	743202.D	10/31/12	1423
8	Q2-TFS-MW-01	350743203	743203.D	10/31/12	1446
9	Q2-TFS-MW-8D	350743205	743205.D	10/31/12	1508
10	Q2-TFS-MW-16	350743207	743207.D	10/31/12	1531
11	Q2-TFS-MW-04	350743206	743206.D	10/31/12	1553

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID (Standard): 50PPB.D Date Analyzed: 10/30/2012

Instrument ID: VMS01 Time Analyzed: 9:01

GC Column: DB-624 ID: 0.18 (mm)

Matrix: (soil/water) W Heated Purge: (Y/N) No

		IS1 AREA	#	RT	IS2 AREA	#	RT	IS3 AREA	#	RT
	MID CAL STD	2341238		6.62	1790415		9.15	1032933		10.54
	UPPER LIMIT	4682476		7.12	3580830		9.65	2065866		11.04
	LOWER LIMIT	1170619		6.12	895207.5		8.65	516466.5		10.04
	EPA SAMPLE NO.									
1	103112LCS11	2283342		6.62	1713446		9.15	917859		10.54
2	103112LCS11D	2212247		6.62	1647146		9.15	900481		10.54
3	103112BLK12	2098916		6.62	1537177		9.15	734705		10.54
4	Q2-TFS-TB-2	2264512		6.62	1655132		9.15	814840		10.54
5	Q2-TFS-MW-05	2156138		6.62	1586772		9.15	775716		10.54
6	Q2-TFS-MW-12	2140708		6.62	1527633		9.15	772121		10.54
7	Q2-TFS-MW-01	2143892		6.62	1549339		9.15	767945		10.54
8	Q2-TFS-MW-8D	2081045		6.62	1532588		9.15	744731		10.54
9	Q2-TFS-MW-16	2169147		6.62	1579689		9.15	777123		10.54
10	Q2-TFS-MW-04	2158800		6.62	1598728		9.15	869091		10.54

IS1 = Fluorobenzene

IS2 = Chlorobenzene-d5

IS3 = 1,4-Dichlorobenzene-d4

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1341

FORM VIII

8

VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: DB-624 ID: 0.18 (mm) Init. Calib. Date: 10/30/12

Instrument ID: VMS01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 5.88 S2 : 8.12 S3 : 9.88 S4 : 6.25

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	103012BFB11	103012BFB11	BFB11.D	10/30/12	0619				
2	STD1129184	80PPB	80PPB.D	10/30/12	0816				
3	STD1129183	60PPB	60PPB.D	10/30/12	0838	5.88	8.12	9.88	6.25
4	STD1129181	50PPB	50PPB.D	10/30/12	0901	5.88	8.12	9.88	6.25
5	STD1129178	20PPB	20PPB.D	10/30/12	0923	5.88	8.12	9.88	6.25
6	STD1129175	10PPB	10PPB.D	10/30/12	0959	5.88	8.12	9.88	6.25
7	STD1129182	5PPB	5PPB.D	10/30/12	1022	5.88	8.12	9.88	6.25
8	STD1129179	2PPB	2PPB.D	10/30/12	1044				
9	STD1129180	500PPT	500PPT.D	10/30/12	1129				
10	STD1129177	200PPT	200PPT.D	10/30/12	1151				
11	STD1129176	1PPB	1PPBR.D	10/30/12	1214		8.12		
12	SSC1129192	SEC12	SEC12.D	10/30/12	1335	5.88	8.12	9.88	6.25
13	103112BFB11	103112BFB11	BFB11.D	10/31/12	0611				
14	CCV1129215	103112CCV11	50CCV11.D	10/31/12	0649	5.88	8.12	9.88	6.25
15	103112LCS11	103112LCS11	LCS11.D	10/31/12	0727	5.88	8.12	9.88	6.25
16	103112LCS11D	103112LCS11D	LCS11D.D	10/31/12	0750	5.88	8.12	9.88	6.25
17	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0812				
18	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0834				
19	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0932				
20	103112BLK12	103112BLK12	BLK12.D	10/31/12	0954	5.88	8.12	9.88	6.25
21	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1016				
22	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1101				
23	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1123				
24	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1146				
25	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1208				
26	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1231				

QC LIMITS

S1	=	Dibromofluoromethane	(+/- 0.4 MINUTES)
S2	=	Toluene-d8	(+/- 0.4 MINUTES)
S3	=	4-Bromofluorobenzene	(+/- 0.63 MINUTES)
S4	=	1,2-Dichloroethane-d4	(+/- 0.4 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

Page 1 of 2

VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: DB-624 ID: 0.18 (mm) Init. Calib. Date: 10/30/12

Instrument ID: VMS01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 5.88 S2 : 8.12 S3 : 9.88 S4 : 6.25

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1253				
28	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1316				
29	Q2-TFS-TB-2	350743204	743204.D	10/31/12	1338	5.88	8.12	9.88	6.25
30	Q2-TFS-MW-05	350743201	743201.D	10/31/12	1401	5.88	8.12	9.88	6.25
31	Q2-TFS-MW-12	350743202	743202.D	10/31/12	1423	5.88	8.12	9.88	6.25
32	Q2-TFS-MW-01	350743203	743203.D	10/31/12	1446	5.88	8.12	9.88	6.25
33	Q2-TFS-MW-8D	350743205	743205.D	10/31/12	1508	5.88	8.12	9.88	6.25
34	Q2-TFS-MW-16	350743207	743207.D	10/31/12	1531	5.88	8.12	9.88	6.25
35	Q2-TFS-MW-04	350743206	743206.D	10/31/12	1553	5.88	8.12	9.88	6.25
36	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1616				
37	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1638				
38	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1700				

			QC LIMITS
S1	=	Dibromofluoromethane	(+/- 0.4 MINUTES)
S2	=	Toluene-d8	(+/- 0.4 MINUTES)
S3	=	4-Bromofluorobenzene	(+/- 0.63 MINUTES)
S4	=	1,2-Dichloroethane-d4	(+/- 0.4 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

Page 2 of 2

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20	19.5	97.5			30 - 155
Chloromethane	20	19.6	98.0			40 - 125
Vinyl chloride	20	20.5	102.0			50 - 145
Bromomethane	20	20.3	102.0			30 - 145
Chloroethane	20	20.2	101.0			60 - 135
Trichlorofluoromethane	20	20.3	102.0			60 - 145
1,1-Dichloroethene	20	20.8	104.0			70 - 130
Acrolein	40	44.6	112.0			31 - 148
Methyl iodide	20	20.6	103.0			75 - 152
Carbon disulfide	20	20.2	101.0			35 - 160
Methylene chloride	20	23	115.0			55 - 140
trans-1,2-Dichloroethene	20	20.8	104.0			60 - 140
Acrylonitrile	40	40.4	101.0			55 - 126
1,1-Dichloroethane	20	21.9	110.0			70 - 135
Acetone	40	55.7	139.0			40 - 140
2-Butanone	40	52.2	130.0			30 - 150
Chloroform	20	21.1	106.0			65 - 135
1,1,1-Trichloroethane	20	21.4	107.0			65 - 130
Carbon tetrachloride	20	21.6	108.0			65 - 140
Benzene	20	20.8	104.0			80 - 120
1,2-Dichloroethane	20	21.6	108.0			70 - 130
Trichloroethene	20	20.6	103.0			70 - 125
Vinyl acetate	20	21.7	108.0			77 - 150
1,2-Dichloropropane	20	22.4	112.0			75 - 125
Dibromomethane	20	20.6	103.0			75 - 125
Bromodichloromethane	20	21.3	106.0			75 - 120
cis-1,3-Dichloropropene	20	23.2	116.0			70 - 130
4-Methyl-2-pentanone	40	39.8	99.5			60 - 135
Toluene	20	21.5	108.0			75 - 120
trans-1,3-Dichloropropene	20	19.2	96.0			55 - 140
Ethyl methacrylate	20	20.8	104.0			73 - 121
1,1,2-Trichloroethane	20	21.2	106.0			75 - 125

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1341

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20	21.3	106.0			45 - 150
2-Hexanone	40	52.6	132.0 *			55 - 130
Dibromochloromethane	20	21.2	106.0			60 - 135
1,2-Dibromoethane	20	20.8	104.0			80 - 120
Chlorobenzene	20	20.7	104.0			80 - 120
1,1,1,2-Tetrachloroethane	20	21.3	106.0			80 - 130
Ethylbenzene	20	21.2	106.0			75 - 125
Styrene	20	21.4	107.0			65 - 135
Bromoform	20	20.2	101.0			70 - 130
1,1,2,2-Tetrachloroethane	20	19.7	98.5			65 - 130
1,2,3-Trichloropropane	20	19	95.0			75 - 125
1,2-Dibromo-3-chloropropane	20	19.5	97.5			50 - 130
1,4-Dichloro-2-butene	40	44.9	112.0			68 - 115
Acetonitrile	200	218	109.0			37 - 122
Allyl chloride	20	21.8	109.0			70 - 130
1,4-Dioxane	400	359	89.8			0 - 167
Isobutyl alcohol	400	427	107.0			70 - 130
Methacrylonitrile	200	207	104.0			70 - 130
Methyl methacrylate	20	20.6	103.0			33 - 172
Propionitrile	200	205	102.0			70 - 130
Chloroprene	20	22.7	114.0			70 - 130
Xylene (total)	60	63.5	106.0			82 - 124

Spike Recovery: 1 out of 54 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1341

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11D

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Dichlorodifluoromethane	20	18.7	93.5	4.2	20	30 - 155
Chloromethane	20	19.6	98.0	0.0	20	40 - 125
Vinyl chloride	20	19.6	98.0	4.5	20	50 - 145
Bromomethane	20	19.8	99.0	2.5	20	30 - 145
Chloroethane	20	19.6	98.0	3.0	20	60 - 135
Trichlorofluoromethane	20	19.9	99.5	2.0	20	60 - 145
1,1-Dichloroethene	20	19.6	98.0	5.9	20	70 - 130
Acrolein	40	41.5	104.0	7.2	20	31 - 148
Methyl iodide	20	20	100.0	3.0	20	75 - 152
Carbon disulfide	20	18.8	94.0	7.2	20	35 - 160
Methylene chloride	20	22.4	112.0	2.6	20	55 - 140
trans-1,2-Dichloroethene	20	19	95.0	9.0	20	60 - 140
Acrylonitrile	40	39.2	98.0	3.0	20	55 - 126
1,1-Dichloroethane	20	20.4	102.0	7.1	20	70 - 135
Acetone	40	52.7	132.0	5.5	20	40 - 140
2-Butanone	40	50.1	125.0	4.1	20	30 - 150
Chloroform	20	19.3	96.5	8.9	20	65 - 135
1,1,1-Trichloroethane	20	19.4	97.0	9.8	20	65 - 130
Carbon tetrachloride	20	19.3	96.5	11.2	20	65 - 140
Benzene	20	18.9	94.5	9.6	20	80 - 120
1,2-Dichloroethane	20	20.2	101.0	6.7	20	70 - 130
Trichloroethene	20	18.6	93.0	10.2	20	70 - 125
Vinyl acetate	20	20.2	101.0	7.2	20	77 - 150
1,2-Dichloropropane	20	20.2	101.0	10.3	20	75 - 125
Dibromomethane	20	19.8	99.0	4.0	20	75 - 125
Bromodichloromethane	20	19.6	98.0	8.3	20	75 - 120
cis-1,3-Dichloropropene	20	20.9	104.0	10.4	20	70 - 130
4-Methyl-2-pentanone	40	39.3	98.2	1.3	20	60 - 135
Toluene	20	20.1	100.0	6.7	20	75 - 120
trans-1,3-Dichloropropene	20	18	90.0	6.5	20	55 - 140
Ethyl methacrylate	20	20.1	100.0	3.4	20	73 - 121
1,1,2-Trichloroethane	20	20.1	100.0	5.3	20	75 - 125

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1341

Form III

3

VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 103112LCS11D

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Tetrachloroethene	20	18.8	94.0	12.5	20	45 - 150
2-Hexanone	40	51.6	129.0	1.9	20	55 - 130
Dibromochloromethane	20	19.4	97.0	8.9	20	60 - 135
1,2-Dibromoethane	20	20.4	102.0	1.9	20	80 - 120
Chlorobenzene	20	19.4	97.0	6.5	20	80 - 120
1,1,1,2-Tetrachloroethane	20	20.1	100.0	5.8	20	80 - 130
Ethylbenzene	20	19.8	99.0	6.8	20	75 - 125
Styrene	20	19.8	99.0	7.8	20	65 - 135
Bromoform	20	18.6	93.0	8.2	20	70 - 130
1,1,2,2-Tetrachloroethane	20	19	95.0	3.6	20	65 - 130
1,2,3-Trichloropropane	20	19	95.0	0.0	20	75 - 125
1,2-Dibromo-3-chloropropane	20	20.4	102.0	4.5	20	50 - 130
1,4-Dichloro-2-butene	40	44.6	112.0	0.7	20	68 - 115
Acetonitrile	200	204	102.0	6.6	20	37 - 122
Allyl chloride	20	20.4	102.0	6.6	20	70 - 130
1,4-Dioxane	400	327	81.8	9.3	20	0 - 167
Isobutyl alcohol	400	381	95.2	11.4	20	70 - 130
Methacrylonitrile	200	204	102.0	1.5	20	70 - 130
Methyl methacrylate	20	20.1	100.0	2.5	20	33 - 172
Propionitrile	200	203	102.0	1.0	20	70 - 130
Chloroprene	20	20.7	104.0	9.2	20	70 - 130
Xylene (total)	60	58.7	97.8	7.9	20	82 - 124

Spike Recovery: 0 out of 54 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1341

Form III

8260 Standards Data

131112 1341

6

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF0.2 =200PPT.D RRF0.5 =500PPT.D
RRF1 =1PPBR.D RRF2 =2PPB.D RRF5 =5PPB.D

COMPOUND	RRF0.2	RRF0.5	RRF1	RRF2	RRF5	$\overline{RRF}$	%RSD OR R^2	RSD
Dichlorodifluoromethane			0.225	0.273	0.282			
Chloromethane	#		0.345	0.346	0.306		#	
Vinyl chloride	*	0.415	0.278	0.341	0.321		*	
Bromomethane			0.254	0.297	0.275			
Chloroethane			0.200	0.205	0.227			
Trichlorofluoromethane			0.330	0.406	0.392			
1,1-Dichloroethene	*	0.534	0.387	0.436	0.401		*	
Acrolein				0.060	0.042			
Methyl iodide			0.054	0.079	0.084			
Carbon disulfide			0.819	0.925	0.762			
Methylene chloride			0.516	0.528	0.399			
trans-1,2-Dichloroethene		0.547	0.405	0.441	0.374			
Acrylonitrile			0.142	0.169	0.133			
1,1-Dichloroethane	#		0.486	0.479	0.419		#	
Acetone					0.143			
2-Butanone				0.148	0.122			
Chloroform	* 0.641	0.497	0.460	0.518	0.445		*	
1,1,1-Trichloroethane			0.323	0.369	0.339			
Carbon tetrachloride		0.334	0.272	0.319	0.276			
Benzene	1.437	1.137	0.988	1.113	0.964			
1,2-Dichloroethane		0.404	0.367	0.386	0.341			
Trichloroethene		0.324	0.216	0.296	0.250			
Vinyl acetate			0.792	0.875	0.691			
1,2-Dichloropropane	*	0.276	0.247	0.288	0.257		*	
Dibromomethane			0.182	0.200	0.173			
Bromodichloromethane	0.429	0.372	0.336	0.381	0.330			
cis-1,3-Dichloropropene		0.288	0.272	0.345	0.310			
4-Methyl-2-pentanone				0.105	0.091			
Toluene	*	0.643	0.555	0.683	0.582		*	
trans-1,3-Dichloropropene		0.305	0.299	0.354	0.298			
Ethyl methacrylate			0.271	0.334	0.295			
1,1,2-Trichloroethane		0.245	0.248	0.276	0.241			
Tetrachloroethene		0.313	0.253	0.297	0.259			
2-Hexanone				0.267	0.221			

131112 1341

FORM VI

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF0.2 =200PPT.D RRF0.5 =500PPT.D
RRF1 =1PPBR.D RRF2 =2PPB.D RRF5 =5PPB.D

COMPOUND	RRF0.2	RRF0.5	RRF1	RRF2	RRF5	$\overline{RRF}$	%RSD OR R^2	RSD
Dibromochloromethane	0.445	0.315	0.307	0.381	0.318			
1,2-Dibromoethane			0.359	0.396	0.339			
Chlorobenzene	#	1.191	0.959	1.079	0.935		#	
1,1,1,2-Tetrachloroethane		0.292	0.293	0.358	0.306			
Ethylbenzene	*	0.485	0.474	0.584	0.498		*	
Styrene			0.901	1.067	0.946			
Bromoform	#		0.205	0.215	0.203		#	
1,1,2,2-Tetrachloroethane	# 1.307	1.093	1.078	1.232	0.985		#	
1,2,3-Trichloropropane			0.354	0.348	0.266			
1,2-Dibromo-3-chloropropane				0.170	0.139			
1,4-Dichloro-2-butene			0.094	0.123	0.102			
Acetonitrile			0.087	0.080	0.068			
Allyl chloride			0.871	0.799	0.676			
1,4-Dioxane			0.003	0.003	0.003			
Isobutyl alcohol				0.005	0.004			
Methacrylonitrile			0.124	0.143	0.123			
Methyl methacrylate			0.175	0.202	0.155			
Propionitrile			0.044	0.046	0.040			
Chloroprene			0.342	0.380	0.319			
o-Xylene		1.446	1.274	1.431	1.238			
p,m-Xylene	0.764	0.625	0.570	0.674	0.598			
==========								
Dibromofluoromethane(SURR)					0.271			
Toluene-d8(SURR)					0.980			
4-Bromofluorobenzene(SURR)					0.942			
1,2-Dichloroethane-d4(SURR)					0.063			

131112 1341

FORM VI

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF10 =10PPB.D RRF20 =20PPB.D
RRF50 =50PPB.D RRF60 =60PPB.D RRF80 =80PPB.D

COMPOUND		RRF10	RRF20	RRF50	RRF60	RRF80	$\overline{RRF}$	%RSD OR R^2		RSD
Dichlorodifluoromethane		0.293	0.306	0.314	0.307	0.323	0.29058	10.7		
Chloromethane	#	0.302	0.277	0.282	0.280	0.274	0.30154	9.8	#	
Vinyl chloride	*	0.319	0.321	0.321	0.313	0.323	0.3279	11.2	*	
Bromomethane		0.297	0.362	0.317	0.307	0.289	0.2999	10.6		
Chloroethane		0.206	0.213	0.213	0.208	0.209	0.21006	3.8		
Trichlorofluoromethane		0.395	0.392	0.412	0.400	0.404	0.39154	6.6		
1,1-Dichloroethene	*	0.451	0.409	0.385	0.394	0.384	0.41988	11.6	*	
Acrolein		0.043	0.040	0.040	0.036	0.035	0.0422	0.99623		
Methyl iodide		0.122	0.186	0.274	0.287	0.334	0.17736	0.99734		
Carbon disulfide		0.903	0.822	0.769	0.788	0.770	0.81968	7.6		
Methylene chloride		0.418	0.379	0.343	0.348	0.343	0.4092	0.99943		
trans-1,2-Dichloroethene		0.447	0.403	0.372	0.375	0.372	0.41503	13.8		
Acrylonitrile		0.124	0.125	0.121	0.116	0.114	0.13058	13.7		
1,1-Dichloroethane	#	0.486	0.463	0.418	0.424	0.416	0.44879	7.2	#	
Acetone		0.164	0.132	0.128	0.145	0.105	0.13612	14.5		
2-Butanone		0.152	0.132	0.126	0.137	0.113	0.13282	10.4		
Chloroform	*	0.523	0.493	0.491	0.509	0.500	0.50758	10.4	*	
1,1,1-Trichloroethane		0.417	0.390	0.395	0.413	0.407	0.38145	9.1		
Carbon tetrachloride		0.336	0.330	0.331	0.347	0.345	0.3212	8.7		
Benzene		1.131	1.043	1.026	1.065	1.047	1.09511	12.2		
1,2-Dichloroethane		0.392	0.370	0.359	0.369	0.368	0.37289	5		
Trichloroethene		0.297	0.287	0.280	0.282	0.280	0.27904	10.9		
Vinyl acetate		0.767	0.724	0.736	0.732	0.735	0.75665	7.4		
1,2-Dichloropropane	*	0.297	0.273	0.264	0.269	0.266	0.27073	5.6	*	
Dibromomethane		0.212	0.190	0.187	0.190	0.186	0.19	6.2		
Bromodichloromethane		0.380	0.364	0.355	0.372	0.372	0.36901	7.4		
cis-1,3-Dichloropropene		0.380	0.377	0.383	0.399	0.395	0.35006	13.8		
4-Methyl-2-pentanone		0.116	0.109	0.104	0.107	0.104	0.10512	6.9		
Toluene	*	0.720	0.681	0.668	0.691	0.672	0.65503	8.2	*	
trans-1,3-Dichloropropene		0.384	0.385	0.397	0.466	0.416	0.367	0.99332		
Ethyl methacrylate		0.362	0.356	0.351	0.368	0.360	0.33706	10.5		
1,1,2-Trichloroethane		0.279	0.269	0.258	0.265	0.254	0.2593	5.3		
Tetrachloroethene		0.303	0.303	0.291	0.302	0.290	0.29007	7.1		
2-Hexanone		0.278	0.270	0.255	0.277	0.226	0.25623	9.2		

131112 1341

FORM VI

6

VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: VMS01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Calibration Time Begin: 816 End: 1214

Min RRF for SPCC(#) = 0.1 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF10 =10PPB.D RRF20 =20PPB.D
RRF50 =50PPB.D RRF60 =60PPB.D RRF80 =80PPB.D

COMPOUND		RRF10	RRF20	RRF50	RRF60	RRF80	$\overline{RRF}$	%RSD OR R^2		RSD
Dibromochloromethane		0.383	0.380	0.381	0.406	0.386	0.37015	11.8		
1,2-Dibromoethane		0.390	0.382	0.370	0.391	0.364	0.37408	5.2		
Chlorobenzene	#	1.102	1.034	0.999	1.051	1.007	1.0397	7.5	#	
1,1,1,2-Tetrachloroethane		0.347	0.350	0.348	0.368	0.353	0.33485	8.8		
Ethylbenzene	*	0.576	0.539	0.533	0.561	0.539	0.53197	7.4	*	
Styrene		1.164	1.136	1.129	1.209	1.171	1.09043	10.2		
Bromoform	#	0.254	0.265	0.272	0.288	0.279	0.24768	14	#	
1,1,2,2-Tetrachloroethane	#	1.142	1.038	0.944	0.952	0.888	1.0658	12.5	#	
1,2,3-Trichloropropane		0.325	0.303	0.268	0.273	0.254	0.29894	13.3		
1,2-Dibromo-3-chloropropane		0.166	0.161	0.158	0.158	0.145	0.15698	7		
1,4-Dichloro-2-butene		0.132	0.137	0.133	0.136	0.123	0.12253	13.3		
Acetonitrile		0.079	0.072	0.067	0.067	0.066	0.07333	10.7		
Allyl chloride		0.792	0.720	0.674	0.671	0.663	0.73335	10.7		
1,4-Dioxane		0.004	0.003	0.003	0.003	0.003	0.00315	10.9		
Isobutyl alcohol		0.005	0.004	0.004	0.004	0.004	0.00411	13.8		
Methacrylonitrile		0.145	0.138	0.133	0.135	0.131	0.13384	5.8		
Methyl methacrylate		0.206	0.202	0.198	0.199	0.195	0.19155	9.2		
Propionitrile		0.047	0.043	0.040	0.040	0.039	0.04247	7.2		
Chloroprene		0.390	0.362	0.339	0.349	0.346	0.3534	6.5		
o-Xylene		1.485	1.422	1.392	1.475	1.419	1.39802	6.1		
p,m-Xylene		0.719	0.690	0.675	0.709	0.682	0.67047	8.7		
==========										=========
Dibromofluoromethane(SURR)		0.237	0.252	0.262	0.251		0.2545	5		
Toluene-d8(SURR)		0.854	0.922	0.938	0.908		0.92048	5		
4-Bromofluorobenzene(SURR)		0.816	0.859	0.834	0.801		0.85038	6.5		
1,2-Dichloroethane-d4(SURR)		0.057	0.058	0.060	0.057		0.05921	4.3		

131112 1341

FORM VI

7SSC

VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: VMS01 CalibrationDate: 10/30/12 Time: 1335

CCV ID: SSC1129192 Lab File ID: SEC12.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Dichlorodifluoromethane		0.29058	0.29792	2.5	AVRG	
Chloromethane	#	0.30154	0.28091	6.8	AVRG	#
Vinyl chloride	*	0.3279	0.32555	0.7	AVRG	*
Bromomethane		0.2999	0.30371	1.3	AVRG	
Chloroethane		0.21006	0.20628	1.8	AVRG	
Trichlorofluoromethane		0.39154	0.41141	5.1	AVRG	
1,1-Dichloroethene	*	0.41988	0.39526	5.9	AVRG	*
Acrolein		100	109	9.0	LINR	
Methyl iodide		50	46.8	6.4	2ORD	
Carbon disulfide		0.81968	0.76167	7.1	AVRG	
Methylene chloride		50	50.6	1.2	LINR	
trans-1,2-Dichloroethene		0.41503	0.38116	8.2	AVRG	
Acrylonitrile		0.13058	0.12566	3.8	AVRG	
1,1-Dichloroethane	#	0.44879	0.42192	6.0	AVRG	#
Acetone		0.13612	0.11175	17.9	AVRG	
2-Butanone		0.13282	0.1193	10.2	AVRG	
Chloroform	*	0.50758	0.49225	3.0	AVRG	*
1,1,1-Trichloroethane		0.38145	0.38517	1.0	AVRG	
Carbon tetrachloride		0.3212	0.32197	0.2	AVRG	
Benzene		1.09511	1.01	7.8	AVRG	
1,2-Dichloroethane		0.37289	0.36366	2.5	AVRG	
Trichloroethene		0.27904	0.2671	4.3	AVRG	
Vinyl acetate		0.75665	0.75985	0.4	AVRG	
1,2-Dichloropropane	*	0.27073	0.25744	4.9	AVRG	*
Dibromomethane		0.19	0.18424	3.0	AVRG	
Bromodichloromethane		0.36901	0.35007	5.1	AVRG	
cis-1,3-Dichloropropene		0.35006	0.37678	7.6	AVRG	
4-Methyl-2-pentanone		0.10512	0.10529	0.2	AVRG	
Toluene	*	0.65503	0.66816	2.0	AVRG	*
trans-1,3-Dichloropropene		50	45.1	9.8	LINR	
Ethyl methacrylate		0.33706	0.35504	5.3	AVRG	
1,1,2-Trichloroethane		0.2593	0.24817	4.3	AVRG	
Tetrachloroethene		0.29007	0.26058	10.2	AVRG	
2-Hexanone		0.25623	0.23593	7.9	AVRG	
Dibromochloromethane		0.37015	0.34454	6.9	AVRG	
1,2-Dibromoethane		0.37408	0.35544	5.0	AVRG	

131112 1341

FORM VII

7SSC

VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: VMS01 CalibrationDate: 10/30/12 Time: 1335

CCV ID: SSC1129192 Lab File ID: SEC12.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Chlorobenzene	#	1.0397	0.95988	7.7	AVRG	#
1,1,1,2-Tetrachloroethane		0.33485	0.33018	1.4	AVRG	
Ethylbenzene	*	0.53197	0.51358	3.5	AVRG	*
Styrene		1.09043	1.109	1.7	AVRG	
Bromoform	#	0.24768	0.24961	0.8	AVRG	#
1,1,2,2-Tetrachloroethane	#	1.0658	0.90371	15.2	AVRG	#
1,2,3-Trichloropropane		0.29894	0.2575	13.9	AVRG	
1,2-Dibromo-3-chloropropane		0.15698	0.14794	5.8	AVRG	
1,4-Dichloro-2-butene		0.12253	0.12117	1.1	AVRG	
Acetonitrile		0.07333	0.0718	2.1	AVRG	
Allyl chloride		0.73335	0.71798	2.1	AVRG	
1,4-Dioxane		0.00315	0.0037	17.5	AVRG	
Isobutyl alcohol		0.00411	0.00394	4.1	AVRG	
Methacrylonitrile		0.13384	0.13709	2.4	AVRG	
Methyl methacrylate		0.19155	0.19466	1.6	AVRG	
Propionitrile		0.04247	0.04173	1.7	AVRG	
Chloroprene		0.3534	0.34799	1.5	AVRG	
o-Xylene		1.39802	1.361	2.6	AVRG	
p,m-Xylene		0.67047	0.65132	2.9	AVRG	
==========						
Dibromofluoromethane(SURR)		0.2545	0.25911	1.8	AVRG	
Toluene-d8(SURR)		0.92048	0.94315	2.5	AVRG	
4-Bromofluorobenzene(SURR)		0.85038	0.8244	3.1	AVRG	
1,2-Dichloroethane-d4(SURR)		0.05921	0.061	3.0	AVRG	

131112 1341

FORM VII

7

VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: VMS01 CalibrationDate: 10/31/12 Time: 0649

CCV ID: CCV1129215 Lab File ID: 50CCV11.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Dichlorodifluoromethane		0.29058	0.29285	0.8	AVRG	
Chloromethane	#	0.30154	0.30494	1.1	AVRG	#
Vinyl chloride	*	0.3279	0.34469	5.1	AVRG	*
Bromomethane		0.2999	0.26275	12.4	AVRG	
Chloroethane		0.21006	0.2216	5.5	AVRG	
Trichlorofluoromethane		0.39154	0.41327	5.5	AVRG	
1,1-Dichloroethene	*	0.41988	0.40633	3.2	AVRG	*
Acrolein		100	103	3.0	LINR	
Methyl iodide		50	53.1	6.2	2ORD	
Carbon disulfide		0.81968	0.78315	4.5	AVRG	
Methylene chloride		50	53.2	6.4	LINR	
trans-1,2-Dichloroethene		0.41503	0.39332	5.2	AVRG	
Acrylonitrile		0.13058	0.11951	8.5	AVRG	
1,1-Dichloroethane	#	0.44879	0.43777	2.5	AVRG	#
Acetone		0.13612	0.13883	2.0	AVRG	
2-Butanone		0.13282	0.14001	5.4	AVRG	
Chloroform	*	0.50758	0.51343	1.2	AVRG	*
1,1,1-Trichloroethane		0.38145	0.39548	3.7	AVRG	
Carbon tetrachloride		0.3212	0.33234	3.5	AVRG	
Benzene		1.09511	1.049	4.2	AVRG	
1,2-Dichloroethane		0.37289	0.36857	1.2	AVRG	
Trichloroethene		0.27904	0.26836	3.8	AVRG	
Vinyl acetate		0.75665	0.77991	3.1	AVRG	
1,2-Dichloropropane	*	0.27073	0.27816	2.7	AVRG	*
Dibromomethane		0.19	0.18466	2.8	AVRG	
Bromodichloromethane		0.36901	0.36072	2.2	AVRG	
cis-1,3-Dichloropropene		0.35006	0.38929	11.2	AVRG	
4-Methyl-2-pentanone		0.10512	0.09703	7.7	AVRG	
Toluene	*	0.65503	0.68838	5.1	AVRG	*
trans-1,3-Dichloropropene		50	47	6.0	LINR	
Ethyl methacrylate		0.33706	0.34055	1.0	AVRG	
1,1,2-Trichloroethane		0.2593	0.25427	1.9	AVRG	
Tetrachloroethene		0.29007	0.27015	6.9	AVRG	
2-Hexanone		0.25623	0.25693	0.3	AVRG	
Dibromochloromethane		0.37015	0.36226	2.1	AVRG	
1,2-Dibromoethane		0.37408	0.35666	4.7	AVRG	

131112 1341

FORM VII

7

VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: VMS01 CalibrationDate: 10/31/12 Time: 0649

CCV ID: CCV1129215 Lab File ID: 50CCV11.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: DB-624 ID: 0.18 (mm) Heated Purge: (Y/N) NO

Min RRF for SPCC(#) = 0.1 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
Chlorobenzene	#	1.0397	0.99644	4.2	AVRG	#
1,1,1,2-Tetrachloroethane		0.33485	0.34289	2.4	AVRG	
Ethylbenzene	*	0.53197	0.53397	0.4	AVRG	*
Styrene		1.09043	1.144	4.9	AVRG	
Bromoform	#	0.24768	0.2465	0.5	AVRG	#
1,1,2,2-Tetrachloroethane	#	1.0658	0.93389	12.4	AVRG	#
1,2,3-Trichloropropane		0.29894	0.25658	14.2	AVRG	
1,2-Dibromo-3-chloropropane		0.15698	0.14472	7.8	AVRG	
1,4-Dichloro-2-butene		0.12253	0.12971	5.9	AVRG	
Acetonitrile		0.07333	0.07206	1.7	AVRG	
Allyl chloride		0.73335	0.72062	1.7	AVRG	
1,4-Dioxane		0.00315	0.00256	18.7	AVRG	
Isobutyl alcohol		0.00411	0.00393	4.4	AVRG	
Methacrylonitrile		0.13384	0.13034	2.6	AVRG	
Methyl methacrylate		0.19155	0.18455	3.7	AVRG	
Propionitrile		0.04247	0.03882	8.6	AVRG	
Chloroprene		0.3534	0.37195	5.2	AVRG	
o-Xylene		1.39802	1.428	2.1	AVRG	
p,m-Xylene		0.67047	0.67995	1.4	AVRG	
==========						
Dibromofluoromethane(SURR)		0.2545	0.26218	3.0	AVRG	
Toluene-d8(SURR)		0.92048	0.94045	2.2	AVRG	
4-Bromofluorobenzene(SURR)		0.85038	0.876	3.0	AVRG	
1,2-Dichloroethane-d4(SURR)		0.05921	0.06118	3.3	AVRG	

131112 1341

FORM VII

8270 SIM Semi-Volatile Organics

131112 1341

CASE NARRATIVE
Semi-Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW8270D-SIM.

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510 for 8270 semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met with the exception of:

Sample Q2-TFS-MW-05 was recovered below criteria for the following surrogate: 2-Fluorobiphenyl at 40 % with criteria of (43-116). Since the recovery is only slightly below criteria and the other surrogate met criteria, no further action was taken.

Samples coded accordingly.

D. Spikes:

1. Laboratory Control Spikes (LCS)

CASE NARRATIVE
Semi-Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

All acceptance criteria were met.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.

Sample Q2-TFS-MW-04 required a 10X dilution due to high concentration of the following analytes: 1-Methylnaphthalene, 2-Methylnaphthalene, Naphthalene. Both full and diluted runs are reported.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: DATE: 11/07/2012

SEMI-VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Method: 8270 SIM

EPA Sample No	Lab Sample ID
Q2-TFS-MW-05	350743201
Q2-TFS-MW-12	350743202
Q2-TFS-MW-01	350743203
Q2-TFS-MW-8D	350743205
Q2-TFS-MW-04	350743206
Q2-TFS-MW-04DL1	350743206DL1
Q2-TFS-MW-16	350743207

131112 1341

8270 SIM Sample Data

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2213

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.024	J	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2237

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2301

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.14		0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.1		0.02	0.04	0.05
208-96-8	Acenaphthylene	0.034	J	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.027	J	0.02	0.04	0.05
86-73-7	Fluorene	0.066		0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.14		0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 995 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2325

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 985 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 2349

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	37.4	E	0.02	0.041	0.051
91-57-6	2-Methylnaphthalene	10.4	E	0.02	0.041	0.051
83-32-9	Acenaphthene	0.5		0.02	0.041	0.051
208-96-8	Acenaphthylene	0.26		0.02	0.041	0.051
120-12-7	Anthracene	0.041	U	0.02	0.041	0.051
56-55-3	Benzo(a)anthracene	0.041	U	0.02	0.041	0.051
50-32-8	Benzo(a)pyrene	0.041	U	0.02	0.041	0.051
205-99-2	Benzo(b)fluoranthene	0.041	U	0.02	0.041	0.051
191-24-2	Benzo(g,h,i)perylene	0.041	U	0.02	0.041	0.051
207-08-9	Benzo(k)fluoranthene	0.041	U	0.02	0.041	0.051
218-01-9	Chrysene	0.041	U	0.02	0.041	0.051
53-70-3	Dibenzo(a,h)anthracene	0.041	U	0.02	0.041	0.041
206-44-0	Fluoranthene	0.035	J	0.02	0.041	0.051
86-73-7	Fluorene	0.6		0.02	0.041	0.051
193-39-5	Indeno(1,2,3-cd)pyrene	0.041	U	0.02	0.041	0.051
91-20-3	Naphthalene	13.6	E	0.02	0.041	0.051
85-01-8	Phenanthrene	0.26		0.02	0.041	0.051
129-00-0	Pyrene	0.041	U	0.02	0.041	0.051

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04DL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206DL1 Lab File ID 43206D10.D

Sample wt/vol: 985 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1016

PercentSolids: 0 decanted : Dilution Factor: 10

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	49.3		0.2	0.41	0.51
91-57-6	2-Methylnaphthalene	13.6		0.2	0.41	0.51
83-32-9	Acenaphthene	0.62		0.2	0.41	0.51
208-96-8	Acenaphthylene	0.32	J	0.2	0.41	0.51
120-12-7	Anthracene	0.41	U	0.2	0.41	0.51
56-55-3	Benzo(a)anthracene	0.41	U	0.2	0.41	0.51
50-32-8	Benzo(a)pyrene	0.41	U	0.2	0.41	0.51
205-99-2	Benzo(b)fluoranthene	0.41	U	0.2	0.41	0.51
191-24-2	Benzo(g,h,i)perylene	0.41	U	0.2	0.41	0.51
207-08-9	Benzo(k)fluoranthene	0.41	U	0.2	0.41	0.51
218-01-9	Chrysene	0.41	U	0.2	0.41	0.51
53-70-3	Dibenzo(a,h)anthracene	0.41	U	0.2	0.41	0.41
206-44-0	Fluoranthene	0.41	U	0.2	0.41	0.51
86-73-7	Fluorene	0.7		0.2	0.41	0.51
193-39-5	Indeno(1,2,3-cd)pyrene	0.41	U	0.2	0.41	0.51
91-20-3	Naphthalene	17.6		0.2	0.41	0.51
85-01-8	Phenanthrene	0.31	J	0.2	0.41	0.51
129-00-0	Pyrene	0.41	U	0.2	0.41	0.51

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 985 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 0013

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.041	U	0.02	0.041	0.051
91-57-6	2-Methylnaphthalene	0.041	U	0.02	0.041	0.051
83-32-9	Acenaphthene	0.041	U	0.02	0.041	0.051
208-96-8	Acenaphthylene	0.041	U	0.02	0.041	0.051
120-12-7	Anthracene	0.041	U	0.02	0.041	0.051
56-55-3	Benzo(a)anthracene	0.041	U	0.02	0.041	0.051
50-32-8	Benzo(a)pyrene	0.041	U	0.02	0.041	0.051
205-99-2	Benzo(b)fluoranthene	0.041	U	0.02	0.041	0.051
191-24-2	Benzo(g,h,i)perylene	0.041	U	0.02	0.041	0.051
207-08-9	Benzo(k)fluoranthene	0.041	U	0.02	0.041	0.051
218-01-9	Chrysene	0.041	U	0.02	0.041	0.051
53-70-3	Dibenzo(a,h)anthracene	0.041	U	0.02	0.041	0.041
206-44-0	Fluoranthene	0.041	U	0.02	0.041	0.051
86-73-7	Fluorene	0.041	U	0.02	0.041	0.051
193-39-5	Indeno(1,2,3-cd)pyrene	0.041	U	0.02	0.041	0.051
91-20-3	Naphthalene	0.041	U	0.02	0.041	0.051
85-01-8	Phenanthrene	0.041	U	0.02	0.041	0.051
129-00-0	Pyrene	0.041	U	0.02	0.041	0.051

8270 SIM QC Summary

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151249MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151249MB Lab File ID: 11363MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/30/12

Concentrated Extract Volume: 1 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 10/30/12 Time: 1725

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270 SIM

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
90-12-0	1-Methylnaphthalene	0.04	U	0.02	0.04	0.05
91-57-6	2-Methylnaphthalene	0.04	U	0.02	0.04	0.05
83-32-9	Acenaphthene	0.04	U	0.02	0.04	0.05
208-96-8	Acenaphthylene	0.04	U	0.02	0.04	0.05
120-12-7	Anthracene	0.04	U	0.02	0.04	0.05
56-55-3	Benzo(a)anthracene	0.04	U	0.02	0.04	0.05
50-32-8	Benzo(a)pyrene	0.04	U	0.02	0.04	0.05
205-99-2	Benzo(b)fluoranthene	0.04	U	0.02	0.04	0.05
191-24-2	Benzo(g,h,i)perylene	0.04	U	0.02	0.04	0.05
207-08-9	Benzo(k)fluoranthene	0.04	U	0.02	0.04	0.05
218-01-9	Chrysene	0.04	U	0.02	0.04	0.05
53-70-3	Dibenzo(a,h)anthracene	0.04	U	0.02	0.04	0.04
206-44-0	Fluoranthene	0.04	U	0.02	0.04	0.05
86-73-7	Fluorene	0.04	U	0.02	0.04	0.05
193-39-5	Indeno(1,2,3-cd)pyrene	0.04	U	0.02	0.04	0.05
91-20-3	Naphthalene	0.04	U	0.02	0.04	0.05
85-01-8	Phenanthrene	0.04	U	0.02	0.04	0.05
129-00-0	Pyrene	0.04	U	0.02	0.04	0.05

SEMI-VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151249MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID: 11363MB.D Lab Sample ID: 151249MB

Instrument ID: SMSD01 Date Extracted: 10/30/12

Matrix: WATER Date Analyzed: 10/30/12

Level:(low/med) LOW Time Analyzed: 1725

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151250LCS	151250LCS	11363LCS.D	10/30/12	1748
2	Q2-TFS-MW-05	350743201	43201.D	10/30/12	2213
3	Q2-TFS-MW-12	350743202	43202.D	10/30/12	2237
4	Q2-TFS-MW-01	350743203	43203.D	10/30/12	2301
5	Q2-TFS-MW-8D	350743205	43205.D	10/30/12	2325
6	Q2-TFS-MW-04	350743206	43206.D	10/30/12	2349
7	Q2-TFS-MW-16	350743207	43207.D	10/31/12	0013
8	Q2-TFS-MW-04DL1	350743206DL1	43206D10.D	10/31/12	1016

COMMENTS:

Page 1 of 1

131112 1341

Form IV

2A

WATER SEMI-VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507432

Column(1): HPMS-5 ID: 0.25 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
151249MB	96.0	84.0					0
151250LCS	100.0	92.0					0
Q2-TFS-MW-01	92.0	80.0					0
Q2-TFS-MW-04	94.1	80.4					0
Q2-TFS-MW-04DL1	114.0	98.0					0
Q2-TFS-MW-05	48.0	40.0 *					1
Q2-TFS-MW-12	90.0	76.0					0
Q2-TFS-MW-16	98.0	78.4					0
Q2-TFS-MW-8D	94.0	84.0					0

Control Limits

S1 = p-Terphenyl-d14 33 - 141

S2 = 2-Fluorobiphenyl 43 - 116

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

131112 1341

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: DFTPP1.D DFTPP Injection Date: 10/30/12

Instrument ID: SMSD01 DFTPP Injection Time: 0848

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	48	
68	Less than 2.0% of mass 69	0.6	(1.12)1
69	Mass 69 relative abundance	51	
70	Less than 2.0% of mass 69	0.4	(0.84)1
127	10.0 - 80.0% of mass 198	53.7	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.9	
275	10.0 - 60.0% of mass 198	25.1	
365	Greater than 1.0% of mass 198	3.1	
441	0.0 - 24.0% of mass 442	13.2	(16.46)2
442	Greater than 50.0% of mass 198	80.4	
443	15.0 - 24.0% of mass 442	14.4	(17.89)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1129156	48051	SIMCAL1.D	10/30/12	0909
2	STD1129158	48050	SIMCAL2.D	10/30/12	0933
3	STD1129159	48049	SIMCAL3.D	10/30/12	0957
4	STD1129160	48048	SIMCAL4.D	10/30/12	1020
5	STD1129161	48047	SIMCAL5.D	10/30/12	1044
6	STD1129162	48046	SIMCAL6.D	10/30/12	1108
7	STD1129163	48045	SIMCAL7.D	10/30/12	1132
8	STD1129164	48044	SIMCAL8.D	10/30/12	1156
9	STD1129165	48043	SIMCAL9.D	10/30/12	1221
10	STD1129157	48042	SIMCAL10.D	10/30/12	1245
11	SSC1129169	48052	SIMSEC.D	10/30/12	1309

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: DFTPP1.D DFTPP Injection Date: 10/31/12

Instrument ID: SMSD01 DFTPP Injection Time: 0650

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	45.4	
68	Less than 2.0% of mass 69	0	(0)1
69	Mass 69 relative abundance	46.8	
70	Less than 2.0% of mass 69	0.3	(0.66)1
127	10.0 - 80.0% of mass 198	52	
197	Less than 2.0% of mass 198	0.9	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.6	
275	10.0 - 60.0% of mass 198	23.6	
365	Greater than 1.0% of mass 198	3.1	
441	0.0 - 24.0% of mass 442	15.4	(17.2)2
442	Greater than 50.0% of mass 198	89.6	
443	15.0 - 24.0% of mass 442	17.2	(19.25)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129168	48046	SIMCCV2.D	10/31/12	0815
2	Q2-TFS-MW-04DL1	350743206DL1	43206D10.D	10/31/12	1016

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: DFTPP2.D DFTPP Injection Date: 10/30/12

Instrument ID: SMSD01 DFTPP Injection Time: 1330

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	46.7	
68	Less than 2.0% of mass 69	0.6	(1.28)1
69	Mass 69 relative abundance	48.6	
70	Less than 2.0% of mass 69	0.3	(0.68)1
127	10.0 - 80.0% of mass 198	53.3	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.5	
275	10.0 - 60.0% of mass 198	25.1	
365	Greater than 1.0% of mass 198	2.9	
441	0.0 - 24.0% of mass 442	12.5	(15.59)2
442	Greater than 50.0% of mass 198	80.4	
443	15.0 - 24.0% of mass 442	14.5	(18.09)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129166	48046	SIMCCV1.D	10/30/12	1350
2	151249MB	151249MB	11363MB.D	10/30/12	1725
3	151250LCS	151250LCS	11363LCS.D	10/30/12	1748
4	Q2-TFS-MW-05	350743201	43201.D	10/30/12	2213
5	Q2-TFS-MW-12	350743202	43202.D	10/30/12	2237
6	Q2-TFS-MW-01	350743203	43203.D	10/30/12	2301
7	Q2-TFS-MW-8D	350743205	43205.D	10/30/12	2325
8	Q2-TFS-MW-04	350743206	43206.D	10/30/12	2349
9	Q2-TFS-MW-16	350743207	43207.D	10/31/12	0013

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID (Standard): SIMCAL6.D Date Analyzed: 10/30/2012

Instrument ID: SMSD01 Time Analyzed: 11:08

GC Column: HPMS-5 ID: 0.25 (mm)

		IS1 AREA	#	RT	IS2 AREA	#	RT	IS3 AREA	#	RT
	MID CAL STD	17661		3.74	69571		4.89	33825		6.58
	UPPER LIMIT	35322		4.24	139142		5.39	67650		7.08
	LOWER LIMIT	8830.5		3.24	34785.5		4.39	16912.5		6.08
	EPA SAMPLE NO.									
1	151249MB	18199		3.74	70977		4.89	35934		6.58
2	151250LCS	16576		3.74	66202		4.89	34101		6.58
3	Q2-TFS-MW-05	17118		3.74	67438		4.89	36613		6.58
4	Q2-TFS-MW-12	16324		3.74	66421		4.89	35377		6.58
5	Q2-TFS-MW-01	18087		3.74	69019		4.89	38949		6.58
6	Q2-TFS-MW-8D	16953		3.74	67576		4.89	36057		6.58
7	Q2-TFS-MW-04	18383		3.74	86732		4.89	42097		6.58
8	Q2-TFS-MW-16	17606		3.74	70814		4.89	37817		6.58
9	Q2-TFS-MW-04DL1	16329		3.74	70200		4.89	37575		6.58

IS1 = 1,4-Dichlorobenzene-d4

IS2 = Naphthalene-d8

IS3 = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1341

FORM VIII

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID (Standard): SIMCAL6.D Date Analyzed: 10/30/2012

Instrument ID: SMSD01 Time Analyzed: 11:08

GC Column: HPMS-5 ID: 0.25 (mm)

		IS4 AREA	#	RT	IS5 AREA	#	RT	IS6 AREA	#	RT
	MID CAL STD	71319		8.02	72178		10.60	65012		11.89
	UPPER LIMIT	142638		8.52	144356		11.10	130024		12.39
	LOWER LIMIT	35659.5		7.52	36089		10.10	32506		11.39
	EPA SAMPLE NO.									
1	151249MB	75147		8.02	72488		10.61	68085		11.90
2	151250LCS	70493		8.02	72989		10.60	67949		11.89
3	Q2-TFS-MW-05	78522		8.02	78745		10.60	76769		11.89
4	Q2-TFS-MW-12	75148		8.02	74244		10.60	74247		11.89
5	Q2-TFS-MW-01	82458		8.02	83456		10.60	84528		11.89
6	Q2-TFS-MW-8D	77742		8.02	79949		10.60	80842		11.89
7	Q2-TFS-MW-04	87592		8.02	88109		10.60	88562		11.89
8	Q2-TFS-MW-16	80585		8.02	78260		10.60	82564		11.89
9	Q2-TFS-MW-04DL1	81859		8.02	78941		10.60	79801		11.89

IS4 = Phenanthrene-d10

IS5 = Chrysene-d12

IS6 = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1341

FORM VIII

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/30/12

Instrument ID: SMSD01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 9.59 S2 : 5.94 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	DFTPP1	47701	DFTPP1.D	10/30/12	0848				
2	STD1129156	48051	SIMCAL1.D	10/30/12	0909	9.6	5.95		
3	STD1129158	48050	SIMCAL2.D	10/30/12	0933	9.6	5.95		
4	STD1129159	48049	SIMCAL3.D	10/30/12	0957	9.6	5.95		
5	STD1129160	48048	SIMCAL4.D	10/30/12	1020	9.6	5.95		
6	STD1129161	48047	SIMCAL5.D	10/30/12	1044	9.59	5.95		
7	STD1129162	48046	SIMCAL6.D	10/30/12	1108	9.59	5.94		
8	STD1129163	48045	SIMCAL7.D	10/30/12	1132	9.59	5.94		
9	STD1129164	48044	SIMCAL8.D	10/30/12	1156	9.59	5.94		
10	STD1129165	48043	SIMCAL9.D	10/30/12	1221	9.59	5.94		
11	STD1129157	48042	SIMCAL10.D	10/30/12	1245	9.58	5.94		
12	SSC1129169	48052	SIMSEC.D	10/30/12	1309	9.59	5.95		
13	DFTPP2	47701	DFTPP2.D	10/30/12	1330				
14	CCV1129166	48046	SIMCCV1.D	10/30/12	1350	9.59	5.94		
15	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1443				
16	151249MB	151249MB	11363MB.D	10/30/12	1725	9.59	5.94		
17	151250LCS	151250LCS	11363LCS.D	10/30/12	1748	9.59	5.94		
18	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1812				
19	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1836				
20	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1900				
21	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1924				
22	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	1948				
23	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2012				
24	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2036				
25	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2100				
26	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2124				

QC LIMITS

S1 = p-Terphenyl-d14 (+/- 0.64 MINUTES)
S2 = 2-Fluorobiphenyl (+/- 0.39 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/30/12

Instrument ID: SMSD01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 9.59 S2 : 5.94 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/30/12	2148				
28	Q2-TFS-MW-05	350743201	43201.D	10/30/12	2213	9.59	5.94		
29	Q2-TFS-MW-12	350743202	43202.D	10/30/12	2237	9.59	5.94		
30	Q2-TFS-MW-01	350743203	43203.D	10/30/12	2301	9.59	5.94		
31	Q2-TFS-MW-8D	350743205	43205.D	10/30/12	2325	9.59	5.94		
32	Q2-TFS-MW-04	350743206	43206.D	10/30/12	2349	9.59	5.94		
33	Q2-TFS-MW-16	350743207	43207.D	10/31/12	0013	9.59	5.94		
34	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0037				
35	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0102				
36	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0126				
37	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0150				
38	DFTPP1	47701	DFTPP1.D	10/31/12	0650				
39	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0710				
40	CCV1129168	48046	SIMCCV2.D	10/31/12	0815	9.59	5.94		
41	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0904				
42	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0927				
43	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	0951				
44	Q2-TFS-MW-04DL1	350743206DL1	43206D10.D	10/31/12	1016	9.59	5.94		

			QC LIMITS
S1	=	p-Terphenyl-d14	(+/- 0.64 MINUTES)
S2	=	2-Fluorobiphenyl	(+/- 0.39 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151250LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
1-Methylnaphthalene	0.5	0.4	80.0			68 - 115
2-Methylnaphthalene	0.5	0.38	76.0			47 - 121
Acenaphthene	0.5	0.4	80.0			64 - 110
Acenaphthylene	0.5	0.4	80.0			45 - 115
Anthracene	0.5	0.42	84.0			61 - 108
Benzo(a)anthracene	0.5	0.44	88.0			53 - 110
Benzo(a)pyrene	0.5	0.44	88.0			55 - 109
Benzo(b)fluoranthene	0.5	0.44	88.0			65 - 110
Benzo(g,h,i)perylene	0.5	0.42	84.0			68 - 115
Benzo(k)fluoranthene	0.5	0.41	82.0			70 - 111
Chrysene	0.5	0.42	84.0			71 - 115
Dibenzo(a,h)anthracene	0.5	0.46	92.0			60 - 104
Fluoranthene	0.5	0.43	86.0			63 - 114
Fluorene	0.5	0.4	80.0			59 - 120
Indeno(1,2,3-cd)pyrene	0.5	0.44	88.0			66 - 110
Naphthalene	0.5	0.39	78.0			68 - 125
Phenanthrene	0.5	0.42	84.0			31 - 147
Pyrene	0.5	0.41	82.0			59 - 120

Spike Recovery: 0 out of 18 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1341

Form III

8270 SIM Standards Data

131112 1341

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 909 End: 1245

Min RRF for SPCC(#) = N/A Max %RSD for CCC(*) = 15 %

LAB FILE ID: RRF0.02 =SIMCAL1.D RRF0.05 =SIMCAL2.D
RRF0.07 =SIMCAL3.D RRF0.1 =SIMCAL4.D RRF0.2 =SIMCAL5.D

COMPOUND	RRF0.02	RRF0.05	RRF0.07	RRF0.1	RRF0.2	$\overline{RRF}$	%RSD OR R^2	RSD
1-Methylnaphthalene	0.761	0.882	0.894	0.946	0.860			
2-Methylnaphthalene	0.587	0.700	0.652	0.742	0.676			
Acenaphthene	* 1.286	1.418	1.312	1.479	1.352		*	
Acenaphthylene	1.816	1.920	1.899	2.003	1.900			
Anthracene	0.898	0.994	0.831	0.990	1.007			
Benzo(a)anthracene	1.026	0.929	0.866	0.966	0.911			
Benzo(a)pyrene	* 0.864	0.909	0.831	1.040	0.993		*	
Benzo(b)fluoranthene	0.895	0.956	0.957	0.988	0.933			
Benzo(g,h,i)perylene	1.044	1.078	1.023	1.166	1.036			
Benzo(k)fluoranthene	1.708	1.562	1.487	1.707	1.612			
Chrysene	1.357	1.469	1.331	1.490	1.411			
Dibenzo(a,h)anthracene	0.800	0.835	0.802	0.973	0.885			
Fluoranthene	* 1.079	1.178	1.115	1.242	1.173		*	
Fluorene	1.517	1.664	1.553	1.610	1.592			
Indeno(1,2,3-cd)pyrene	1.059	1.084	1.073	1.190	1.140			
Naphthalene	1.203	1.197	1.139	1.231	1.112			
Phenanthrene	1.108	1.129	1.075	1.159	1.106			
Pyrene	1.261	1.289	1.227	1.406	1.271			
==========								
p-Terphenyl-d14(SURR)	0.854	0.868	0.837	0.936	0.899			
2-Fluorobiphenyl(SURR)	1.479	1.560	1.381	1.640	1.556			

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD01 Calibration Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 909 End: 1245

Min RRF for SPCC(#) = N/A Max %RSD for CCC(*) = 15 %

LAB FILE ID: RRF0.5 =SIMCAL6.D RRF0.7 =SIMCAL7.D
RRF1 =SIMCAL8.D RRF5 =SIMCAL9.D RRF10 =SIMCAL10.D

COMPOUND	RRF0.5	RRF0.7	RRF1	RRF5	RRF10	$\overline{RRF}$	%RSD OR R^2	RSD
1-Methylnaphthalene	0.888	0.854	0.887	0.730	0.752	0.8455	8.5	
2-Methylnaphthalene	0.722	0.720	0.765	0.790	0.816	0.7171	9.4	
Acenaphthene	* 1.401	1.372	1.421	1.429	1.472	1.39413	4.6	*
Acenaphthylene	2.005	1.971	2.045	2.134	2.267	1.99594	6.5	
Anthracene	1.089	1.076	1.138	1.228	1.258	1.05101	12.9	
Benzo(a)anthracene	0.928	0.933	1.010	1.117	1.186	0.98732	10.1	
Benzo(a)pyrene	* 1.061	1.078	1.159	1.258	1.294	1.04857	14.9	*
Benzo(b)fluoranthene	1.119	1.134	1.133	1.293	1.327	1.07352	14.2	
Benzo(g,h,i)perylene	1.107	1.135	1.179	1.264	1.282	1.13142	8.1	
Benzo(k)fluoranthene	1.528	1.490	1.660	1.536	1.535	1.5826	5.3	
Chrysene	1.434	1.412	1.445	1.279	1.261	1.38897	5.7	
Dibenzo(a,h)anthracene	0.981	1.000	1.090	1.207		0.95264	14.4	
Fluoranthene	* 1.253	1.260	1.315	1.361	1.388	1.23649	8.2	*
Fluorene	1.673	1.603	1.718	1.769	1.799	1.64974	5.6	
Indeno(1,2,3-cd)pyrene	1.223	1.241	1.328	1.440	1.483	1.22614	12.2	
Naphthalene	1.136	1.134	1.185	1.203	1.198	1.17395	3.4	
Phenanthrene	1.163	1.158	1.206	1.222	1.230	1.15565	4.5	
Pyrene	1.297	1.272	1.349	1.290	1.325	1.29884	3.9	
==========								
p-Terphenyl-d14(SURR)	0.928	0.894	0.949	0.900	0.919	0.89827	4.1	
2-Fluorobiphenyl(SURR)	1.653	1.564	1.669	1.605	1.613	1.57199	5.6	

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FORM VI

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD01 CalibrationDate: 10/30/12 Time: 1309

CCV ID: SSC1129169 Lab File ID: SIMSEC.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = N/A Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
1-Methylnaphthalene		0.8455	0.94537	11.8	AVRG	
2-Methylnaphthalene		0.7171	0.58769	18.0	AVRG	
Acenaphthene	*	1.39413	1.365	2.1	AVRG	*
Acenaphthylene		1.99594	1.949	2.4	AVRG	
Anthracene		1.05101	1.005	4.4	AVRG	
Benzo(a)anthracene		0.98732	0.90189	8.7	AVRG	
Benzo(a)pyrene	*	1.04857	1.054	0.5	AVRG	*
Benzo(b)fluoranthene		1.07352	1.089	1.4	AVRG	
Benzo(g,h,i)perylene		1.13142	1.142	0.9	AVRG	
Benzo(k)fluoranthene		1.5826	1.582	0.0	AVRG	
Chrysene		1.38897	1.495	7.6	AVRG	
Dibenzo(a,h)anthracene		0.95264	0.98043	2.9	AVRG	
Fluoranthene	*	1.23649	1.31	5.9	AVRG	*
Fluorene		1.64974	1.615	2.1	AVRG	
Indeno(1,2,3-cd)pyrene		1.22614	1.233	0.6	AVRG	
Naphthalene		1.17395	1.188	1.2	AVRG	
Phenanthrene		1.15565	1.159	0.3	AVRG	
Pyrene		1.29884	1.276	1.8	AVRG	
==========						
p-Terphenyl-d14(SURR)		0.89827	0.88607	1.4	AVRG	
2-Fluorobiphenyl(SURR)		1.57199	1.494	5.0	AVRG	

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FORM VII

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD01 CalibrationDate: 10/30/12 Time: 1350

CCV ID: CCV1129166 Lab File ID: SIMCCV1.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = N/A Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
1-Methylnaphthalene		0.8455	0.8359	1.1	AVRG	
2-Methylnaphthalene		0.7171	0.70203	2.1	AVRG	
Acenaphthene	*	1.39413	1.364	2.2	AVRG	*
Acenaphthylene		1.99594	1.899	4.9	AVRG	
Anthracene		1.05101	1.041	1.0	AVRG	
Benzo(a)anthracene		0.98732	0.89382	9.5	AVRG	
Benzo(a)pyrene	*	1.04857	1.04	0.8	AVRG	*
Benzo(b)fluoranthene		1.07352	1.077	0.3	AVRG	
Benzo(g,h,i)perylene		1.13142	1.094	3.3	AVRG	
Benzo(k)fluoranthene		1.5826	1.509	4.7	AVRG	
Chrysene		1.38897	1.455	4.8	AVRG	
Dibenzo(a,h)anthracene		0.95264	0.97648	2.5	AVRG	
Fluoranthene	*	1.23649	1.221	1.3	AVRG	*
Fluorene		1.64974	1.597	3.2	AVRG	
Indeno(1,2,3-cd)pyrene		1.22614	1.202	2.0	AVRG	
Naphthalene		1.17395	1.138	3.1	AVRG	
Phenanthrene		1.15565	1.145	0.9	AVRG	
Pyrene		1.29884	1.242	4.4	AVRG	
==========						
p-Terphenyl-d14(SURR)		0.89827	0.89111	0.8	AVRG	
2-Fluorobiphenyl(SURR)		1.57199	1.583	0.7	AVRG	

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FORM VII

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD01 CalibrationDate: 10/31/12 Time: 0815

CCV ID: CCV1129168 Lab File ID: SIMCCV2.D Init. Calib. Date Begin: 10/30/12 End: 10/30/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = N/A Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
1-Methylnaphthalene		0.8455	0.88737	5.0	AVRG	
2-Methylnaphthalene		0.7171	0.72945	1.7	AVRG	
Acenaphthene	*	1.39413	1.387	0.5	AVRG	*
Acenaphthylene		1.99594	2.038	2.1	AVRG	
Anthracene		1.05101	1.134	7.9	AVRG	
Benzo(a)anthracene		0.98732	0.99953	1.2	AVRG	
Benzo(a)pyrene	*	1.04857	1.104	5.3	AVRG	*
Benzo(b)fluoranthene		1.07352	1.109	3.3	AVRG	
Benzo(g,h,i)perylene		1.13142	1.138	0.6	AVRG	
Benzo(k)fluoranthene		1.5826	1.434	9.4	AVRG	
Chrysene		1.38897	1.405	1.2	AVRG	
Dibenzo(a,h)anthracene		0.95264	1.123	17.9	AVRG	
Fluoranthene	*	1.23649	1.29	4.3	AVRG	*
Fluorene		1.64974	1.682	2.0	AVRG	
Indeno(1,2,3-cd)pyrene		1.22614	1.31	6.8	AVRG	
Naphthalene		1.17395	1.138	3.1	AVRG	
Phenanthrene		1.15565	1.146	0.8	AVRG	
Pyrene		1.29884	1.271	2.1	AVRG	
==========						
p-Terphenyl-d14(SURR)		0.89827	0.8992	0.1	AVRG	
2-Fluorobiphenyl(SURR)		1.57199	1.605	2.1	AVRG	

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FORM VII

8270 Semi-Volatile Organics

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Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW8270D.

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510 for 8270 semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met with the exception of:

Kepone exceeded the Max % RSD of 15% (35.9%) for the initial calibration. This compound has historically been a poor performer. No further action was taken, since this compound was not detected in any samples.

SSC1124049 was the second source verification standard analyzed with the initial calibration on 10/11/12. The %D was over the 20% limit for the following compounds: 1,3-Dinitrobenzene (+21.4%), 4-Nitroquinoline-1-oxide (+24%), Methapyriline (-29.8%), Aramite (-24.9%), 1,3,5-Trinitrobenzene (-43.6%), Kepone (+78.1%). No further action was taken, since these compounds were not detected in any samples and were a result of a discrepancy between the primary and secondary standards.

CCV1129934 was analyzed with the water samples on 10/31/12. The %D was over the 20% limit for the following compounds: Safrole (+21.1%), Kepone (+76.3%). No further action was taken, since these compounds were not detected in any samples.

B. Blanks:

All acceptance criteria were met.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:

LCS 151400LCS was analyzed with the water samples extracted on 10/31/02. The following analytes were recovered above criteria: 1,3-Dinitrobenzene at 120 % with criteria of (61-112), 2-Chloronaphthalene at 107 % with criteria of (50-105), Chlorobenzilate at 103 % with criteria of (58-101), Pentachloronitrobenzene (PCNB) at 108 % with criteria of (60-104), Safrole at 113 % with criteria of (52-100). Since these compounds were recovered only slightly above criteria, no further action was taken. The following analytes had marginal exceedance limit failures: a,a-Dimethylphenethylamine at 0 % with criteria of (60-140), Safrole at 113 % with criteria of (44-108). No further action was taken. None of these compounds were detected in any samples.

Samples coded accordingly.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

All acceptance criteria were met.

F. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

CASE NARRATIVE
Semi-Volatile Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

Signature:

Name: Brian C. Spanh Title: Lab Director

SIGNED: DATE: 11/07/2012

SEMI-VOLATILE ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Method: 8270

EPA Sample No	Lab Sample ID
Q2-TFS-MW-05	350743201
Q2-TFS-MW-12	350743202
Q2-TFS-MW-01	350743203
Q2-TFS-MW-8D	350743205
Q2-TFS-MW-04	350743206
Q2-TFS-MW-16	350743207

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8270 Sample Data

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1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 43201.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2147

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 43202.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2210

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 43203.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2234

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 43205.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2257

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 43206.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2321

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6.1	U	3	6.1	6.1
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.5	U	2.7	5.5	5.5
106-46-7	1,4-Dichlorobenzene	5.5	U	2.7	5.5	5.5
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.3	U	3.1	6.3	10.1
108-60-1	2,2'-Oxybis(1-chloropropane)	6.7	U	3.3	6.7	6.7
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6.1	U	3	6.1	6.1
106-44-5	4-Methylphenol	12.3	U	6.2	12.3	12.3
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.7	U	3.8	7.7	7.7
88-75-5	2-Nitrophenol	1.6	U	0.78	1.6	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7.1	U	3.5	7.1	7.1
120-83-2	2,4-Dichlorophenol	6.3	U	3.1	6.3	6.3
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6.1	U	3	6.1	6.1
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.5	U	2.7	5.5	5.5
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.83	1.6	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.85	1.7	4
95-95-4	2,4,5-Trichlorophenol	6.9	U	3.4	6.9	6.9
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6.1	U	3	6.1	6.1
131-11-3	Dimethylphthalate	6.1	U	3	6.1	6.1
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.3	U	5.6	11.3	20.2
132-64-9	Dibenzofuran	5.5	U	2.7	5.5	5.5
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8.1	U	4	8.1	8.1
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8.1	U	4	8.1	8.1
86-30-6	N-Nitrosodiphenylamine	6.9	U	3.4	6.9	6.9
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.83	U	0.41	0.83	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10.1
84-74-2	Di-n-butylphthalate	1.7	U	0.87	1.7	4
85-68-7	Butylbenzylphthalate	6.1	U	3	6.1	6.1
91-94-1	3,3'-Dichlorobenzidine	5.5	U	2.7	5.5	5.5
117-81-7	Bis(2-ethylhexyl)phthalate	8.9	U	4.4	8.9	8.9
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8.1	U	4	8.1	8.1
10595-95-6	N-Nitrosomethylethylamine	5.5	U	2.7	5.5	5.5

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
55-18-5	N-Nitrosodiethylamine	6.3	U	3.1	6.3	6.3
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20.2
930-55-2	N-Nitrosopyrrolidine	5.5	U	2.7	5.5	5.5
98-86-2	Acetophenone	8.1	U	4	8.1	8.1
59-89-2	N-Nitrosomorpholine	6.1	U	3	6.1	6.1
95-53-4	o-Toluidine	5.5	U	2.7	5.5	5.5
122-09-8	a,a-Dimethylphenethylamine	32.3	U	16.2	32.3	32.3
87-65-0	2,6-Dichlorophenol	7.1	U	3.5	7.1	7.1
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.5	U	2.7	5.5	5.5
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.3	U	3.1	6.3	6.3
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6.1	U	3	6.1	6.1
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.9	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.82	1.6	4

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SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 43207.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 2345

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8.1	U	4	8.1	8.1
56-57-5	4-Nitroquinoline-1-oxide	7.5	U	3.7	7.5	10.1
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8.1	U	4	8.1	8.1
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.63	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.97	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.85	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.79	1.6	4
143-50-0	Kepone	32.3	U	16.2	32.3	32.3
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

8270 QC Summary

131112 1341

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
110-86-1	Pyridine	4.2	U	2.1	4.2	4.2
62-75-9	N-Nitrosodimethylamine	4.4	U	2.2	4.4	4.4
62-53-3	Aniline	5.6	U	2.8	5.6	5.6
111-44-4	Bis(2-chloroethyl)ether	6	U	3	6	6
108-95-2	Phenol	3.4	U	1.7	3.4	4
95-57-8	2-Chlorophenol	5.8	U	2.9	5.8	5.8
541-73-1	1,3-Dichlorobenzene	5.4	U	2.7	5.4	5.4
106-46-7	1,4-Dichlorobenzene	5.4	U	2.7	5.4	5.4
95-50-1	1,2-Dichlorobenzene	5.2	U	2.6	5.2	5.2
100-51-6	Benzyl alcohol	6.2	U	3.1	6.2	10
108-60-1	2,2'-Oxybis(1-chloropropane)	6.6	U	3.3	6.6	6.6
95-48-7	2-Methylphenol	5.2	U	2.6	5.2	5.2
67-72-1	Hexachloroethane	5.2	U	2.6	5.2	5.2
621-64-7	N-Nitroso-di-n-propylamine	6	U	3	6	6
106-44-5	4-Methylphenol	12.2	U	6.1	12.2	12.2
98-95-3	Nitrobenzene	2	U	1	2	4
78-59-1	Isophorone	7.6	U	3.8	7.6	7.6
88-75-5	2-Nitrophenol	1.5	U	0.77	1.5	4
105-67-9	2,4-Dimethylphenol	4.6	U	2.3	4.6	4.6
111-91-1	Bis(2-chloroethoxy)methane	7	U	3.5	7	7
120-83-2	2,4-Dichlorophenol	6.2	U	3.1	6.2	6.2
120-82-1	1,2,4-Trichlorobenzene	5.2	U	2.6	5.2	5.2
106-47-8	4-Chloroaniline	6	U	3	6	6
87-68-3	Hexachlorobutadiene	5	U	2.5	5	5
59-50-7	4-Chloro-3-methylphenol	5.4	U	2.7	5.4	5.4
77-47-4	Hexachlorocyclopentadiene	1.6	U	0.82	1.6	4
88-06-2	2,4,6-Trichlorophenol	1.7	U	0.84	1.7	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
95-95-4	2,4,5-Trichlorophenol	6.8	U	3.4	6.8	6.8
91-58-7	2-Chloronaphthalene	5.6	U	2.8	5.6	5.6
88-74-4	2-Nitroaniline	6	U	3	6	6
131-11-3	Dimethylphthalate	6	U	3	6	6
606-20-2	2,6-Dinitrotoluene	5.6	U	2.8	5.6	5.6
99-09-2	3-Nitroaniline	5.6	U	2.8	5.6	5.6
51-28-5	2,4-Dinitrophenol	11.2	U	5.6	11.2	20
132-64-9	Dibenzofuran	5.4	U	2.7	5.4	5.4
121-14-2	2,4-Dinitrotoluene	5.6	U	2.8	5.6	5.6
100-02-7	4-Nitrophenol	8	U	4	8	8
7005-72-3	4-Chlorophenyl-phenylether	5	U	2.5	5	5
84-66-2	Diethylphthalate	5.6	U	2.8	5.6	5.6
100-01-6	4-Nitroaniline	3	U	1.5	3	4
534-52-1	4,6-Dinitro-2-methylphenol	8	U	4	8	8
86-30-6	N-Nitrosodiphenylamine	6.8	U	3.4	6.8	6.8
101-55-3	4-Bromophenyl-phenylether	4.6	U	2.3	4.6	4.6
118-74-1	Hexachlorobenzene	0.82	U	0.41	0.82	4
87-86-5	Pentachlorophenol	2.8	U	1.4	2.8	10
84-74-2	Di-n-butylphthalate	1.7	U	0.86	1.7	4
85-68-7	Butylbenzylphthalate	6	U	3	6	6
91-94-1	3,3'-Dichlorobenzidine	5.4	U	2.7	5.4	5.4
117-81-7	Bis(2-ethylhexyl)phthalate	8.8	U	4.4	8.8	8.8
117-84-0	Di-n-octylphthalate	4	U	2	4	4
109-06-8	2-Picoline	8	U	4	8	8
10595-95-6	N-Nitrosomethylethylamine	5.4	U	2.7	5.4	5.4
55-18-5	N-Nitrosodiethylamine	6.2	U	3.1	6.2	6.2
66-27-3	Methylmethanesulfonate	3.8	U	1.9	3.8	4

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
62-50-0	Ethyl methanesulfonate	5	U	2.5	5	5
76-01-7	Pentachloroethane	5	U	2.5	5	20
930-55-2	N-Nitrosopyrrolidine	5.4	U	2.7	5.4	5.4
98-86-2	Acetophenone	8	U	4	8	8
59-89-2	N-Nitrosomorpholine	6	U	3	6	6
95-53-4	o-Toluidine	5.4	U	2.7	5.4	5.4
122-09-8	a,a-Dimethylphenethylamine	32	U	16	32	32
87-65-0	2,6-Dichlorophenol	7	U	3.5	7	7
1888-71-7	Hexachloropropene	4	U	2	4	4
924-16-3	N-Nitrosodibutylamine	5.4	U	2.7	5.4	5.4
120-58-1	Isosafrole	5.2	U	2.6	5.2	5.2
95-94-3	1,2,4,5-Tetrachlorobenzene	4.4	U	2.2	4.4	4.4
94-59-7	Safrole	5	U	2.5	5	5
130-15-4	1,4-Naphthoquinone	6.2	U	3.1	6.2	6.2
99-65-0	1,3-Dinitrobenzene	5	U	2.5	5	5
608-93-5	Pentachlorobenzene	4.4	U	2.2	4.4	4.4
134-32-7	1-Naphthylamine	3.6	U	1.8	3.6	4
91-59-8	2-Naphthylamine	5	U	2.5	5	5
58-90-2	2,3,4,6-Tetrachlorophenol	6	U	3	6	6
99-55-8	5-Nitro-o-toluidine	5.2	U	2.6	5.2	5.2
106-50-3	p-Phenylenediamine	4	U	2	4	4
62-44-2	Phenacetin	1.8	U	0.89	1.8	4
92-67-1	4-Aminobiphenyl	4	U	2	4	4
23950-58-5	Pronamide	1.6	U	0.81	1.6	4
82-68-8	Pentachloronitrobenzene(PCNB)	4	U	2	4	4
88-85-7	Dinoseb	8	U	4	8	8
56-57-5	4-Nitroquinoline-1-oxide	7.4	U	3.7	7.4	10

1

SEMI-VOLATILE ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151399MB Lab File ID: 11388MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/31/12

Concentrated Extract Volume: 1 Date Extracted: 10/31/12

Level:(low/med) LOW Date Analyzed: 10/31/12 Time: 1727

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: 8270

GPC Cleanup : (Y/N) N pH:

Column(1): HPMS-5 ID: 0.25 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
91-80-5	Methapyriline	4.4	U	2.2	4.4	4.4
140-57-8	Aramite	8	U	4	8	8
60-11-7	p-Dimethylaminoazobenzene	1.2	U	0.62	1.2	4
53-96-3	2-Acetylaminofluorene	2.2	U	1.1	2.2	4
57-97-6	7,12-Dimethylbenz(a)anthracene	1.9	U	0.96	1.9	4
56-49-5	3-Methylcholanthrene	4.4	U	2.2	4.4	4.4
100-75-4	N-Nitrosopiperidine	5.6	U	2.8	5.6	5.6
99-35-4	1,3,5-Trinitrobenzene	4	U	2	4	4
2303-16-4	Diallate (Avadex)	1.7	U	0.84	1.7	4
465-73-6	Isodrin	5.2	U	2.6	5.2	5.2
510-15-6	Chlorobenzilate	1.6	U	0.78	1.6	4
143-50-0	Kepone	32	U	16	32	32
126-68-1	0,0,0-Triethylphosphorothioate	5.8	U	2.9	5.8	5.8

4

SEMI-VOLATILE ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151399MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID: 11388MB.D Lab Sample ID: 151399MB

Instrument ID: SMSD03 Date Extracted: 10/31/12

Matrix: WATER Date Analyzed: 10/31/12

Level:(low/med) LOW Time Analyzed: 1727

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151400LCS	151400LCS	11388LCS.D	10/31/12	1751
2	Q2-TFS-MW-05	350743201	43201.D	10/31/12	2147
3	Q2-TFS-MW-12	350743202	43202.D	10/31/12	2210
4	Q2-TFS-MW-01	350743203	43203.D	10/31/12	2234
5	Q2-TFS-MW-8D	350743205	43205.D	10/31/12	2257
6	Q2-TFS-MW-04	350743206	43206.D	10/31/12	2321
7	Q2-TFS-MW-16	350743207	43207.D	10/31/12	2345

COMMENTS:

Page 1 of 1

131112 1341

Form IV

2A

WATER SEMI-VOLATILE ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507432

Column(1): HPMS-5 ID: 0.25 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
151399MB	56.7	34.6	81.6	94.8	106.0	82.4	0
151400LCS	52.7	33.6	86.6	102.0	102.0	87.0	0
Q2-TFS-MW-01	55.7	36.5	110.0	85.3	110.0	86.3	0
Q2-TFS-MW-04	65.0	40.8	82.0	82.2	121.0	84.4	0
Q2-TFS-MW-05	55.3	33.5	78.8	92.5	97.1	85.3	0
Q2-TFS-MW-12	62.5	35.6	69.9	86.1	106.0	83.0	0
Q2-TFS-MW-16	51.4	32.5	91.1	82.6	106.0	97.2	0
Q2-TFS-MW-8D	54.2	37.9	80.6	93.3	102.0	80.8	0

Control Limits

S1	=	2-Fluorophenol	20 -	110
S2	=	Phenol-d5	10 -	115
S3	=	Nitrobenzene-d5	40 -	110
S4	=	2-Fluorobiphenyl	50 -	110
S5	=	2,4,6-Tribromophenol	40 -	125
S6	=	p-Terphenyl-d14	50 -	135

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out
Control limit source: (lab/method) METHOD

Form II

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: DFTPP3.D DFTPP Injection Date: 10/11/12

Instrument ID: SMSD03 DFTPP Injection Time: 1255

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	32.6	
68	Less than 2.0% of mass 69	0.2	(0.42)1
69	Mass 69 relative abundance	39.5	
70	Less than 2.0% of mass 69	0	(0)1
127	10.0 - 80.0% of mass 198	48.6	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	7	
275	10.0 - 60.0% of mass 198	24.3	
365	Greater than 1.0% of mass 198	2.5	
441	0.0 - 24.0% of mass 442	11.3	(15.03)2
442	Greater than 50.0% of mass 198	75.4	
443	15.0 - 24.0% of mass 442	14.6	(19.43)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	STD1124035	47763	8270CAL7.D	10/11/12	1315
2	STD1124034	47764	8270CAL6.D	10/11/12	1339
3	STD1124033	47765	8270CAL5.D	10/11/12	1403
4	STD1124032	47766	8270CAL4.D	10/11/12	1426
5	STD1124031	47767	8270CAL3.D	10/11/12	1450
6	STD1124030	47768	8270CAL2.D	10/11/12	1514
7	STD1124029	47769	8270CAL1.D	10/11/12	1537
8	SSC1124039	47770	8270SEC.D	10/11/12	1601
9	STD1124057	47885	BSCAL7.D	10/11/12	1625
10	STD1124056	47962	BSCAL6.D	10/11/12	1649
11	STD1124055	47964	BSCAL5.D	10/11/12	1713
12	STD1124054	47965	BSCAL4.D	10/11/12	1736
13	STD1124053	47966	BSCAL3.D	10/11/12	1800
14	STD1124052	47967	BSCAL2.D	10/11/12	1824
15	STD1124051	47968	BSCAL1.D	10/11/12	1848
16	SSC1124059	47969	BSSEC.D	10/11/12	1912
17	STD1124046	47933	AP9CAL7.D	10/11/12	1935
18	STD1124045	47934	AP9CAL6.D	10/11/12	1959
19	STD1124044	47935	AP9CAL5.D	10/11/12	2023

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: DFTPP3.D DFTPP Injection Date: 10/11/12

Instrument ID: SMSD03 DFTPP Injection Time: 1255

GC Column: HPMS-5 ID: 0.25 (mm)

20	STD1124043	47936	AP9CAL4.D	10/11/12	2046
21	STD1124042	47937	AP9CAL3.D	10/11/12	2110
22	STD1124041	47938	AP9CAL2.D	10/11/12	2133
23	STD1124040	47939	AP9CAL1.D	10/11/12	2157
24	SSC1124049	47943	AP9SEC.D	10/11/12	2220

SEMIVOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - DECAFLUOROTRIPHENYLPHOSPHINE (DFTPP)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Lab File ID: DFTPP2.D DFTPP Injection Date: 10/31/12

Instrument ID: SMSD03 DFTPP Injection Time: 1532

GC Column: HPMS-5 ID: 0.25 (mm)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
51	10.0 - 80.0% of mass 198	27.6	
68	Less than 2.0% of mass 69	0	(0)1
69	Mass 69 relative abundance	33.8	
70	Less than 2.0% of mass 69	0	(0)1
127	10.0 - 80.0% of mass 198	46.3	
197	Less than 2.0% of mass 198	0	
198	Base Peak, 100% relative abundance	100	
199	5.0 - 9.0% of mass 198	6.6	
275	10.0 - 60.0% of mass 198	25.6	
365	Greater than 1.0% of mass 198	2.7	
441	0.0 - 24.0% of mass 442	12.8	(14.03)2
442	Greater than 50.0% of mass 198	91.3	
443	15.0 - 24.0% of mass 442	17.6	(19.25)2

1-Value is % of mass 69

2-Value is % of mass 442

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	CCV1129929	47766	8270CCV4.D	10/31/12	1615
2	CCV1129935	47965	BSCCV1.D	10/31/12	1639
3	CCV1129934	47936	AP9CCV1.D	10/31/12	1703
4	151399MB	151399MB	11388MB.D	10/31/12	1727
5	151400LCS	151400LCS	11388LCS.D	10/31/12	1751
6	Q2-TFS-MW-05	350743201	43201.D	10/31/12	2147
7	Q2-TFS-MW-12	350743202	43202.D	10/31/12	2210
8	Q2-TFS-MW-01	350743203	43203.D	10/31/12	2234
9	Q2-TFS-MW-8D	350743205	43205.D	10/31/12	2257
10	Q2-TFS-MW-04	350743206	43206.D	10/31/12	2321
11	Q2-TFS-MW-16	350743207	43207.D	10/31/12	2345

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID (Standard): 8270CAL4.D Date Analyzed: 10/11/2012

Instrument ID: SMSD03 Time Analyzed: 14:26

GC Column: HPMS-5 ID: 0.25 (mm)

		IS1 AREA	#	RT	IS2 AREA	#	RT	IS3 AREA	#	RT
	MID CAL STD	264318		4.54	982340		5.70	584218		7.40
	UPPER LIMIT	528636		5.04	1964680		6.20	1168436		7.90
	LOWER LIMIT	132159		4.04	491170		5.20	292109		6.90
	EPA SAMPLE NO.									
1	151399MB	304167		4.53	1006118		5.69	615332		7.38
2	151400LCS	362685		4.53	1096590		5.69	653905		7.38
3	Q2-TFS-MW-05	336770		4.53	1120470		5.69	687325		7.38
4	Q2-TFS-MW-12	334810		4.53	1410015		5.69	705378		7.38
5	Q2-TFS-MW-01	367930		4.53	1178964		5.69	696369		7.39
6	Q2-TFS-MW-8D	369791		4.53	1155121		5.69	696433		7.38
7	Q2-TFS-MW-04	307884		4.53	1089759		5.69	676587		7.39
8	Q2-TFS-MW-16	354648		4.53	1139370		5.69	683852		7.38

IS1 = 1,4-Dichlorobenzene-d4

IS2 = Naphthalene-d8

IS3 = Acenaphthene-d10

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1341

FORM VIII

8A

SEMI-VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID (Standard): 8270CAL4.D Date Analyzed: 10/11/2012

Instrument ID: SMSD03 Time Analyzed: 14:26

GC Column: HPMS-5 ID: 0.25 (mm)

		IS4 AREA	#	RT	IS5 AREA	#	RT	IS6 AREA	#	RT
	MID CAL STD	939810		8.85	1092640		11.45	1073524		12.79
	UPPER LIMIT	1879620		9.35	2185280		11.95	2147048		13.29
	LOWER LIMIT	469905		8.35	546320		10.95	536762		12.29
	EPA SAMPLE NO.									
1	151399MB	1016587		8.84	1173987		11.43	1116689		12.77
2	151400LCS	1058304		8.84	1321820		11.44	1268653		12.77
3	Q2-TFS-MW-05	1101903		8.84	1452159		11.43	1299833		12.77
4	Q2-TFS-MW-12	1171500		8.84	1430107		11.43	1591195		12.77
5	Q2-TFS-MW-01	1183551		8.84	1403837		11.43	1340237		12.77
6	Q2-TFS-MW-8D	1155867		8.84	1385914		11.43	1370975		12.77
7	Q2-TFS-MW-04	1139118		8.84	1384113		11.43	1303965		12.77
8	Q2-TFS-MW-16	1365211		8.84	1419673		11.43	1383102		12.77

IS4 = Phenanthrene-d10

IS5 = Chrysene-d12

IS6 = Perylene-d12

UPPER LIMIT = +100% of internal standard area.
LOWER LIMIT = -50% of internal standard area

Column used to flag internal standard area values with an asterisk

131112 1341

FORM VIII

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/11/12

Instrument ID: SMSD03

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.45 S2 : 4.2 S3 : 5.03 S4 : 6.73

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	DFTPP3	47701	DFTPP3.D	10/11/12	1255				
2	STD1124035	47763	8270CAL7.D	10/11/12	1315	3.46	4.21	5.04	6.74
3	STD1124034	47764	8270CAL6.D	10/11/12	1339	3.45	4.21	5.04	6.74
4	STD1124033	47765	8270CAL5.D	10/11/12	1403	3.45	4.2	5.03	6.74
5	STD1124032	47766	8270CAL4.D	10/11/12	1426	3.45	4.2	5.03	6.73
6	STD1124031	47767	8270CAL3.D	10/11/12	1450	3.45	4.2	5.03	6.73
7	STD1124030	47768	8270CAL2.D	10/11/12	1514	3.45	4.2	5.03	6.73
8	STD1124029	47769	8270CAL1.D	10/11/12	1537	3.45	4.19	5.03	6.73
9	SSC1124039	47770	8270SEC.D	10/11/12	1601	3.45	4.2	5.03	6.73
10	STD1124057	47885	BSCAL7.D	10/11/12	1625				
11	STD1124056	47962	BSCAL6.D	10/11/12	1649				
12	STD1124055	47964	BSCAL5.D	10/11/12	1713				
13	STD1124054	47965	BSCAL4.D	10/11/12	1736				
14	STD1124053	47966	BSCAL3.D	10/11/12	1800				
15	STD1124052	47967	BSCAL2.D	10/11/12	1824				
16	STD1124051	47968	BSCAL1.D	10/11/12	1848				
17	SSC1124059	47969	BSSEC.D	10/11/12	1912				
18	STD1124046	47933	AP9CAL7.D	10/11/12	1935				
19	STD1124045	47934	AP9CAL6.D	10/11/12	1959				
20	STD1124044	47935	AP9CAL5.D	10/11/12	2023				
21	STD1124043	47936	AP9CAL4.D	10/11/12	2046				
22	STD1124042	47937	AP9CAL3.D	10/11/12	2110				
23	STD1124041	47938	AP9CAL2.D	10/11/12	2133				
24	STD1124040	47939	AP9CAL1.D	10/11/12	2157				
25	SSC1124049	47943	AP9SEC.D	10/11/12	2220				
26	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/11/12	2244				

QC LIMITS

S1	=	2-Fluorophenol	(+/- 0.27 MINUTES)
S2	=	Phenol-d5	(+/- 0.27 MINUTES)
S3	=	Nitrobenzene-d5	(+/- 0.34 MINUTES)
S4	=	2-Fluorobiphenyl	(+/- 0.44 MINUTES)
S5	=	2,4,6-Tribromophenol	(+/- 0.44 MINUTES)
S6	=	p-Terphenyl-d14	(+/- 0.69 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/11/12

Instrument ID: SMSD03

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.45 S2 : 4.2 S3 : 5.03 S4 : 6.73

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1356				
28	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1417				
29	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1440				
30	DFTPP2	47701	DFTPP2.D	10/31/12	1532				
31	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1552				
32	CCV1129929	47766	8270CCV4.D	10/31/12	1615	3.44	4.19	5.02	6.72
33	CCV1129935	47965	BSCCV1.D	10/31/12	1639				
34	CCV1129934	47936	AP9CCV1.D	10/31/12	1703				
35	151399MB	151399MB	11388MB.D	10/31/12	1727	3.44	4.18	5.02	6.72
36	151400LCS	151400LCS	11388LCS.D	10/31/12	1751	3.44	4.18	5.02	6.72
37	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1814				
38	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1838				
39	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1902				
40	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1925				
41	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	1949				
42	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2012				
43	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2036				
44	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2059				
45	ZZZZZZ	ZZZZZZ	ZZZZZZ	10/31/12	2123				
46	Q2-TFS-MW-05	350743201	43201.D	10/31/12	2147	3.44	4.19	5.02	6.72
47	Q2-TFS-MW-12	350743202	43202.D	10/31/12	2210	3.44	4.18	5.02	6.72
48	Q2-TFS-MW-01	350743203	43203.D	10/31/12	2234	3.44	4.19	5.02	6.72
49	Q2-TFS-MW-8D	350743205	43205.D	10/31/12	2257	3.44	4.19	5.02	6.72
50	Q2-TFS-MW-04	350743206	43206.D	10/31/12	2321	3.44	4.19	5.02	6.72
51	Q2-TFS-MW-16	350743207	43207.D	10/31/12	2345	3.44	4.19	5.02	6.72
52	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	0008				

			QC LIMITS
S1	=	2-Fluorophenol	(+/- 0.27 MINUTES)
S2	=	Phenol-d5	(+/- 0.27 MINUTES)
S3	=	Nitrobenzene-d5	(+/- 0.34 MINUTES)
S4	=	2-Fluorobiphenyl	(+/- 0.44 MINUTES)
S5	=	2,4,6-Tribromophenol	(+/- 0.44 MINUTES)
S6	=	p-Terphenyl-d14	(+/- 0.69 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

8

SEMI-VOLATILE ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: HPMS-5 ID: 0.25 (mm) Init. Calib. Date: 10/11/12

Instrument ID: SMSD03

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.45 S2 : 4.2 S3 : 5.03 S4 : 6.73

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
53	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	0032				
54	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	0055				

			QC LIMITS
S1	=	2-Fluorophenol	(+/- 0.27 MINUTES)
S2	=	Phenol-d5	(+/- 0.27 MINUTES)
S3	=	Nitrobenzene-d5	(+/- 0.34 MINUTES)
S4	=	2-Fluorobiphenyl	(+/- 0.44 MINUTES)
S5	=	2,4,6-Tribromophenol	(+/- 0.44 MINUTES)
S6	=	p-Terphenyl-d14	(+/- 0.69 MINUTES)

Column used to flag retention time values with an asterisk.

* Values outside of QC limits

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151400LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Pyridine	40	13.8	34.5			22 - 70
N-Nitrosodimethylamine	40	18.9	47.2			25 - 110
Aniline	40	26.5	66.2			14 - 99
Bis(2-chloroethyl)ether	40	36.2	90.5			35 - 110
Phenol	40	14.1	35.2			0 - 115
2-Chlorophenol	40	31.1	77.8			35 - 105
1,3-Dichlorobenzene	40	28.7	71.8			30 - 100
1,4-Dichlorobenzene	40	30.9	77.2			30 - 100
1,2-Dichlorobenzene	40	27.9	69.8			35 - 100
Benzyl alcohol	40	26.2	65.5			30 - 110
2,2'-Oxybis(1-chloropropane)	40	31.8	79.5			25 - 130
2-Methylphenol	40	26	65.0			40 - 110
Hexachloroethane	40	25	62.5			30 - 95
N-Nitroso-di-n-propylamine	40	28.8	72.0			35 - 130
4-Methylphenol	40	22.7	56.8			30 - 110
Nitrobenzene	40	34.5	86.2			45 - 110
Isophorone	40	32.5	81.2			50 - 110
2-Nitrophenol	40	37.8	94.5			40 - 115
2,4-Dimethylphenol	40	39.2	98.0			30 - 110
Bis(2-chloroethoxy)methane	40	37.8	94.5			45 - 105
2,4-Dichlorophenol	40	36.6	91.5			50 - 105
1,2,4-Trichlorobenzene	40	34.4	86.0			35 - 105
4-Chloroaniline	40	35.5	88.8			15 - 110
Hexachlorobutadiene	40	35.6	89.0			25 - 105
4-Chloro-3-methylphenol	40	37.2	93.0			45 - 110
Hexachlorocyclopentadiene	40	30.6	76.5			13 - 80
2,4,6-Trichlorophenol	40	42.8	107.0			50 - 115
2,4,5-Trichlorophenol	40	41.4	104.0			50 - 110
2-Chloronaphthalene	40	42.9	107.0 *			50 - 105
2-Nitroaniline	40	43.8	110.0			50 - 115
Dimethylphthalate	40	41.3	103.0			25 - 125
2,6-Dinitrotoluene	40	43.2	108.0			50 - 115

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1342

Form III

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151400LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
3-Nitroaniline	40	39	97.5			20 - 125
2,4-Dinitrophenol	80	86.3	108.0			15 - 140
Dibenzofuran	40	37.4	93.5			55 - 105
2,4-Dinitrotoluene	40	39	97.5			50 - 120
4-Nitrophenol	40	15	37.5			0 - 125
4-Chlorophenyl-phenylether	40	37.3	93.2			50 - 110
Diethylphthalate	40	39.1	97.8			40 - 120
4-Nitroaniline	40	41.7	104.0			35 - 120
4,6-Dinitro-2-methylphenol	40	40.1	100.0			40 - 130
N-Nitrosodiphenylamine	40	41.3	103.0			50 - 110
4-Bromophenyl-phenylether	40	40.1	100.0			50 - 115
Hexachlorobenzene	40	38.1	95.2			50 - 110
Pentachlorophenol	40	46.1	115.0			40 - 115
Di-n-butylphthalate	40	41.4	104.0			55 - 115
Butylbenzylphthalate	40	42.2	106.0			45 - 115
3,3'-Dichlorobenzidine	80	78.9	98.6			20 - 110
Bis(2-ethylhexyl)phthalate	40	42.2	106.0			40 - 125
Di-n-octylphthalate	40	45.1	113.0			35 - 135
2-Picoline	40	17.6	44.0			15 - 110
N-Nitrosomethylethylamine	40	25.5	63.8			25 - 131
N-Nitrosodiethylamine	40	30.4	76.0			46 - 111
Methylmethanesulfonate	40	24.4	61.0			15 - 103
Ethyl methanesulfonate	40	36.3	90.8			46 - 113
Pentachloroethane	40	28.5	71.2			27 - 99
N-Nitrosopyrrolidine	40	24.1	60.2			51 - 112
Acetophenone	80	66.6	83.2			45 - 118
N-Nitrosomorpholine	40	23.8	59.5			51 - 112
o-Toluidine	40	24.8	62.0			49 - 97
a,a-Dimethylphenethylamine	40	0	0.0 *			70 - 130
2,6-Dichlorophenol	40	36.4	91.0			50 - 135
Hexachloropropene	40	29.6	74.0			21 - 105
N-Nitrosodibutylamine	40	37.7	94.2			43 - 130

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1342

Form III

3

SEMI-VOLATILE ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151400LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
Isosafrole	40	39.4	98.5			70 - 130
1,2,4,5-Tetrachlorobenzene	40	33.8	84.5			40 - 100
Safrole	40	45.1	113.0 *			52 - 100
1,4-Naphthoquinone	40	14.3	35.8			28 - 143
1,3-Dinitrobenzene	40	47.9	120.0 *			61 - 112
Pentachlorobenzene	40	35.7	89.2			50 - 99
1-Naphthylamine	40	26.7	66.8			38 - 91
2-Naphthylamine	40	25.2	63.0 *			70 - 130
2,3,4,6-Tetrachlorophenol	40	37.4	93.5			55 - 122
5-Nitro-o-toluidine	40	31.8	79.5			70 - 130
p-Phenylenediamine	40	33	82.5			58 - 107
Phenacetin	40	32.9	82.2			57 - 114
4-Aminobiphenyl	40	35.8	89.5			49 - 103
Pronamide	40	34.5	86.2			59 - 99
Pentachloronitrobenzene(PCNB)	40	43.2	108.0 *			60 - 104
Dinoseb	40	40.6	102.0			44 - 142
4-Nitroquinoline-1-oxide	40	34.7	86.8			10 - 125
Methapyriline	40	6.6	16.5			0 - 90
Aramite	40	28.8	72.0			41 - 127
p-Dimethylaminoazobenzene	40	36.8	92.0			70 - 130
2-Acetylaminofluorene	40	35.9	89.8			63 - 103
7,12-Dimethylbenz(a)anthracene	40	35.1	87.8			57 - 95
3-Methylcholanthrene	40	32.6	81.5			52 - 105
N-Nitrosopiperidine	40	34.4	86.0			53 - 112
1,3,5-Trinitrobenzene	40	21	52.5			29 - 163
Diallate (Avadex)	40	31.9	79.8			56 - 98
Isodrin	40	39.5	98.8			54 - 110
Chlorobenzilate	40	41.2	103.0 *			58 - 101
Kepone	40	55	138.0			0 - 165
0,0,0-Triethylphosphorothioate	40	26.5	66.2			50 - 106

Spike Recovery: 7 out of 94 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1342

Form III

8270 Standards Data

131112 1342

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF4 =8270CAL1.D RRF10 =8270CAL2.D
RRF20 =8270CAL3.D RRF45 =8270CAL4.D RRF60 =8270CAL5.D

COMPOUND		RRF4	RRF10	RRF20	RRF45	RRF60	$\overline{RRF}$	%RSD OR R^2	RSD
Pyridine		1.668	1.776	1.767	1.759	1.718			
N-Nitrosodimethylamine		0.521	0.547	0.538	0.536	0.542			
Aniline		2.112	2.172	2.100	1.961	2.013			
Bis(2-chloroethyl)ether		1.458	1.499	1.444	1.407	1.398			
Phenol	*	1.775	1.845	1.796	1.724	1.709		*	
2-Chlorophenol		1.321	1.428	1.393	1.377	1.384			
1,3-Dichlorobenzene		1.578	1.582	1.535	1.491	1.471			
1,4-Dichlorobenzene	*	1.602	1.598	1.540	1.486	1.485		*	
1,2-Dichlorobenzene		1.516	1.516	1.483	1.429	1.416			
Benzyl alcohol		0.833	0.933	0.908	0.928	0.939			
2,2'-Oxybis(1-chloropropane)		1.823	1.835	1.775	1.723	1.728			
2-Methylphenol		1.057	1.115	1.111	1.086	1.090			
Hexachloroethane		0.602	0.614	0.601	0.596	0.594			
N-Nitroso-di-n-propylamine	#	1.002	1.074	1.053	1.030	1.050		#	
4-Methylphenol		1.523	1.640	1.631	1.593	1.582			
Nitrobenzene		0.427	0.433	0.424	0.404	0.408			
Isophorone		0.743	0.766	0.763	0.730	0.726			
2-Nitrophenol	*	0.172	0.201	0.204	0.206	0.208		*	
2,4-Dimethylphenol		0.316	0.325	0.322	0.302	0.310			
Bis(2-chloroethoxy)methane		0.504	0.508	0.496	0.467	0.473			
2,4-Dichlorophenol	*	0.294	0.325	0.318	0.308	0.312		*	
1,2,4-Trichlorobenzene		0.354	0.360	0.348	0.328	0.330			
4-Chloroaniline		0.451	0.477	0.472	0.446	0.452			
Hexachlorobutadiene	*	0.198	0.205	0.200	0.192	0.192		*	
4-Chloro-3-methylphenol	*	0.297	0.326	0.323	0.315	0.322		*	
Hexachlorocyclopentadiene	#	0.381	0.417	0.419	0.404	0.411		#	
2,4,6-Trichlorophenol	*	0.366	0.385	0.384	0.379	0.382		*	
2,4,5-Trichlorophenol		0.402	0.441	0.422	0.420	0.422			
2-Chloronaphthalene		1.218	1.234	1.211	1.134	1.112			
2-Nitroaniline		0.294	0.331	0.347	0.352	0.349			
Dimethylphthalate		1.426	1.447	1.385	1.281	1.253			
2,6-Dinitrotoluene		0.281	0.315	0.310	0.316	0.318			
3-Nitroaniline		0.309	0.352	0.355	0.341	0.343			
2,4-Dinitrophenol	#		0.107	0.145	0.178	0.192		#	

131112 1342

FORM VI

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF4 =8270CAL1.D RRF10 =8270CAL2.D
RRF20 =8270CAL3.D RRF45 =8270CAL4.D RRF60 =8270CAL5.D

COMPOUND	RRF4	RRF10	RRF20	RRF45	RRF60	$\overline{RRF}$	%RSD OR R^2	RSD
Dibenzofuran	1.732	1.744	1.659	1.532	1.515			
2,4-Dinitrotoluene	0.363	0.415	0.414	0.393	0.403			
4-Nitrophenol #	0.127	0.149	0.153	0.160	0.167		#	
4-Chlorophenyl-phenylether	0.688	0.689	0.652	0.588	0.574			
Diethylphthalate	1.327	1.280	1.202	1.140	1.155			
4-Nitroaniline	0.330	0.300	0.293	0.315	0.315			
4,6-Dinitro-2-methylphenol	0.082	0.119	0.137	0.162	0.165			
N-Nitrosodiphenylamine *	0.549	0.577	0.555	0.514	0.507		*	
4-Bromophenyl-phenylether	0.231	0.236	0.232	0.218	0.216			
Hexachlorobenzene	0.258	0.263	0.256	0.244	0.242			
Pentachlorophenol *		0.133	0.142	0.159	0.161		*	
Di-n-butylphthalate	1.282	1.419	1.376	1.212	1.173			
Butylbenzylphthalate	0.428	0.502	0.520	0.530	0.527			
3,3'-Dichlorobenzidine	0.303	0.352	0.394	0.415	0.418			
Bis(2-ethylhexyl)phthalate	0.611	0.690	0.706	0.685	0.678			
Di-n-octylphthalate *	0.958	1.181	1.247	1.232	1.231		*	
2-Picoline	1.815	1.780	1.755	1.673	1.689			
N-Nitrosomethylethylamine	0.789	0.763	0.759	0.769	0.764			
N-Nitrosodiethylamine	0.731	0.750	0.749	0.745	0.746			
Methylmethanesulfonate	0.753	0.779	0.770	0.775	0.770			
Ethyl methanesulfonate	1.166	1.153	1.127	1.135	1.148			
Pentachloroethane	0.550	0.559	0.544	0.539	0.542			
N-Nitrosopyrrolidine	0.711	0.780	0.791	0.808	0.813			
Acetophenone	0.575	0.564	0.555	0.532	0.515			
N-Nitrosomorpholine	0.733	0.736	0.726	0.716	0.721			
o-Toluidine	2.341	2.384	2.321	2.274	2.222			
a,a-Dimethylphenethylamine	0.829	0.929	0.940	0.976	0.970			
2,6-Dichlorophenol	0.273	0.300	0.302	0.297	0.295			
Hexachloropropene	0.218	0.222	0.223	0.225	0.223			
N-Nitrosodibutylamine	0.265	0.268	0.279	0.276	0.273			
Isosafrole	0.281	0.274	0.272	0.268	0.266			
1,2,4,5-Tetrachlorobenzene	0.615	0.599	0.598	0.563	0.553			
Safrole	0.239	0.240	0.244	0.248	0.244			
1,4-Naphthoquinone	0.438	0.497	0.511	0.502	0.478			

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF4 =8270CAL1.D RRF10 =8270CAL2.D
RRF20 =8270CAL3.D RRF45 =8270CAL4.D RRF60 =8270CAL5.D

COMPOUND	RRF4	RRF10	RRF20	RRF45	RRF60	$\overline{RRF}$	%RSD OR R^2	RSD
1,3-Dinitrobenzene	0.140	0.180	0.204	0.221	0.220			
Pentachlorobenzene	0.556	0.540	0.529	0.505	0.490			
1-Naphthylamine	1.180	1.235	1.230	1.194	1.141			
2-Naphthylamine	1.375	1.414	1.415	1.356	1.289			
2,3,4,6-Tetrachlorophenol	0.239	0.285	0.302	0.315	0.310			
5-Nitro-o-toluidine	0.316	0.376	0.409	0.401	0.391			
p-Phenylenediamine	0.305	0.368	0.387	0.407	0.402			
Phenacetin	0.311	0.377	0.390	0.408	0.410			
4-Aminobiphenyl	0.776	0.817	0.839	0.822	0.812			
Pronamide	0.321	0.351	0.363	0.364	0.361			
Pentachloronitrobenzene(PCNB)	0.081	0.093	0.094	0.092	0.092			
Dinoseb	0.070	0.123	0.157	0.193	0.197			
4-Nitroquinoline-1-oxide	0.057	0.066	0.059	0.047	0.042			
Methapyriline	0.192	0.245	0.274	0.290	0.293			
Aramite	0.094	0.118	0.136	0.147	0.147			
p-Dimethylaminoazobenzene	0.189	0.224	0.232	0.241	0.239			
2-Acetylaminofluorene	0.265	0.374	0.434	0.459	0.462			
7,12-Dimethylbenz(a)anthracene	0.481	0.522	0.525	0.525	0.518			
3-Methylcholanthrene	0.325	0.368	0.387	0.409	0.413			
N-Nitrosopiperidine	0.182	0.195	0.198	0.200	0.197			
1,3,5-Trinitrobenzene	0.375	0.492	0.573	0.605	0.608			
Diallate (Avadex)	0.624	0.630	0.638	0.611	0.600			
Isodrin	0.143	0.138	0.139	0.136	0.133			
Chlorobenzilate	0.224	0.275	0.291	0.303	0.299			
Kepone		0.010	0.020	0.025	0.018			
0,0,0-Triethylphosphorothioate	0.715	0.726	0.717	0.706	0.702			
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2-Fluorophenol(SURR)	1.316	1.383	1.338	1.302	1.290			
Phenol-d5(SURR)	1.644	1.734	1.677	1.615	1.606			
Nitrobenzene-d5(SURR)	0.408	0.425	0.427	0.409	0.417			
2-Fluorobiphenyl(SURR)	1.452	1.476	1.408	1.301	1.281			
2,4,6-Tribromophenol(SURR)	0.160	0.167	0.169	0.159	0.156			
p-Terphenyl-d14(SURR)	0.804	0.827	0.811	0.764	0.752			

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF75 =8270CAL6.D RRF100 =8270CAL7.D

COMPOUND		RRF75	RRF100				$\overline{RRF}$	%RSD OR R^2		RSD
Pyridine		1.730	1.754				1.73899	2.1		
N-Nitrosodimethylamine		0.542	0.556				0.54014	2		
Aniline		2.027	1.975				2.05114	3.8		
Bis(2-chloroethyl)ether		1.402	1.380				1.42684	2.9		
Phenol	*	1.701	1.653				1.74335	3.8	*	
2-Chlorophenol		1.393	1.356				1.37902	2.4		
1,3-Dichlorobenzene		1.457	1.409				1.50331	4.3		
1,4-Dichlorobenzene	*	1.469	1.425				1.51514	4.4	*	
1,2-Dichlorobenzene		1.402	1.362				1.4463	4.1		
Benzyl alcohol		0.944	0.931				0.91656	4.2		
2,2'-Oxybis(1-chloropropane)		1.733	1.696				1.75907	3		
2-Methylphenol		1.091	1.073				1.08903	1.9		
Hexachloroethane		0.595	0.582				0.59747	1.6		
N-Nitroso-di-n-propylamine	#	1.058	1.057				1.0462	2.2	#	
4-Methylphenol		1.572	1.524				1.58083	2.9		
Nitrobenzene		0.403	0.400				0.41415	3.2		
Isophorone		0.721	0.707				0.73666	3		
2-Nitrophenol	*	0.206	0.204				0.20028	6.3	*	
2,4-Dimethylphenol		0.303	0.299				0.311	3.3		
Bis(2-chloroethoxy)methane		0.466	0.453				0.48094	4.4		
2,4-Dichlorophenol	*	0.305	0.302				0.30911	3.3	*	
1,2,4-Trichlorobenzene		0.321	0.313				0.33617	5.3		
4-Chloroaniline		0.444	0.433				0.45358	3.4		
Hexachlorobutadiene	*	0.187	0.184				0.19389	3.8	*	
4-Chloro-3-methylphenol	*	0.316	0.311				0.31572	3.1	*	
Hexachlorocyclopentadiene	#	0.406	0.390				0.40382	3.5	#	
2,4,6-Trichlorophenol	*	0.380	0.370				0.37791	1.9	*	
2,4,5-Trichlorophenol		0.416	0.404				0.41814	3.1		
2-Chloronaphthalene		1.090	1.046				1.14916	6.3		
2-Nitroaniline		0.352	0.345				0.33862	6.2		
Dimethylphthalate		1.229	1.180				1.31463	7.9		
2,6-Dinitrotoluene		0.314	0.301				0.30771	4.2		
3-Nitroaniline		0.342	0.338				0.34002	4.4		
2,4-Dinitrophenol	#	0.202	0.203				0.17113	0.99883	#	22.18966

131112 1342

FORM VI

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF75 =8270CAL6.D RRF100 =8270CAL7.D

COMPOUND	RRF75	RRF100				$\overline{RRF}$	%RSD OR R^2	RSD
Dibenzofuran	1.462	1.384				1.57532	8.8	
2,4-Dinitrotoluene	0.406	0.389				0.39764	4.5	
4-Nitrophenol #	0.172	0.169				0.15675	9.9 #	
4-Chlorophenyl-phenylether	0.569	0.533				0.61315	10.2	
Diethylphthalate	1.147	1.089				1.19134	7.1	
4-Nitroaniline	0.317	0.319				0.31261	3.9	
4,6-Dinitro-2-methylphenol	0.163	0.165				0.142	0.99956	
N-Nitrosodiphenylamine *	0.487	0.482				0.52427	6.9 *	
4-Bromophenyl-phenylether	0.210	0.209				0.22177	4.9	
Hexachlorobenzene	0.236	0.232				0.24719	4.8	
Pentachlorophenol *	0.160	0.158				0.15188	7.6 *	
Di-n-butylphthalate	1.127	1.073				1.23749	10.3	
Butylbenzylphthalate	0.525	0.507				0.50544	7.1	
3,3'-Dichlorobenzidine	0.415	0.397				0.38489	11.1	
Bis(2-ethylhexyl)phthalate	0.655	0.625				0.66424	5.3	
Di-n-octylphthalate *	1.185					1.17218	9.3 *	
2-Picoline	1.627	1.572				1.70128	5.1	
N-Nitrosomethylethylamine	0.757	0.751				0.76452	1.6	
N-Nitrosodiethylamine	0.725	0.716				0.73735	1.8	
Methylmethanesulfonate	0.755	0.751				0.76466	1.5	
Ethyl methanesulfonate	1.113	1.098				1.13431	2.1	
Pentachloroethane	0.523	0.509				0.53805	3.1	
N-Nitrosopyrrolidine	0.784	0.778				0.78052	4.3	
Acetophenone	0.511	0.492				0.53482	5.7	
N-Nitrosomorpholine	0.700	0.694				0.71796	2.2	
o-Toluidine	2.108	2.020				2.23847	5.9	
a,a-Dimethylphenethylamine	0.960	0.894				0.92829	5.6	
2,6-Dichlorophenol	0.296	0.286				0.2927	3.4	
Hexachloropropene	0.226	0.217				0.22195	1.6	
N-Nitrosodibutylamine	0.268	0.260				0.26997	2.4	
Isosafrole	0.266	0.256				0.26907	2.9	
1,2,4,5-Tetrachlorobenzene	0.540	0.525				0.57032	6	
Safrole	0.243	0.234				0.24148	1.8	
1,4-Naphthoquinone	0.464	0.444				0.4762	6.1	

SEMI-VOLATILE ORGANIC INITIAL CALIBRATION DATA

Lab Name: PEL, Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SMSD03 Calibration Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm) Calibration Time Begin: 1315 End: 2157

Min RRF for SPCC(#) = 0.05 Max %RSD for CCC(*) = 30 %

LAB FILE ID: RRF75 =8270CAL6.D RRF100 =8270CAL7.D

COMPOUND	RRF75	RRF100				$\overline{RRF}$	%RSD OR R^2	RSD
1,3-Dinitrobenzene	0.218	0.210				0.19896	14.9	
Pentachlorobenzene	0.478	0.461				0.50832	6.8	
1-Naphthylamine	1.091	1.033				1.15766	6.4	
2-Naphthylamine	1.214	1.122				1.31205	8.4	
2,3,4,6-Tetrachlorophenol	0.303	0.299				0.29328	8.8	
5-Nitro-o-toluidine	0.386	0.369				0.37801	8.1	
p-Phenylenediamine	0.404	0.403				0.38242	9.6	
Phenacetin	0.412	0.407				0.38769	9.3	
4-Aminobiphenyl	0.775	0.721				0.79445	5.1	
Pronamide	0.351	0.346				0.35094	4.3	
Pentachloronitrobenzene(PCNB)	0.091	0.091				0.0905	4.6	
Dinoseb	0.202	0.202				0.16332	0.99952	
4-Nitroquinoline-1-oxide	0.037	0.035				0.04917	0.99695	
Methapyriline	0.292	0.291				0.2682	14.1	
Aramite	0.150	0.145				0.13374	0.99908	
p-Dimethylaminoazobenzene	0.237	0.228				0.22702	7.9	
2-Acetylaminofluorene	0.462	0.457				0.4161	0.99967	
7,12-Dimethylbenz(a)anthracene	0.507	0.487				0.50918	3.6	
3-Methylcholanthrene	0.407	0.401				0.38717	8.1	
N-Nitrosopiperidine	0.199	0.192				0.19481	3.1	
1,3,5-Trinitrobenzene	0.598	0.595				0.54921	0.99952	
Diallate (Avadex)	0.590	0.579				0.61038	3.6	
Isodrin	0.131	0.129				0.13559	3.6	
Chlorobenzilate	0.296	0.284				0.28163	9.6	
Kepone	0.012					0.01714	35.9	<-
0,0,0-Triethylphosphorothioate	0.680	0.654				0.70003	3.6	
==========								
2-Fluorophenol(SURR)	1.276	1.235				1.30566	3.6	
Phenol-d5(SURR)	1.588	1.537				1.62889	3.9	
Nitrobenzene-d5(SURR)	0.409	0.409				0.41481	2	
2-Fluorobiphenyl(SURR)	1.255	1.195				1.33835	8	
2,4,6-Tribromophenol(SURR)	0.153	0.148				0.15884	4.7	
p-Terphenyl-d14(SURR)	0.741	0.707				0.77254	5.6	

Average Used: 5.1

131112 1342

FORM VI

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 1601

CCV ID: SSC1124039 Lab File ID: 8270SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type		RRF
Pyridine		1.73899	1.676	3.6	AVRG		
N-Nitrosodimethylamine		0.54014	0.57935	7.3	AVRG		
Aniline		2.05114	1.906	7.1	AVRG		
Bis(2-chloroethyl)ether		1.42684	1.614	13.1	AVRG		
Phenol	*	1.74335	1.872	7.4	AVRG	*	
2-Chlorophenol		1.37902	1.459	5.8	AVRG		
1,3-Dichlorobenzene		1.50331	1.566	4.2	AVRG		
1,4-Dichlorobenzene	*	1.51514	1.573	3.8	AVRG	*	
1,2-Dichlorobenzene		1.4463	1.507	4.2	AVRG		
Benzyl alcohol		0.91656	0.98246	7.2	AVRG		
2,2'-Oxybis(1-chloropropane)		1.75907	1.873	6.5	AVRG		
2-Methylphenol		1.08903	1.161	6.6	AVRG		
Hexachloroethane		0.59747	0.62022	3.8	AVRG		
N-Nitroso-di-n-propylamine	#	1.0462	1.147	9.6	AVRG	#	
4-Methylphenol		1.58083	1.708	8.0	AVRG		
Nitrobenzene		0.41415	0.43469	5.0	AVRG		
Isophorone		0.73666	0.73304	0.5	AVRG		
2-Nitrophenol	*	0.20028	0.2143	7.0	AVRG	*	
2,4-Dimethylphenol		0.311	0.35694	14.8	AVRG		
Bis(2-chloroethoxy)methane		0.48094	0.52465	9.1	AVRG		
2,4-Dichlorophenol	*	0.30911	0.32275	4.4	AVRG	*	
1,2,4-Trichlorobenzene		0.33617	0.35006	4.1	AVRG		
4-Chloroaniline		0.45358	0.48661	7.3	AVRG		
Hexachlorobutadiene	*	0.19389	0.21891	12.9	AVRG	*	
4-Chloro-3-methylphenol	*	0.31572	0.33888	7.3	AVRG	*	
Hexachlorocyclopentadiene	#	0.40382	0.43047	6.6	AVRG	#	
2,4,6-Trichlorophenol	*	0.37791	0.40522	7.2	AVRG	*	
2,4,5-Trichlorophenol		0.41814	0.44557	6.6	AVRG		
2-Chloronaphthalene		1.14916	1.211	5.4	AVRG		
2-Nitroaniline		0.33862	0.40051	18.3	AVRG		
Dimethylphthalate		1.31463	1.399	6.4	AVRG		
2,6-Dinitrotoluene		0.30771	0.33637	9.3	AVRG		
3-Nitroaniline		0.34002	0.39618	16.5	AVRG		
2,4-Dinitrophenol	#	45	50.7	12.7	LINR	#	0.21341
Dibenzofuran		1.57532	1.697	7.7	AVRG		
2,4-Dinitrotoluene		0.39764	0.43892	10.4	AVRG		

131112 1342

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 1601

CCV ID: SSC1124039 Lab File ID: 8270SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
4-Nitrophenol	#	0.15675	0.16897	7.8	AVRG	#
4-Chlorophenyl-phenylether		0.61315	0.62061	1.2	AVRG	
Diethylphthalate		1.19134	1.271	6.7	AVRG	
4-Nitroaniline		0.31261	0.37044	18.5	AVRG	
4,6-Dinitro-2-methylphenol		45	46.4	3.1	LINR	
N-Nitrosodiphenylamine	*	0.52427	0.59071	12.7	AVRG	*
4-Bromophenyl-phenylether		0.22177	0.2389	7.7	AVRG	
Hexachlorobenzene		0.24719	0.2615	5.8	AVRG	
Pentachlorophenol	*	0.15188	0.17186	13.2	AVRG	*
Di-n-butylphthalate		1.23749	1.328	7.3	AVRG	
Butylbenzylphthalate		0.50544	0.6042	19.5	AVRG	
Bis(2-ethylhexyl)phthalate		0.66424	0.76939	15.8	AVRG	
Di-n-octylphthalate	*	1.17218	1.401	19.5	AVRG	*
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2-Fluorophenol(SURR)		1.30566	1.407	7.8	AVRG	
Phenol-d5(SURR)		1.62889	1.674	2.8	AVRG	
Nitrobenzene-d5(SURR)		0.41481	0.41763	0.7	AVRG	
2-Fluorobiphenyl(SURR)		1.33835	1.338	0.0	AVRG	
2,4,6-Tribromophenol(SURR)		0.15884	0.16589	4.4	AVRG	
p-Terphenyl-d14(SURR)		0.77254	0.79231	2.6	AVRG	

131112 1342

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 1912

CCV ID: SSC1124059 Lab File ID: BSSEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3,3'-Dichlorobenzidine	0.38489	0.44045	14.4	AVRG	
Acetophenone	0.53482	0.55757	4.3	AVRG	

131112 1342

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 2220

CCV ID: SSC1124049 Lab File ID: AP9SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
2-Picoline	1.70128	1.714	0.7	AVRG	
N-Nitrosomethylethylamine	0.76452	0.74144	3.0	AVRG	
N-Nitrosodiethylamine	0.73735	0.75486	2.4	AVRG	
Methylmethanesulfonate	0.76466	0.81615	6.7	AVRG	
Ethyl methanesulfonate	1.13431	1.343	18.4	AVRG	
Pentachloroethane	0.53805	0.5494	2.1	AVRG	
N-Nitrosopyrrolidine	0.78052	0.82464	5.7	AVRG	
Acetophenone	0.53482	0.54325	1.6	AVRG	
N-Nitrosomorpholine	0.71796	0.73767	2.7	AVRG	
o-Toluidine	2.23847	2.313	3.3	AVRG	
a,a-Dimethylphenethylamine	0.92829	0.93354	0.6	AVRG	
2,6-Dichlorophenol	0.2927	0.30911	5.6	AVRG	
Hexachloropropene	0.22195	0.22592	1.8	AVRG	
N-Nitrosodibutylamine	0.26997	0.27466	1.7	AVRG	
Isosafrole	0.26907	0.28728	6.8	AVRG	
1,2,4,5-Tetrachlorobenzene	0.57032	0.58501	2.6	AVRG	
Safrole	0.24148	0.27332	13.2	AVRG	
1,4-Naphthoquinone	0.4762	0.53786	12.9	AVRG	
1,3-Dinitrobenzene	0.19896	0.24157	21.4	AVRG	
Pentachlorobenzene	0.50832	0.52263	2.8	AVRG	
1-Naphthylamine	1.15766	1.094	5.5	AVRG	
2-Naphthylamine	1.31205	1.331	1.4	AVRG	
2,3,4,6-Tetrachlorophenol	0.29328	0.30904	5.4	AVRG	
5-Nitro-o-toluidine	0.37801	0.40151	6.2	AVRG	
p-Phenylenediamine	0.38242	0.38697	1.2	AVRG	
Phenacetin	0.38769	0.3909	0.8	AVRG	
4-Aminobiphenyl	0.79445	0.80875	1.8	AVRG	
Pronamide	0.35094	0.37293	6.3	AVRG	
Pentachloronitrobenzene(PCNB)	0.0905	0.09844	8.8	AVRG	
Dinoseb	45	46.2	2.7	LINR	
4-Nitroquinoline-1-oxide	45	55.8	24.0	2ORD	
Methapyriline	0.2682	0.18816	29.8	AVRG	
Aramite	45	33.8	24.9	LINR	
p-Dimethylaminoazobenzene	0.22702	0.24323	7.1	AVRG	
2-Acetylaminofluorene	45	45.2	0.4	LINR	
7,12-Dimethylbenz(a)anthracene	0.50918	0.54423	6.9	AVRG	

131112 1342

FORM VII

7SSC

SEMI-VOLATILE ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/11/12 Time: 2220

CCV ID: SSC1124049 Lab File ID: AP9SEC.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3-Methylcholanthrene	0.38717	0.40343	4.2	AVRG	
N-Nitrosopiperidine	0.19481	0.20264	4.0	AVRG	
1,3,5-Trinitrobenzene	45	25.4	43.6	LINR	
Diallate (Avadex)	0.61038	0.63108	3.4	AVRG	
Isodrin	0.13559	0.14805	9.2	AVRG	
Chlorobenzilate	0.28163	0.30478	8.2	AVRG	
Kepone	0.01714	0.03053	78.1	AVRG	
0,0,0-Triethylphosphorothioate	0.70003	0.7	0.0	AVRG	

Average Used: 9.1

131112 1342

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1615

CCV ID: CCV1129929 Lab File ID: 8270CCV4.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type		RRF
Pyridine		1.73899	1.78	2.4	AVRG		
N-Nitrosodimethylamine		0.54014	0.49662	8.1	AVRG		
Aniline		2.05114	1.828	10.9	AVRG		
Bis(2-chloroethyl)ether		1.42684	1.477	3.5	AVRG		
Phenol	*	1.74335	1.781	2.2	AVRG	*	
2-Chlorophenol		1.37902	1.369	0.7	AVRG		
1,3-Dichlorobenzene		1.50331	1.47	2.2	AVRG		
1,4-Dichlorobenzene	*	1.51514	1.45	4.3	AVRG	*	
1,2-Dichlorobenzene		1.4463	1.536	6.2	AVRG		
Benzyl alcohol		0.91656	1.051	14.7	AVRG		
2,2'-Oxybis(1-chloropropane)		1.75907	1.551	11.8	AVRG		
2-Methylphenol		1.08903	1.114	2.3	AVRG		
Hexachloroethane		0.59747	0.60929	2.0	AVRG		
N-Nitroso-di-n-propylamine	#	1.0462	0.93879	10.3	AVRG	#	
4-Methylphenol		1.58083	1.504	4.9	AVRG		
Nitrobenzene		0.41415	0.3917	5.4	AVRG		
Isophorone		0.73666	0.69524	5.6	AVRG		
2-Nitrophenol	*	0.20028	0.21076	5.2	AVRG	*	
2,4-Dimethylphenol		0.311	0.29939	3.7	AVRG		
Bis(2-chloroethoxy)methane		0.48094	0.45937	4.5	AVRG		
2,4-Dichlorophenol	*	0.30911	0.32372	4.7	AVRG	*	
1,2,4-Trichlorobenzene		0.33617	0.33811	0.6	AVRG		
4-Chloroaniline		0.45358	0.45442	0.2	AVRG		
Hexachlorobutadiene	*	0.19389	0.20541	5.9	AVRG	*	
4-Chloro-3-methylphenol	*	0.31572	0.31277	0.9	AVRG	*	
Hexachlorocyclopentadiene	#	0.40382	0.42545	5.4	AVRG	#	
2,4,6-Trichlorophenol	*	0.37791	0.39221	3.8	AVRG	*	
2,4,5-Trichlorophenol		0.41814	0.43283	3.5	AVRG		
2-Chloronaphthalene		1.14916	1.131	1.6	AVRG		
2-Nitroaniline		0.33862	0.32196	4.9	AVRG		
Dimethylphthalate		1.31463	1.276	2.9	AVRG		
2,6-Dinitrotoluene		0.30771	0.3151	2.4	AVRG		
3-Nitroaniline		0.34002	0.34041	0.1	AVRG		
2,4-Dinitrophenol	#	45	43.1	4.2	LINR	#	0.17687
Dibenzofuran		1.57532	1.537	2.4	AVRG		
2,4-Dinitrotoluene		0.39764	0.40453	1.7	AVRG		

131112 1342

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1615

CCV ID: CCV1129929 Lab File ID: 8270CCV4.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND		Expected	Found	%D / %Drift	Curve Type	RRF
4-Nitrophenol	#	0.15675	0.16187	3.3	AVRG	#
4-Chlorophenyl-phenylether		0.61315	0.60982	0.5	AVRG	
Diethylphthalate		1.19134	1.169	1.9	AVRG	
4-Nitroaniline		0.31261	0.31521	0.8	AVRG	
4,6-Dinitro-2-methylphenol		45	44.6	0.9	LINR	
N-Nitrosodiphenylamine	*	0.52427	0.50293	4.1	AVRG	*
4-Bromophenyl-phenylether		0.22177	0.2332	5.2	AVRG	
Hexachlorobenzene		0.24719	0.25515	3.2	AVRG	
Pentachlorophenol	*	0.15188	0.17547	15.5	AVRG	*
Di-n-butylphthalate		1.23749	1.159	6.3	AVRG	
Butylbenzylphthalate		0.50544	0.52534	3.9	AVRG	
Bis(2-ethylhexyl)phthalate		0.66424	0.66746	0.5	AVRG	
Di-n-octylphthalate	*	1.17218	1.177	0.4	AVRG	*
==========						
2-Fluorophenol(SURR)		1.30566	1.383	5.9	AVRG	
Phenol-d5(SURR)		1.62889	1.703	4.5	AVRG	
Nitrobenzene-d5(SURR)		0.41481	0.40479	2.4	AVRG	
2-Fluorobiphenyl(SURR)		1.33835	1.326	0.9	AVRG	
2,4,6-Tribromophenol(SURR)		0.15884	0.1724	8.5	AVRG	
p-Terphenyl-d14(SURR)		0.77254	0.78206	1.2	AVRG	

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1639

CCV ID: CCV1129935 Lab File ID: BSCCV1.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3,3'-Dichlorobenzidine	0.38489	0.42737	11.0	AVRG	
Acetophenone	0.53482	0.52751	1.4	AVRG	

131112 1342

FORM VII

7

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1703

CCV ID: CCV1129934 Lab File ID: AP9CCV1.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
2-Picoline	1.70128	1.731	1.7	AVRG	
N-Nitrosomethylethylamine	0.76452	0.7597	0.6	AVRG	
N-Nitrosodiethylamine	0.73735	0.74781	1.4	AVRG	
Methylmethanesulfonate	0.76466	0.72895	4.7	AVRG	
Ethyl methanesulfonate	1.13431	1.161	2.4	AVRG	
Pentachloroethane	0.53805	0.57165	6.2	AVRG	
N-Nitrosopyrrolidine	0.78052	0.73219	6.2	AVRG	
Acetophenone	0.53482	0.55464	3.7	AVRG	
N-Nitrosomorpholine	0.71796	0.596	17.0	AVRG	
o-Toluidine	2.23847	1.985	11.3	AVRG	
a,a-Dimethylphenethylamine	0.92829	0.88844	4.3	AVRG	
2,6-Dichlorophenol	0.2927	0.30501	4.2	AVRG	
Hexachloropropene	0.22195	0.23837	7.4	AVRG	
N-Nitrosodibutylamine	0.26997	0.26829	0.6	AVRG	
Isosafrole	0.26907	0.28355	5.4	AVRG	
1,2,4,5-Tetrachlorobenzene	0.57032	0.55932	1.9	AVRG	
Safrole	0.24148	0.2924	21.1	AVRG	
1,4-Naphthoquinone	0.4762	0.52565	10.4	AVRG	
1,3-Dinitrobenzene	0.19896	0.22446	12.8	AVRG	
Pentachlorobenzene	0.50832	0.49631	2.4	AVRG	
1-Naphthylamine	1.15766	1.154	0.3	AVRG	
2-Naphthylamine	1.31205	1.196	8.8	AVRG	
2,3,4,6-Tetrachlorophenol	0.29328	0.32119	9.5	AVRG	
5-Nitro-o-toluidine	0.37801	0.36692	2.9	AVRG	
p-Phenylenediamine	0.38242	0.40408	5.7	AVRG	
Phenacetin	0.38769	0.41165	6.2	AVRG	
4-Aminobiphenyl	0.79445	0.83182	4.7	AVRG	
Pronamide	0.35094	0.36393	3.7	AVRG	
Pentachloronitrobenzene(PCNB)	0.0905	0.0957	5.7	AVRG	
Dinoseb	45	44.5	1.1	LINR	
4-Nitroquinoline-1-oxide	45	42.6	5.3	2ORD	
Methapyriline	0.2682	0.25942	3.3	AVRG	
Aramite	45	45.4	0.9	LINR	
p-Dimethylaminoazobenzene	0.22702	0.24283	7.0	AVRG	
2-Acetylaminofluorene	45	46.1	2.4	LINR	
7,12-Dimethylbenz(a)anthracene	0.50918	0.48936	3.9	AVRG	

131112 1342

FORM VII

SEMI-VOLATILE ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SMSD03 CalibrationDate: 10/31/12 Time: 1703

CCV ID: CCV1129934 Lab File ID: AP9CCV1.D Init. Calib. Date Begin: 10/11/12 End: 10/11/12

GC Column: HPMS-5 ID: 0.25 (mm)

Min RRF for SPCC(#) = 0.05 Max %D for CCC(*) = 20 %

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
3-Methylcholanthrene	0.38717	0.40625	4.9	AVRG	
N-Nitrosopiperidine	0.19481	0.20234	3.9	AVRG	
1,3,5-Trinitrobenzene	45	40.8	9.3	LINR	
Diallate (Avadex)	0.61038	0.53846	11.8	AVRG	
Isodrin	0.13559	0.13584	0.2	AVRG	
Chlorobenzilate	0.28163	0.3021	7.3	AVRG	
Kepone	0.01714	0.03022	76.3	AVRG	
0,0,0-Triethylphosphorothioate	0.70003	0.6235	10.9	AVRG	

Average Used: 7.3

131112 1342

FORM VII

FL-PRO Organics

131112 1342

CASE NARRATIVE
FL-PRO Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHODS

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method FL-PRO

IV. PREPARATION

Water samples were prepared by SW846 EPA 3510 for FL PRO semi-volatile analysis.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

All acceptance criteria were met with the exception of:
Blank 151780MB was analyzed with the water samples extracted on 11/02/12. The following analyte were detected below RL: TPH at 280ug/L. Since the result is below the reporting limit, no further action was taken.

Samples coded accordingly.

C. Surrogates:

All acceptance criteria were met with the exception of:

Sample Q2-TFS-MW-01 was recovered below criteria for the following surrogate: o-Terphenyl surrogate at 75.2 % with criteria of (82-142). The most probable cause for this recovery is matrix interference near the elution of the surrogate since there was a positive result for TPH at 2400ug/L.

CASE NARRATIVE
FL-PRO Organic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

Sample Q2-TFS-MW-04 was recovered below criteria for the following surrogate: o-Terphenyl surrogate at 54.5 % with criteria of (82-142). The most probable cause for this recovery is matrix interference near the elution of the surrogate since there was a positive result for TPH at 8200ug/L.

Sample Q2-TFS-MW-16 was recovered below criteria for the following surrogate: o-Terphenyl surrogate at 80.2 % with criteria of (82-142). Since the recovery was only slightly below criteria and since all other criteria were met, no further action was taken.

Samples coded accordingly.

D. Spikes:

1. Laboratory Control Spikes (LCS)

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD)

No spikes requested by client.

E. Internal Standards:

This method does not require the use of internal standards.

F. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

SIGNED: DATE: 11/07/2012

FL-PRO ORGANIC CROSS REFERENCE TABLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Method: FL-PRO

EPA Sample No	Lab Sample ID
Q2-TFS-MW-05	350743201
Q2-TFS-MW-12	350743202
Q2-TFS-MW-01	350743203
Q2-TFS-MW-8D	350743205
Q2-TFS-MW-04	350743206
Q2-TFS-MW-16	350743207

131112 1342

FL-PRO Sample Data

131112 1342

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-05

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743201 Lab File ID 432-1.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1730

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	300	J	252	505	505

131112 1342

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-12

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743202 Lab File ID 432-2.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1752

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	310	J	252	505	505

131112 1342

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-01

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743203 Lab File ID 432-3.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1814

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	2400		252	505	505

131112 1342

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205 Lab File ID 432-5.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1837

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	640		252	505	505

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206 Lab File ID 432-6.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1859

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	8200		252	505	505

131112 1342

Form I

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207 Lab File ID 432-7RE.D

Sample wt/vol: 990 Units: ML Date Received: 10/27/12

Concentrated Extract Volume: 2 Date Extracted: 11/02/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1756

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	360	JB	252	505	505

131112 1342

Form I

FL-PRO QC Summary

131112 1342

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151252MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151252MB Lab File ID: 11364MB.D

Sample wt/vol: 1000 Units: ML Date Received: 10/30/12

Concentrated Extract Volume: 2 Date Extracted: 10/30/12

Level:(low/med) LOW Date Analyzed: 11/01/12 Time: 1242

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	500	U	250	500	500

1

FL-PRO ORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151780MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151780MB Lab File ID: 11428MB.D

Sample wt/vol: 1000 Units: ML Date Received: 11/02/12

Concentrated Extract Volume: 2 Date Extracted: 11/02/12

Level:(low/med) LOW Date Analyzed: 11/02/12 Time: 1650

PercentSolids: 0 decanted : Dilution Factor: 1

Extraction: SEPF Station ID: Method: FL-PRO

GPC Cleanup : (Y/N) N pH:

Column(1): RTX-5 ID: 0.53 (mm)

CONCENTRATION UNITS: UG/L

CAS NO.	*ANALYTE*	*RESULT*	*Q*	*MDL*	*LOD*	*LOQ*
5289290-40-0	TPH	280	J	250	500	500

FL-PRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151252MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID: 11364MB.D Lab Sample ID: 151252MB

Instrument ID: SFID01 Date Extracted: 10/30/12

Matrix: WATER Date Analyzed: 11/01/12

Level:(low/med) LOW Time Analyzed: 1242

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151253LCS	151253LCS	11364LCS.D	11/01/12	1304
2	Q2-TFS-MW-05	350743201	432-1.D	11/01/12	1730
3	Q2-TFS-MW-12	350743202	432-2.D	11/01/12	1752
4	Q2-TFS-MW-01	350743203	432-3.D	11/01/12	1814
5	Q2-TFS-MW-8D	350743205	432-5.D	11/01/12	1837
6	Q2-TFS-MW-04	350743206	432-6.D	11/01/12	1859

COMMENTS:

Page 1 of 2

131112 1342

Form IV

FL-PRO ORGANIC METHOD BLANK SUMMARY

EPA Sample No.

151780MB

Lab Name: Spectrum Analytical, Inc Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Lab File ID: 11428MB.D Lab Sample ID: 151780MB

Instrument ID: SFID01 Date Extracted: 11/02/12

Matrix: WATER Date Analyzed: 11/02/12

Level:(low/med) LOW Time Analyzed: 1650

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS and MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	151781LCS	151781LCS	11428LCS.D	11/02/12	1712
2	151782LCSD	151782LCSD	11428LD.D	11/02/12	1734
3	Q2-TFS-MW-16	350743207	432-7RE.D	11/02/12	1756

COMMENTS:

2A

WATER FL-PRO ORGANIC SURROGATE RECOVERY

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No. SAS No: SDG NO.: 3507432

Column(1): RTX-5 ID: 0.53 (mm)

EPA Sample NO.	S1 #	S2 #	S3 #	S4 #	S5 #	S6 #	TOT OUT
151252MB	87.0	57.3					0
151253LCS	89.0	62.0					0
151780MB	85.0	93.3					0
151781LCS	99.0	113.0					0
151782LCSD	92.0	113.0					0
Q2-TFS-MW-01	75.2 *	65.8					1
Q2-TFS-MW-04	54.5 *	72.4					1
Q2-TFS-MW-05	87.1	59.9					0
Q2-TFS-MW-12	89.1	59.9					0
Q2-TFS-MW-16	80.2 *	92.1					1
Q2-TFS-MW-8D	90.1	65.8					0

Control Limits

S1 = o-Terphenyl Surrogate 82 - 142

S2 = Nonatriacontane (C-39) 42 - 193

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

Control limit source: (lab/method) METHOD

Form II

131112 1342

FL-PRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 11/01/12

Instrument ID: SFID01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.86 S2 : 9.21 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
1	STD1130223	47312	PROCAL7.D	11/01/12	0922	3.84	9.11		
2	STD1130222	47313	PROCAL6.D	11/01/12	0944	3.86	9.14		
3	STD1130221	47314	PROCAL5.D	11/01/12	1007	3.85	9.13		
4	STD1130220	48158	PROCAL4.D	11/01/12	1029	3.86	9.21		
5	STD1130219	47316	PROCAL3.D	11/01/12	1051	3.86	9.22		
6	STD1130218	47317	PROCAL2.D	11/01/12	1113	3.86	9.21		
7	STD1130217	47318	PROCAL1.D	11/01/12	1135	3.87	9.24		
8	SSC1130230	47319	PROSEC.D	11/01/12	1157	3.88	9.27		
9	CCV1130225	48158	PROCCV1B.D	11/01/12	1220	3.87	9.28		
10	151252MB	151252MB	11364MB.D	11/01/12	1242	3.87	9.23		
11	151253LCS	151253LCS	11364LCS.D	11/01/12	1304	3.86	9.22		
12	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	1433				
13	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	1455				
14	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	1517				
15	CCV1130226	48158	PROCCV2.D	11/01/12	1708	3.85	9.14		
16	Q2-TFS-MW-05	350743201	432-1.D	11/01/12	1730	3.85	9.14		
17	Q2-TFS-MW-12	350743202	432-2.D	11/01/12	1752	3.86	9.15		
18	Q2-TFS-MW-01	350743203	432-3.D	11/01/12	1814	3.85	9.13		
19	Q2-TFS-MW-8D	350743205	432-5.D	11/01/12	1837	3.85	9.11		
20	Q2-TFS-MW-04	350743206	432-6.D	11/01/12	1859	3.86	9.14		
21	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	1921				
22	CCV1130228	48158	PROCCV3.D	11/01/12	2005	3.85	9.1		
23	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/01/12	2347				
24	ZZZZZZ	ZZZZZZ	ZZZZZZ	11/02/12	1139				
25	CCV1130227	48158	PROCCV2.D	11/02/12	1628	3.86	9.21		
26	151780MB	151780MB	11428MB.D	11/02/12	1650	3.88	9.26		

QC LIMITS

S1 = o-Terphenyl Surrogate (+/- 0.2 MINUTES)
S2 = Nonatriacontane (C-39) (+/- 0.46 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

Page 1 of 2

131112 1342

FORM VIII

FL-PRO ORGANIC ANALYTICAL SEQUENCE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

GC Column: RTX-5 ID: 0.53 (mm) Init. Calib. Date: 11/01/12

Instrument ID: SFID01

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES, AND STANDARDS IS GIVEN BELOW:

MIDCAL SURROGATE RT FROM INITIAL CALIBRATION
S1 : 3.86 S2 : 9.21 S3 : S4 :

	CLIENT SAMPLE NO	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED	S1 RT #	S2 RT #	S3 RT #	S4 RT #
27	151781LCS	151781LCS	11428LCS.D	11/02/12	1712	3.86	9.18		
28	151782LCSD	151782LCSD	11428LD.D	11/02/12	1734	3.86	9.19		
29	Q2-TFS-MW-16	350743207	432-7RE.D	11/02/12	1756	3.85	9.1		
30	CCV1130383	48158	PROCCV3.D	11/02/12	2200	3.87	9.19		

			QC LIMITS
S1	=	o-Terphenyl Surrogate	(+/- 0.2 MINUTES)
S2	=	Nonatriacontane (C-39)	(+/- 0.46 MINUTES)

Column used to flag retention time values with an asterisk.
* Values outside of QC limits

FL-PRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151253LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH	3400	2200	64.7			55 - 118

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1342

Form III

3

FL-PRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151781LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH	3400	2900	85.3			55 - 118

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1342

Form III

3

FL-PRO ORGANIC LAB CONTROL SAMPLE RECOVERY

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW. 151782LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

COMPOUND	SPIKE ADDED ug/L	LCS CONCENTRATION ug/L	LCS % REC #	LCS % RPD	QC LIMITS RPD	QC LIMITS REC.
TPH	3400	2700	79.4	7.1	20	55 - 118

Spike Recovery: 0 out of 1 outside limits

Column to be used to flag recovery values with an asterisk

* Values outside QC limits

Control limit source: (lab/method) METHOD

COMMENTS:

131112 1342

Form III

FL-PRO Standards Data

131112 1342

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

LAB FILE ID: RRF0.17 =PROCAL1.D RRF0.34 =PROCAL2.D
RRF0.85 =PROCAL3.D RRF1.7 =PROCAL4.D RRF2.55 =PROCAL5.D

COMPOUND	RRF0.17	RRF0.34	RRF0.85	RRF1.7	RRF2.55
TPH	9246817.647	6938179.412	7207214.118	6600123.529	7037540
==========					
Nonatriacontane (C-39)(SURR)	3419720	3452493.333	3744653.333	3811626.667	4543346.667
o-Terphenyl Surrogate(SURR)	7499260	7231760	7554360	8615300	6966400

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

LAB FILE ID: RRF3.4 =PROCAL6.D RRF5.1 =PROCAL7.D

COMPOUND	RRF3.4	RRF5.1			
TPH	6678698.235	6304933.725			
==========					
Nonatriacontane (C-39)(SURR)	4442680	3955213.333			
o-Terphenyl Surrogate(SURR)	7031380	4717120			

131112 1342

FORM VI

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

COMPOUND	CURVE	COEFFICIENTS AO	COEFFICIENTS A1	%RSD OR R^2
TPH	AVRG		7144786.667	13.6
==========				
Nonatriacontane (C-39)(SURR)	AVRG		3909961.905	11.3
o-Terphenyl Surrogate(SURR)	AVRG		7087940	16.7

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT1: PROCAL1.D RT2: PROCAL2.D
RT3: PROCAL3.D RT4: PROCAL4.D RT5: PROCAL5.D

COMPOUND	RT1	RT2	RT3	RT4	RT5	MIDCAL RT	RT WINDOW FROM	TO
TPH	5.260	5.417	5.417	5.260	5.260			
==========								
Nonatriacontane (C-39)(SURR)	9.240	9.207	9.220	9.207	9.133			
o-Terphenyl Surrogate(SURR)	3.873	3.860	3.863	3.860	3.847			

FL-PRO ORGANIC INITIAL CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Instrument ID: SFID01 Calibration Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm) Calibration Time Begin: 922 End: 1135

Min RRF for SPCC(#) = 0 Max %RSD for CCC(*) = 0 %

LAB FILE ID: RT6: PROCAL6.D RT7: PROCAL7.D

COMPOUND	RT6	RT7				MIDCAL RT	RT WINDOW FROM	TO
TPH	5.260	5.417				5.260	0.523	9.997
==========								
Nonatriacontane (C-39)(SURR)	9.140	9.110				9.207	8.747	9.667
o-Terphenyl Surrogate(SURR)	3.860	3.843				3.860	3.660	4.060

7SSC

FL-PRO ORGANIC SECONDARY SOURCE CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 1157

CCV ID: SSC1130230 Lab File ID: PROSEC.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6360302.941	11.0	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3849826.667	1.5	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7584620	7.0	AVRG	

131112 1342

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 1220

CCV ID: CCV1130225 Lab File ID: PROCCV1B.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6071966.471	15.0	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3415413.333	12.6	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7531340	6.3	AVRG	

131112 1342

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 1708

CCV ID: CCV1130226 Lab File ID: PROCCV2.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6413641.765	10.2	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3748946.667	4.1	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7970400	12.5	AVRG	

131112 1342

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SFID01 CalibrationDate: 11/01/12 Time: 2005

CCV ID: CCV1130228 Lab File ID: PROCCV3.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	5773653.529	19.2	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	3847666.667	1.6	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	6977480	1.6	AVRG	

131112 1342

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SFID01 CalibrationDate: 11/02/12 Time: 1628

CCV ID: CCV1130227 Lab File ID: PROCCV2.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6474067.059	9.4	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	4872253.333	24.6	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7752680	9.4	AVRG	

131112 1342

FORM VII

7

FL-PRO ORGANIC CONTINUING CALIBRATION DATA

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID: SFID01 CalibrationDate: 11/02/12 Time: 2200

CCV ID: CCV1130383 Lab File ID: PROCCV3.D Init. Calib. Date Begin: 11/01/12 End: 11/01/12

GC Column: RTX-5 ID: 0.53 (mm)

COMPOUND	Expected	Found	%D / %Drift	Curve Type	RRF
TPH	7144786.6	6386698.824	10.6	AVRG	
==========					
Nonatriacontane (C-39)(SURR)	3909961.9	4254786.667	8.8	AVRG	
o-Terphenyl Surrogate(SURR)	7087940	7473160	5.4	AVRG	

131112 1342

FORM VII

Inorganics

131112 1342

Inorganic Data Qualifiers

C (Concentration) Qualifier - Entries and their meanings are:

J The reported value obtained was less than the RL but greater than or equal to the MDL.

E The reported value obtained was over calibration or linear range.

U The reported value obtained was less than the MDL or was not detected.

Q Qualifier - Entries and their meanings are:

U The reported value is estimated because of interference. An explanatory comment must be included under "Comments" on the Cover Page if the problem applies to all samples in this data package or on the individual FORM 1 if it is an isolated problem.

M Duplicate injection precision was not met (two analyses of the same sample did not agree).

N Spiked sample recovery not within control limits.

E Serial Dilution percent difference not within control limits.

S The reported value was determined by the Method of Standard Additions (MSA).

W Post-digestion spike for Furnace AA analysis is out of control limits (85-115%) while sample absorbance is less than 50% of spike absorbance.

***** Duplicate analysis not within control limits.

+ Correlation coefficient for the MSA is less than 0.995.

X The data is flagged as rejected by analyst utilizing analytical judgement.

Entering "S", "W", or "+" is mutually exclusive. No combination of these qualifiers can apear in the same field.

M (Method) Qualifier - Enter one of the following:

P ICP
A Flame AA
F Furnace AA
CV Manual Cold Vapor AA
TC Total Organic Carbon
AS Semi-Automated Spectrophotometric
CA Midi-Distillation Spectrophotometric
T Titrimetric
C Manual Spectrophotometric
GR Gravimetric
NR Analyte was not required by your lab

131112 1342

Inorganic Sample ID Qualifiers

The qualifiers that may be appended to the lab sample ID and/or the client sample ID for inorganic analysis are defined below:

DL Diluted reanalysis. Indicates that the results of the original analysis of the sample contained compounds that exceeded the calibration range. The sample was diluted and reanalyzed. May be followed by a digit to indicate multiple dilutions of the sample. The results of more than one diluted reanalysis may be reported.

R Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalysis of the sample at the same dilution.

RE Re-extracted. The extract was reanalyzed with re-extraction. May be followed by a digit to indicate multiple re-extraction of the same sample at the same dilution.

MS Matrix spike (may be followed by a digit to indicate multiple matrix within a sample set).

SD Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spike duplicate within a sample set).

A Post Digestion Spike.

L Serial Dilution.

131112 1342

Metals Data Package

131112 1342

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method SW6010B

IV. PREPARATION

Water samples were prepared according to Spectrum Analytical Inc. Laboratory's Standard Operating Procedures and EPA Method 3010A.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met with the exception of:

Blank 151706MB was analyzed with the water samples on 11/05/12. The following analyte(s) were detected below RL: Manganese at 4.06 ug/L Samples coded accordingly.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

The hit in the blank was below the reporting limit, therefore, corrective action was not taken.

C. Spikes:

1. Laboratory Control Spikes (LCS):

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

All acceptance criteria were met.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

All acceptance criteria were met.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

Signature: _____
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 11/12/2012

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SDG No.: 3507432

SOW No.:

EPA Sample No	Lab Sample ID
Q2-TFS-MW-8D	350743205
Q2-TFS-MW-04	350743206
Q2-TFS-MW-16	350743207

Were ICP interelement corrections applied?	Yes/No	Yes
Were ICP background corrections applied?	Yes/No	Yes
If yes - were raw data generated before application of background corrections?	Yes/No	No

Comments:

131112 1342

Metals Inorganic Sample Data

131112 1342

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	2.93	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1342

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	20.8			P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1342

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	1.64	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1342

Metals Inorganic QC Summary Data

131112 1342

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151706MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151706MB

Level:(low/med) LOW Date Received: 11/1/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: UG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
7439-96-5	Manganese	4.06	J		P	0.35	0.7	10

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1342

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Initial Calibration Source: 47792

Continuing Calibration Source: 48141

Concentration Units: (ug/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Manganese	400	405.000	101.2	500	504.000	100.8	500.000	100.0	P

ICV IDs: P= ICV1130542

CCV1 IDs: P= CCV1130547

CCV2 IDs: P= CCV1130833

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

131112 1342

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2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Initial Calibration Source:

Continuing Calibration Source: 48141

Concentration Units: (ug/L)

Analyte	Initial Calibration			Continuing Calibration					
	True	Found	%R (1)	True	Found	%R (1)	Found	%R (1)	M
Manganese				500	521.000	104.2	507.000	101.4	P

ICV IDs:

CCV1 IDs: P= CCV1130845

CCV2 IDs: P= CCV1130857

(1) Control Limits: Mercury 80-120; Cyanide 85-115; Other Metals 90-110

ICV is Second Source

131112 1342

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2B

CRDL STANDARD FOR AA AND ICP

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

AA CRDL Standard Source:

ICP CRDL Standard Source: 48068

Concentration Units: UG/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
	True	Found	%R	True	Found	%R	Found	%R
Manganese				10	9.98	99.8		

Control Limits: No limits have been established by EPA at this time

131112 1342

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3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Preparation Blank Matrix (water/soil): WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Manganese	0.35	U	0.35	U	0.35	U	0.35	U	4.06	J	P

ICB IDs: P= ICB1130543

CCB1 IDs: P= CCB1130548

CCB2 IDs: P= CCB1130834

CCB3 IDs: P= CCB1130846

131112 1342

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3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Preparation Blank Matrix (water/soil):

Preparation Blank Concentration Units (ug/L or mg/Kg):

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L)	C		C		C	Prepa-ration Blank	C	M
Manganese			0.35	U							P

ICB IDs:

CCB1 IDs: P= CCB1130858

CCB2 IDs:

CCB3 IDs:

131112 1342

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

ICP ID#: ICAP2 ICSA Source: 47383

ICSAB Source: 47602

Concentration Units: UG/L

	True		Initial Found			Final Found		
Analyte	Sol. A	Sol. AB	Sol. A	Sol. AB	%R	Sol. A	Sol. AB	%R
Manganese	0	500	-0.384	465.857	93.2			

ICSA: ICS1130545

ICSAB: ICS1130546

131112 1342

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5B

POST DIGEST SPIKE SAMPLE RECOVERY

EPA Sample No.

350743205A

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Control Limit %R	Spiked Sample	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Manganese	80 - 120	497.00		2.93	J	500	98.8		P

Comments:

131112 1342

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6

DUPLICATES

EPA Sample No.

151708LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): ug/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Manganese	20	549		511		7.2		P

Comments:

131112 1342

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

EPA Sample No.

151707LCS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Solid LCS Source:

Aqueous LCS Source: 47790, 47357, 46091,

	Aqueous (ug/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Manganese	500	549	109.8				-	

131112 1342

U.S. EPA - CLP

7

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 151708LCSD

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Solid LCS Source:

Aqueous LCS Source: 47790, 47357, 46091,

	Aqueous (ug/L)			Solid				
Analyte	True	Found	%R	True	Found	C	Limits	%R
Manganese	500	511	102.2				-	

131112 1342

U.S. EPA - CLP

9

SERIAL DILUTIONS

EPA Sample No.

350743205L

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: Water Level:(low/med) LOW

Concentration Units (ug/L or mg/kg): ug/L

Analyte	Initial Sample Result (I)	C	Serial Dilution Result (S)	C	% Differ-ence	Q	M
Manganese	2.93	J	2.71	J	7.4		P

Comments:

131112 1342

U.S. EPA - CLP

10

METHOD DETECTION LIMITS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

ICP ID Number : ICAP2

Furnace AA ID Number :

Analyte	Wave-length (nm)	Raw MDL (ug/L)	CRDL (ug/L)	MDL (ug/L)	Verification Date	M
Manganese	257.61	0.35	10	0.35	7/13/2012	P

Comments:

131112 1342

U.S. EPA - CLP

11A

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No.: SDG No.: 3507432

ICP ID Number : ICAP2 Date: 12/11/2007

Analyte	Wave-length	Interelement Correction Factors for:													
		Ag	Al	As	Ba	Be	Ca	Cd	Co	Cr	Cu	Fe	K	Li	Mg
Manganese	257.61														

Comments:

131112 1342

U.S. EPA - CLP

11A

INTERELEMENT CORRECTION FACTORS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No.: SDG No.: 3507432

ICP ID Number : ICAP2 Date: 12/11/2007

Analyte	Wave-length	Interelement Correction Factors for:												
		Mn	Mo	Na	Ni	Pb	Sb	Se	Sn	Sr	Ti	Tl	V	Zn
Manganese	257.61					0.514043		0.637384				1.127690		

Comments:

131112 1342

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12

ICP LINEAR RANGES (SEMI-ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

ICP ID NUMBER : ICAP2 DATE : 12/8/2009

Analyte	Integ. Time (sec.)	Concentration UG/L	M
Manganese	1	5000	P

Comments:

131112 1342

U.S. EPA - CLP

13

PREPARATION LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Method : 6010

EPA Sample No:	Preparation Date	Weight (gram)	Volume (mL)
151706MB	1 Nov 12		50
151707LCS	1 Nov 12		50
151708LCSD	1 Nov 12		50
Q2-TFS-MW-04	1 Nov 12		50
Q2-TFS-MW-16	1 Nov 12		50
Q2-TFS-MW-8D	1 Nov 12		50

131112 1342

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : ICAP2 Method : P

Start Date : 11/5/2012 End Date : 11/5/2012

EPA Sample No.	D/F	Time	%R	Analytes																											
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CAL01	1	10:49																		X												
CAL02	1	10:55																														
CAL03	1	11:01																		X												
CAL04	1	11:07																		X												
CAL05	1	11:12																		X												
CAL06	1	11:18																		X												
ICV1130542	1	11:41																		X												
ICB1130543	1	11:47																		X												
CRD1130544	1	11:53																		X												
ICS1130545	1	11:59																		X												
ICS1130546	1	12:04																		X												
CCV1130547	1	12:13																		X												
CCB1130548	1	12:19																		X												
ZZZZZZ	1	12:39																														
ZZZZZZ	1	12:45																														
ZZZZZZ	1	12:51																														
ZZZZZZ	1	12:56																														
ZZZZZZ	5	13:01																														
ZZZZZZ	1	13:07																														
ZZZZZZ	1	13:12																														
ZZZZZZ	1	13:17																														
ZZZZZZ	1	13:23																														
ZZZZZZ	1	13:28																														
ZZZZZZ	1	13:33																														
ZZZZZZ	1	13:39																														
ZZZZZZ	1	13:45																														
ZZZZZZ	1	13:51																														
ZZZZZZ	1	13:56																														
ZZZZZZ	1	14:01																														
ZZZZZZ	5	14:07																														
ZZZZZZ	1	14:14																														
ZZZZZZ	1	14:19																														
ZZZZZZ	1	14:24																														
ZZZZZZ	1	14:30																														

131112 1342

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : ICAP2 Method : P

Start Date : 11/5/2012 End Date : 11/5/2012

EPA Sample No.	D/F	Time	%R	Analytes																											
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	K	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	V	ZN
CCV1130833	1	14:36																		X											
CCB1130834	1	14:41																		X											
ZZZZZZ	1	14:47																													
ZZZZZZ	1	14:53																													
ZZZZZZ	1	15:00																													
ZZZZZZ	1	15:06																													
ZZZZZZ	5	15:12																													
151706MB	1	15:18																		X											
151707LCS	1	15:24																		X											
151708LCSD	1	15:30																		X											
Q2-TFS-MW-8D	1	15:35																		X											
350743205L	5	15:42																		X											
CCV1130845	1	15:48																		X											
CCB1130846	1	15:53																		X											
ZZZZZZ	1	15:59																													
ZZZZZZ	1	16:05																													
350743205A	1	16:10																		X											
Q2-TFS-MW-04	1	16:15																		X											
Q2-TFS-MW-16	1	16:22																		X											
ZZZZZZ	1	16:28																													
ZZZZZZ	5	16:35																													
ZZZZZZ	1	16:41																													
ZZZZZZ	1	16:47																													
ZZZZZZ	1	16:53																													
CCV1130857	1	16:59																		X											
CCB1130858	1	17:05																		X											
ZZZZZZ	1	17:11																													
ZZZZZZ	1	17:17																													
ZZZZZZ	1	17:23																													
ZZZZZZ	1	17:29																													
ZZZZZZ	1	17:35																													
ZZZZZZ	1	17:40																													
ZZZZZZ	1	17:46																													
ZZZZZZ	1	17:53																													

131112 1342

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : ICAP2 Method : P

Start Date : 11/5/2012 End Date : 11/5/2012

EPA Sample No.	D/F	Time	%R	Analytes																											
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	KI	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	VZN
ZZZZZZ	1	17:59																													
ZZZZZZ	1	18:05																													
ZZZZZZ	1	18:11																													
ZZZZZZ	1	18:17																													
ZZZZZZ	1	18:23																													
ZZZZZZ	1	18:29																													
ZZZZZZ	1	18:35																													
ZZZZZZ	1	18:41																													
ZZZZZZ	1	18:48																													
ZZZZZZ	1	18:54																													
ZZZZZZ	1	19:00																													
ZZZZZZ	1	19:06																													
ZZZZZZ	1	19:12																													
ZZZZZZ	1	19:19																													
ZZZZZZ	1	19:25																													
ZZZZZZ	1	19:30																													
ZZZZZZ	1	19:36																													
ZZZZZZ	1	19:43																													
ZZZZZZ	1	19:49																													
ZZZZZZ	1	19:55																													
ZZZZZZ	1	20:01																													
ZZZZZZ	1	20:07																													
ZZZZZZ	1	20:14																													
ZZZZZZ	1	20:20																													
ZZZZZZ	1	20:26																													
ZZZZZZ	1	20:32																													
ZZZZZZ	1	20:38																													
ZZZZZZ	1	20:44																													
ZZZZZZ	1	20:50																													
ZZZZZZ	1	20:56																													
ZZZZZZ	1	21:01																													
ZZZZZZ	1	21:07																													
ZZZZZZ	1	21:13																													
ZZZZZZ	1	21:19																													

131112 1342

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : ICAP2 Method : P

Start Date : 11/5/2012 End Date : 11/5/2012

EPA Sample No.	D/F	Time	%R	Analytes																											
				AG	AL	AS	BA	BE	CA	CD	CN	CO	CR	CU	FE	HG	KI	LI	MG	MN	MO	NA	NI	PB	SB	SE	SN	SR	TI	TL	VZN
ZZZZZZ	1	21:25																													
ZZZZZZ	1	21:32																													
ZZZZZZ	1	21:38																													
ZZZZZZ	1	21:44																													
ZZZZZZ	1	21:50																													
ZZZZZZ	1	21:56																													
ZZZZZZ	1	22:02																													
ZZZZZZ	1	22:08																													
ZZZZZZ	1	22:14																													
ZZZZZZ	1	22:20																													
ZZZZZZ	1	22:27																													
ZZZZZZ	1	22:33																													
ZZZZZZ	1	22:39																													
ZZZZZZ	1	22:45																													
ZZZZZZ	1	22:52																													
ZZZZZZ	1	22:58																													
ZZZZZZ	1	23:04																													
ZZZZZZ	1	23:09																													
ZZZZZZ	1	23:16																													
ZZZZZZ	1	23:22																													
ZZZZZZ	1	23:28																													
ZZZZZZ	1	23:34																													
ZZZZZZ	1	23:39																													
ZZZZZZ	1	23:45																													
ZZZZZZ	1	23:50																													

131112 1342

Wet Chemistry Data Package

131112 1342

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COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SDG No.: 3507432

SOW No.:

EPA Sample No	Lab Sample ID
Q2-TFS-MW-8D	SB59199-01
Q2-TFS-MW-04	SB59199-02
Q2-TFS-MW-16	SB59199-03

Comments:

131112 1342

Wetchem_sal Inorganic Sample Data

131112 1343

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: SB59199-01

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	10.7			N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

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1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: SB59199-02

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: SB59199-03

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: ppt (1000)

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
sal	Salinity	1	U		N/A	0.144	1	1

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

Wetchem_sal Inorganic QC Summary Data

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 1227157-SRM1

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (ppt ()

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Salinity		N/A	90	110	10	10.3	103	

Comments:

131112 1343

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7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 1227157-SRM2

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (ppt ()

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Salinity		N/A	90	110	10	10.3	103	

Comments:

131112 1343

U.S. EPA - CLP

10

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: Water

Concentration Units: ppt (1000)

PARAMETER	M	INSTRUMENT ID	DATE	CRDL	MDL	Raw MDL (UG/L)
Salinity	N/A			1	0.144	0.144

Comments:

131112 1343

Wet Chemistry Data Package

131112 1343

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method E300.1

IV. PREPARATION

There is no preparation step for this method.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met.

C. Spikes:

1. Laboratory Control Spikes (LCS):

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

2. Post Digestion Spike:

Not applicable.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

Not applicable.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

Sample Q2-TFS-MW-04 required a 5X dilution due to high concentration of the following analyte(s): Chloride.
Sample Q2-TFS-MW-16 required a 10X dilution due to high concentration of the following analyte(s): Chloride, Sulfate.
Sample Q2-TFS-MW-8D required a 10X dilution due to high concentration of the following analyte(s): Sulfate.
Sample Q2-TFS-MW-8D required a 100X dilution due to high concentration of the following analyte(s): Chloride.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

Signature: _____
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 11/01/2012

CASE NARRATIVE
Inorganic

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody or a communication form is included in the addendum with this package.

II. HOLDING TIMES

A. Sample Preparation:

All holding times were met.

B. Sample Analysis:

All holding times were met.

III. METHOD

Samples were analyzed according to Spectrum Analytical's Standard Operating Procedures and Method A2540C

IV. PREPARATION

Water samples were prepared according to PEL Laboratory's Standard Operating Procedures and EPA Method 160.1.

V. ANALYSIS

A. Calibration:

All acceptance criteria were met.

B. Blanks:

1. Calibration Blanks:

All acceptance criteria were met.

2. Method Blanks:

All acceptance criteria were met.

C. Spikes:

1. Laboratory Control Spikes (LCS):

Spectrum Analytical Inc. Lab Reference No./SDG: 3507432

Client: CH2M Hill

An LCS/LCSD set was analyzed. All percent recovery and relative percent difference (RPD) criteria were met.

2. Post Digestion Spike:

Not applicable.

3. Matrix Spike/Matrix Spike Duplicate Samples (MS/SD):

No spikes requested by client.

D. Duplicate:

No sample duplicates are reported with this method. (Spike duplicates are referenced above in section C. Spikes.)

E. Serial Dilution:

Not applicable.

F. ICP Interference Check Samples:

All acceptance criteria were met.

G. Samples:

Sample analysis proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and Spectrum Analytical Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as, verified by the following signature.

Signature:
Name: Troy L. Roberts Title: Inorg. Manager

SIGNED: DATE: 10/31/2012

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.

Lab Code : PEL Case No.: SDG No.: 3507432

SOW No.:

EPA Sample No	Lab Sample ID
Q2-TFS-MW-8D	350743205
Q2-TFS-MW-8DDL1	350743205DL1
Q2-TFS-MW-04	350743206
Q2-TFS-MW-04DL1	350743206DL1
Q2-TFS-MW-16	350743207

Comments:

131112 1343

Wet Chemistry Sample Data

131112 1343

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8D

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	11300			GR	10	20	20
3-03-5	Sulfate	732			IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	100.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-8DDL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743205DL1

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	6100			IC	34	68	100

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	104.2	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	786			GR	10	20	20
3-03-5	Sulfate	1.9			IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	98.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-04DL1

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743206DL1

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	144			IC	1.7	3.4	5

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	100.8	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Q2-TFS-MW-16

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 350743207

Level:(low/med) LOW Date Received: 10/27/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	413			IC	3.4	6.8	10
1-01-0	Residue, Filterable (TDS)	1100			GR	10	20	20
3-03-5	Sulfate	91.8			IC	3.2	6.4	10

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	99.4	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

Wet Chemistry QC Summary Data

131112 1343

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Lab Name:	Spectrum Analytical, Inc.	Contract:	NASKW TFS 426847.PP.FW.0		103012MB
Lab Code :	PEL	Case No.:		SAS No:	SDG No.: 3507432
Matrix:	WATER			Lab Sample ID:	103012MB
Level:(low/med)	LOW			Date Received:	10/30/2012
PercentSolids:	0			Station ID:	

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
3-03-5	Sulfate	0.64	U		IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	106.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

Lab Name:	Spectrum Analytical, Inc.	Contract:	NASKW TFS 426847.PP.FW.0		103112MB
Lab Code :	PEL	Case No.:		SAS No:	SDG No.: 3507432
Matrix:	WATER			Lab Sample ID:	103112MB
Level:(low/med)	LOW			Date Received:	10/31/2012
PercentSolids:	0			Station ID:	

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-00-3	Chloride	0.68	U		IC	0.34	0.68	1
3-03-5	Sulfate	0.64	U		IC	0.32	0.64	1

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	108.0	90 - 115	

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA Sample No.

151227MB

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Lab Sample ID: 151227MB

Level:(low/med) LOW Date Received: 10/30/2012

PercentSolids: 0 Station ID:

CONCENTRATION UNITS: MG/L

CAS NO.	ANALYTE	Concentration	C	Q	M	MDL	LOD	LOQ
1-01-0	Residue, Filterable (TDS)	20	U		GR	10	20	20

Color Before: _____ Clarity Before: _____ Texture :_____

Color After : _____ Clarity After: _____ Artifacts:_____

Comments:

131112 1343

U.S. EPA - CLP

2-CC

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Concentration Units: (mg/L)

Analyte	Initial Calibration				Continuing Calibration						
	Source Used	True	Found	%R (1)	Source Used	True	Found	%R (1)	Found	%R (1)	M
Chloride	46963	8	8.200	102.5	46963	8	8.200	102.5			IC
Residue, Filterabl											GR
Sulfate	46963	8	8.100	101.2	46963	8	8.100	101.2			IC

ICV IDs: IC= ICV1129786

CCV1 IDs: IC= CCV1129783

CCV2 IDs:

(1) Control Limits: TOC: 75-125

Comments:

131112 1343

U.S. EPA - CLP

2-CC

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 4268

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Concentration Units: (mg/L)

Analyte	Initial Calibration				Continuing Calibration						
	Source Used	True	Found	%R (1)	Source Used	True	Found	%R (1)	Found	%R (1)	M
Chloride	46963	8	8.000	100.0	46963	8	8.000	100.0			IC
Residue, Filterabl											GR
Sulfate	46963	8	8.000	100.0	46963	8	7.900	98.8			IC

ICV IDs: IC= ICV1129795

CCV1 IDs: IC= CCV1129792

CCV2 IDs:

(1) Control Limits: TOC: 75-125

Comments:

131112 1343

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Preparation Blank Matrix (water/soil): WATER
WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/L
Percent R

Analyte	Initial Calib. Blank (mg/L)	C	Continuing Calibration Blank (mg/L)	C		C		C	Prepa-ration Blank	C	M
Chloride	0.34	U	0.34	U							IC
Residue, Filterable (TDS)									20	U	GR
Sulfate	0.32	U	0.32	U					0.64	U	IC

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	106.0	90 - 115	

ICB IDs: IC= ICB1129785

CCB1 IDs: IC= CCB1129781

CCB2 IDs:

CCB3 IDs:

131112 1343

U.S. EPA - CLP

3

BLANKS

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Preparation Blank Matrix (water/soil): WATER
WATER

Preparation Blank Concentration Units (ug/L or mg/Kg): MG/L
Percent R

Analyte	Initial Calib. Blank (mg/L)	C	Continuing Calibration Blank (mg/L)	C		C		C	Prepa-ration Blank	C	M
Chloride	0.34	U	0.34	U					0.68	U	IC
Residue, Filterable (TDS)											GR
Sulfate	0.32	U	0.32	U					0.64	U	IC

Surrogate	Recovery	Control Limits	Qualifier
Dichloroacetate - DCA	108.0	90 - 115	

ICB IDs: IC= ICB1129794

CCB1 IDs: IC= CCB1129790

CCB2 IDs:

CCB3 IDs:

131112 1343

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

103012LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): mg/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Sulfate	20	8.1		8		1.2		IC

Comments:

131112 1343

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

103112LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): mg/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Chloride	20	8		8		0.0		IC
Sulfate	20	8		8		0.0		IC

Comments:

131112 1343

U.S. EPA - CLP

6

DUPLICATES

EPA Sample No.

151229LCSD

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.0

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: WATER Level:(low/med) LOW

% Solids for Sample: 0 % Solids for Duplicate: 0

Concentration Units (mg/L or mg/kg): MG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Residue, Filterable (TDS)	20	240		236		1.7		GR

Comments:

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 103012LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Sulfate	46963	IC	75	125	8	8.1	101.2	

Comments:

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 103012LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Sulfate	46963	IC	75	125	8	8	100	

Comments:

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 103112LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Chloride	46963	IC	75	125	8	8	100	
Sulfate	46963	IC	75	125	8	8	100	

Comments:

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 103112LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (mg/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Chloride	46963	IC	75	125	8	8	100	
Sulfate	46963	IC	75	125	8	8	100	

Comments:

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 151228LCS

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (MG/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Residue, Filterable (TDS)	47993	GR	80	120	250	240	96	

Comments:

131112 1343

U.S. EPA - CLP

7-CC

LABORATORY CONTROL SAMPLE

EPA Sample No.

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.F 151229LCSD

Lab Code : PEL Case No. SAS No: SDG No.: 3507432

Matrix: (soil/water) WATER

Concentration Units: (MG/L)

PARAMETER	LCS SOURCE	M	LIMITS LOWER	LIMITS UPPER	TRUE	FOUND	%R	C
Residue, Filterable (TDS)	47993	GR	80	120	250	236	94.4	

Comments:

131112 1343

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10

METHOD DETECTION LIMITS (ANNUALLY)

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Matrix: Water

Concentration Units: mg/L

PARAMETER	M	INSTRUMENT ID	DATE	CRDL	MDL	Raw MDL (UG/L)
Chloride	IC	IC	10/10/2012	1	0.34	0.34
Residue, Filterable (TDS)	GR	HACH	7/22/2004	20	10	10
Sulfate	IC	IC	10/10/2012	1	0.32	0.32

Comments:

131112 1343

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : HACH Method : GR

Start Date : 10/30/2012 End Date : 10/30/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
151227MB	1	9:41		X
151228LCS	1	9:44		X
151229LCSD	1	9:47		X
ZZZZZZ	1	9:50		
SAMDUP	1	9:53		X
ZZZZZZ	1	9:56		
ZZZZZZ	1	9:59		
ZZZZZZ	1	10:02		
ZZZZZZ	1	10:05		
ZZZZZZ	1	10:08		
ZZZZZZ	1	10:11		
ZZZZZZ	1	10:14		
ZZZZZZ	1	10:17		
151231CCB	1	10:20		X
ZZZZZZ	1	10:23		
SAMDUP	1	10:26		X
ZZZZZZ	1	10:29		
ZZZZZZ	1	10:32		
ZZZZZZ	1	10:35		
Q2-TFS-MW-8D	1	10:38		X
Q2-TFS-MW-04	1	10:41		X
Q2-TFS-MW-16	1	10:44		X

131112 1343

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : IC Method : IC

Start Date : 7/31/2012 End Date : 10/31/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
OICAL1	1	11:57		X
OICAL2	1	12:20		X
OICAL3	1	12:42		X
OICAL4	1	13:04		X
OICAL5	1	13:26		X
OICAL6	1	13:48		X
OICAL7	1	14:10		X
ICV1129786	1	15:17		X
ICB1129785	1	15:39		X
103012MB	1	16:01		X
103012LCS	1	16:23		X
103012LCSD	1	16:45		X
Q2-TFS-MW-8D	10	17:07		X
Q2-TFS-MW-04	1	17:29		X
ZZZZZZ	1	17:50		
ZZZZZZ	1	18:12		
ZZZZZZ	1	18:34		
CCV1129783	1	18:56		X
CCB1129781	1	19:18		X
ZZZZZZ	1	19:40		
ZZZZZZ	1	20:02		
ZZZZZZ	1	20:24		
ZZZZZZ	1	20:46		
ICV1129795	1	11:36		X
ICB1129794	1	11:58		X
103112MB	1	12:20		X
103112LCS	1	12:41		X
103112LCSD	1	13:03		X
ZZZZZZ	1	13:25		
ZZZZZZ	1	13:47		
Q2-TFS-MW-8DDL1	100	14:09		X
Q2-TFS-MW-04DL1	5	14:31		X
Q2-TFS-MW-16	10	14:53		X
CCV1129792	1	15:15		X
CCB1129790	1	15:37		X
ZZZZZZ	10	16:06		
ZZZZZZ	10	16:28		

131112 1343

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : IC Method : IC

Start Date : 7/31/2012 End Date : 10/31/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
ZZZZZZ	1	16:50		
ZZZZZZ	1	17:12		
ZZZZZZ	1	17:34		
ZZZZZZ	1	17:55		
ZZZZZZ	1	18:17		

* Chloride
* Dichloroacetate - DCA
* Sulfate

131112 1343

U.S. EPA - CLP

14

ANALYSIS RUN LOG

Lab Name: Spectrum Analytical, Inc. Contract: NASKW TFS 426847.PP.FW.09

Lab Code : PEL Case No.: SAS No: SDG No.: 3507432

Instrument ID Number : HACH Method : GR

Start Date : 10/30/2012 End Date : 10/30/2012

EPA Sample No.	D/F	Time	%R	Analytes *:
151227MB	1	9:41		X
151228LCS	1	9:44		X
151229LCSD	1	9:47		X
ZZZZZZ	1	9:50		
ZZZZZZ	1	9:53		
ZZZZZZ	1	9:56		
ZZZZZZ	1	9:59		
ZZZZZZ	1	10:02		
ZZZZZZ	1	10:05		
ZZZZZZ	1	10:08		
ZZZZZZ	1	10:11		
ZZZZZZ	1	10:14		
ZZZZZZ	1	10:17		
151231CCB	1	10:20		X
ZZZZZZ	1	10:23		
ZZZZZZ	1	10:26		
ZZZZZZ	1	10:29		
ZZZZZZ	1	10:32		
ZZZZZZ	1	10:35		
Q2-TFS-MW-8D	1	10:38		X
Q2-TFS-MW-04	1	10:41		X
Q2-TFS-MW-16	1	10:44		X

* Residue, Filterable (TDS)

131112 1343

Chain of Custody Documentation

131112 1343

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Page 1 of _____ 3507432 MLL

CHAIN OF CUSTODY RECORD

☐ 11 Almgren Drive, Agawam, MA 01001, (413) 789-9018
☐ 8405 Benjamin Road, Ste A, Tampa, FL 33634, (813) 888-9507
☐ 175 Metro Center Blvd, Warwick, RI 02886, (401) 732-3400

Special Handling:

TAT- Indicate Date Needed: 28 day
- All TATs subject to laboratory approval. Min. 24-hour notification needed for rushes.
- Samples disposed of after 60 days unless otherwise instructed.

Report To: Greg Rowell, CH2m Hill, Atlanta, GA
Telephone #: (770) 604 9182 x 54301
Project Mgr. Greg Rowell

Invoice To: Greg Rowell, CH2m Hill
P.O. No.: _____ RQN: _____

Project No.: 426847.PP.FW.09
Site Name: NASKW TFS
Location: Boca Chica Key State: FL
Sampler(s): Nikki Monroe

1=$Na_2S_2O_3$ 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid 7=CH_3OH
8= $NaHSO_4$ 9= Deionized Water 10=H_3PO_4 11= _____ 12= _____

List preservative code below: 2 | 3 | 4

QA/QC Reporting Notes:

DW=Drinking Water GW=Groundwater WW=Wastewater
O=Oil SW= Surface Water SO=Soil SL=Sludge A=Air
X1= _____ X2= _____ X3= _____

G=Grab C=Composite

QA/QC Reporting Level
☐ Level I ☐ Level II
☐ Level III ☐ Level IV
☐ Other _____

State-specific reporting standards: per contract

Lab Id:	Sample Id:	Date:	Time:	Type	Matrix	# of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic		8260B	8270D + SIM	FL-PRO	300.1 (Sulfates, Chlorides)	6010 (Manganese)	SM2520 (Salinity)	160.1 (TDS)		
-01	Q2-TFS-MW-05	10-25-12	1030	G	GW	3	6				X	X	X						
-02	Q2-TFS-MW-12	10-25-12	1205	G	GW	3	6				X	X	X						
-03	Q2-TFS-MW-01	10-25-12	1405	G	GW	3	6				X	X	X						
-04	Q2-TFS-TB-2	10-25-12	—	G	W	2					X								
-05	Q2-TFS-MW-8D	10-26-12	1215	G	GW	3	6		3		X	X	X	X	X	X	X		
-06	Q2-TFS-MW-04	10-26-12	1305	G	GW	3	5 6 10/29/12		3		X	X	X	X	X	X	X		1 AMBER BROKEN IN TRANSIT
-07	Q2-TFS-MW-16	10-26-12	1440	G	GW	3	6		3		X	X	X	X	X	X	X		

Relinquished by:	Received by:	Date:	Time:	Temp°C
[signature]	Fed Ex	10-26-12	1700	4.7
	[signature]	10/27/2012	11:50	5.7
				3.3
				4.1

☐ EDD Format CH2m Hill
☐ E-mail to greg.rowell@ch2m.com
PH < 2 8260, 6010, FL-Pro

Condition upon receipt:
☐ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

3507432

266

ORIGIN ID: EYWA (504) 593-9421
CH2M HILL

3900 N CAUSEWAY BLVD STE 1250

METAIRIE, LA 700027272
UNITED STATES US

SHIP DATE: 26OCT12
ACTWGT: 55.0 LB MAN
CAD: /POS1321
DIMS: 24x14x14 IN

BILL SENDER

Part # 156297-435 RIT2 09/12

TO SAMPLE RECEIVING
PEL LABORATORIES
8405 BENJAMIN RD
STE A
TAMPA FL 33634
(813) 888-9507
INV:
PO:
REF:
DEPT:

FedEx Express

E

J12201209200125

4 of 4

MPS# 0681 7955 4680 0420

Mstr# 8005 5032 0423

SATURDAY ### A1
PRIORITY OVERNIGHT

0200

X0 TPFA

33634
FL-US TPA

3507432

ORIGIN ID: EYWA (504) 593-9421
CH2M HILL

3900 N CAUSEWAY BLVD STE 1250

METAIRIE, LA 700027272
UNITED STATES US

SHIP DATE: 26OCT12
ACTWGT: 60.0 LB MAN
CAD: /POS1321
DIMS: 24x14x14 IN

BILL SENDER

Part# 156297-435 RIT2 09/12

TO SAMPLE RECEIVING
PEL LABORATORIES
8405 BENJAMIN RD
STE A
TAMPA FL 33634
(813) 888-9507
INV:
PO:
REF:
DEPT:

FedEx Express

E

J12201209200125

3 of 4

MPS# 0681 7955 4680 0419

Mstr# 8005 5032 0423

SATURDAY ### A1
...ITY OVERNIGHT

020

X0 TPFA

RT B79 4 A
ST 35
0419
10.27

FedEx®

IN T

Dims:

ORIGIN ID: EYWA (504) 593-9421
CH2M HILL
3900 N CAUSEWAY BLVD STE 1250
METAIRIE, LA 700027272
UNITED STATES US

SHIP DATE: 26OCT12
ACTWGT: 65.2 LB MAN
CAD: /POS1321
DIMS: 24x14x14 IN
BILL SENDER

TO SAMPLE RECEIVING
PEL LABORATORIES
8405 BENJAMIN RD
STE A
TAMPA FL 33634
(813) 888-9507
INV:
PO:
REF:
DEPT:

FedEx Express
E
J12201209200125

2 of 4
7955 4680 0408
8005 5032 0423
0 TPFA

SATURDAY ### A1
PRIORITY OVERNIGHT
0200

33634
FL-US TPA

Part # 156297-435 RIT2 09/12 ®
8R44194 10/26

REV 7/08 RRD

ORIGIN ID: EYWA (504) 593-9421
CH2M HILL
3900 N CAUSEWAY BLVD STE 1250
METAIRIE, LA 700027272
NITED STATES US

SHIP DATE: 26OCT12
ACTWGT: 60.0 LB MAN
CAD: /POS1321
DIMS: 24x14x14 IN
BILL SENDER

SAMPLE RECEIVING
PEL LABORATORIES
8405 BENJAMIN RD
STE A
TAMPA FL 33634
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pH LOG SHEET

WO#: 3507432

Client/Project NAS Key West

SampNumber	Method	Matrix		pH	Containers	Temp	Acid	
350743201	FL-PRO	W	<	2	(2)		H2SO4	mkeohane 29-Oct-12
350743201	8260	W	<	2	(3)		HCl	mkeohane 29-Oct-12
350743202	FL-PRO	W	<	2	(2)		H2SO4	mkeohane 29-Oct-12
350743202	8260	W	<	2	(3)		HCl	mkeohane 29-Oct-12
350743203	8260	W	<	2	(3)		HCl	mkeohane 29-Oct-12
350743203	FL-PRO	W	<	2	(2)		H2SO4	mkeohane 29-Oct-12
350743204	8260	W	<	2	(2)		HCl	mkeohane 29-Oct-12
350743205	6010	W	<	2	(1)		HNO3	mkeohane 29-Oct-12
350743205	8260	W	<	2	(3)		HCl	mkeohane 29-Oct-12
350743205	FL-PRO	W	<	2	(2)		H2SO4	mkeohane 29-Oct-12

SampNumber	Method	Matrix		pH	Containers	Temp	Acid	
350743206	FL-PRO	W	<	2	(2)		H2SO4	mkeohane 29-Oct-12
350743206	8260	W	<	2	(3)		HCl	mkeohane 29-Oct-12
350743206	6010	W	<	2	(1)		HNO3	mkeohane 29-Oct-12
350743207	FL-PRO	W	<	2	(2)		H2SO4	mkeohane 29-Oct-12
350743207	8260	W	<	2	(3)		HCl	mkeohane 29-Oct-12
350743207	6010	W	<	2	(1)		HNO3	mkeohane 29-Oct-12

Sample Receipt Confirmation Sheet

Client Information

SDG:	3507432	**Level:**	3
Client:	CH2M Hill	**Date Rec'd:**	10/27/2012 11:50:00 AM
Profile:	91013	**Due Date:**	11/12/2012
Project:	Boca Chica Truck Fill Stand - JP-5	**Profile Name:**	NAS Key West

Sample Verification

Samples/Cooler Secure?	Yes	**COC Present?**	Yes
Temperature of Samples:	3.3,5.7	**All Samples on COC accounted For?**	Yes
Number of Coolers Received:	4	**All Samples Rec'd Intact?**	Yes
Temp Gun ID:	101722663	**Sample Vol. Sufficient For Analysis**	Yes
pH Verified?	Yes	**Samples Rec'd W/I Hold Time?**	Yes
pH WNL?	Yes	**Are All Samples to be Analyzed?**	Yes
Samples Received By:	Fed-Ex	**Correct Sample Containers?**	Yes
Tracking Number:	800408,795546	**COC Comments written on COC?**	Yes
Profile Picked By:	MG	**Samplers Initials on COC?**	Yes
Soil Origin (Domestic/Foreign):		**Sample Date/Time Indicated?**	Yes
Site Location/Project on COC?	Yes	**TAT Requested:**	STD
Client Project # on COC?	Yes	**Client Requests Verbal Results?**	No
Project Mgr. Indicated on COC?	Yes	**Client Requests Faxed Results?**	No
COC relinquished/Dated by Client?	Yes	**Specific Subcontract Indicated?**	No
COC Received/Dated by SA?	Yes	**Written on Outside Lab Board?**	No
Written on Internal COC?	Yes	**Radioactivity Check?**	No
Lab to Conduct ALL Analyses?	Yes		

Comments

Specific tests noted on COC.

LABEL REVIEW MK

PEER REVIEW CF 10/30/2012

Client: CH2M Hill

WONo: 3507432 Profile Name: NAS Key West Profile #: 91013

MATRIX W

Sample #	Bottle	Parameter		Check	Received	Date
01	001	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:48 AM
01	002	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:48 AM
01	003	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:49 AM
01	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:11:51 AM
01	004	8270	GCMS semivolatile	In	mkeohane	10/29/2012 10:34:49 AM
01	005	8270	GCMS semivolatile	In	mkeohane	10/29/2012 12:27:48 PM
01	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:49:48 AM
01	005	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 10:34:49 AM
01	007	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 12:27:49 PM
01	005	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:33:43 AM
01	006	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 10:34:49 AM
01	009	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 12:27:49 PM
01	006	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:35:25 AM
02	001	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:49 AM
02	002	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:49 AM
02	003	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:49 AM
02	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:11:56 AM
02	004	8270	GCMS semivolatile	In	mkeohane	10/29/2012 10:34:49 AM
02	005	8270	GCMS semivolatile	In	mkeohane	10/29/2012 12:27:49 PM
02	004	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:50:00 AM
02	005	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 10:34:49 AM
02	007	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 12:27:49 PM
02	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:33:53 AM
02	006	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 10:34:50 AM
02	009	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 12:27:49 PM

02	006	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:35:33 AM
03	001	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:50 AM
03	002	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:50 AM
03	003	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:50 AM
03	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:12:01 AM
03	004	8270	GCMS semivolatile	In	mkeohane	10/29/2012 10:34:50 AM
03	005	8270	GCMS semivolatile	In	mkeohane	10/29/2012 12:27:49 PM
03	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:50:03 AM
03	005	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 10:34:50 AM
03	007	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 12:27:49 PM
03	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:33:58 AM
03	006	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 10:34:50 AM
03	009	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 12:27:49 PM
03	006	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:35:31 AM
04	001	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:50 AM
04	002	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:50 AM
04	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:07:12 AM
05	007	300.1	Determination of Inorganic Anions by Ion Chromatography	In	mkeohane	10/29/2012 10:34:51 AM
05	007	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/30/2012 2:04:55 PM
05	007	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/30/2012 2:57:40 PM
05	008	6010	Metals	In	mkeohane	10/29/2012 10:34:52 AM
05	008	6010	Metals	Out	Theresa Wolf	11/1/2012 9:58:06 AM
05	008	6010	Metals	In	Theresa Wolf	11/1/2012 6:32:34 PM
05	001	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:51 AM
05	002	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:51 AM

05	003	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:51 AM
05	002	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:12:09 AM
05	004	8270	GCMS semivolatile	In	mkeohane	10/29/2012 10:34:51 AM
05	005	8270	GCMS semivolatile	In	mkeohane	10/29/2012 12:27:50 PM
05	005	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:50:05 AM
05	005	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 10:34:51 AM
05	007	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 12:27:50 PM
05	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:34:03 AM
05	006	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 10:34:51 AM
05	009	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 12:27:50 PM
05	009	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:35:30 AM
05	007	SM2540C	Total Dissolved Solids	In	mkeohane	10/29/2012 10:34:51 AM
05	007	SM2540C	Total Dissolved Solids	Out	Devon Thompson	10/30/2012 8:01:58 AM
05	007	SM2540C	Total Dissolved Solids	In	Devon Thompson	10/30/2012 10:28:08 AM
06	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	mkeohane	10/29/2012 10:34:52 AM
06	001	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/30/2012 2:04:54 PM
06	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/30/2012 2:57:42 PM
06	002	6010	Metals	In	mkeohane	10/29/2012 10:34:52 AM
06	002	6010	Metals	Out	Theresa Wolf	11/1/2012 9:58:04 AM
06	002	6010	Metals	In	Theresa Wolf	11/1/2012 6:32:41 PM
06	003	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:52 AM
06	004	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:52 AM
06	005	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:52 AM
06	005	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:12:13 AM
06	006	8270	GCMS semivolatile	In	mkeohane	10/29/2012 10:34:52 AM

06	006	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:50:08 AM
06	007	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 10:34:52 AM
06	008	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 12:27:50 PM
06	008	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:34:08 AM
06	008	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 10:34:52 AM
06	010	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 12:27:50 PM
06	008	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:35:32 AM
06	001	SM2540C	Total Dissolved Solids	In	mkeohane	10/29/2012 10:34:52 AM
06	001	SM2540C	Total Dissolved Solids	Out	Devon Thompson	10/30/2012 8:02:02 AM
06	001	SM2540C	Total Dissolved Solids	In	Devon Thompson	10/30/2012 10:28:12 AM
07	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	mkeohane	10/29/2012 10:34:53 AM
07	001	300.1	Determination of Inorganic Anions by Ion Chromatography	Out	Troy Roberts	10/30/2012 2:04:52 PM
07	001	300.1	Determination of Inorganic Anions by Ion Chromatography	In	Troy Roberts	10/30/2012 2:57:42 PM
07	002	6010	Metals	In	mkeohane	10/29/2012 10:34:53 AM
07	002	6010	Metals	Out	Theresa Wolf	11/1/2012 9:58:02 AM
07	002	6010	Metals	In	Theresa Wolf	11/1/2012 6:32:37 PM
07	003	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:53 AM
07	004	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:53 AM
07	005	8260	Volatile Organic Compounds	In	mkeohane	10/29/2012 10:34:53 AM
07	004	8260	Volatile Organic Compounds	Consumed	Marcell Stephens	10/31/2012 10:12:18 AM
07	006	8270	GCMS semivolatile	In	mkeohane	10/29/2012 10:34:53 AM
07	007	8270	GCMS semivolatile	In	mkeohane	10/29/2012 12:27:50 PM
07	006	8270	GCMS semivolatile	Consumed	Ryan Bennett	10/31/2012 9:50:10 AM
07	007	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 10:34:53 AM
07	009	8270_SIM	GCMS semivolatile SIM	In	mkeohane	10/29/2012 12:27:50 PM

07	007	8270_SIM	GCMS semivolatile SIM	Consumed	Ryan Bennett	10/30/2012 9:34:13 AM
07	008	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 10:34:53 AM
07	011	FL-PRO	Petroleum Hydrocarbons	In	mkeohane	10/29/2012 12:27:50 PM
07	008	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	10/30/2012 9:35:35 AM
07	011	FL-PRO	Petroleum Hydrocarbons	Consumed	Ryan Bennett	11/2/2012 11:55:40 AM
07	001	SM2540C	Total Dissolved Solids	In	mkeohane	10/29/2012 10:34:53 AM
07	001	SM2540C	Total Dissolved Solids	Out	Devon Thompson	10/30/2012 8:02:04 AM
07	001	SM2540C	Total Dissolved Solids	In	Devon Thompson	10/30/2012 10:28:13 AM

Addendum

131112 1343

Letter of Acceptance

Customer Name:	CH2M Hill
Date and Time Received:	10/27/2012 11:50:00 AM
Date to be Reported:	11/16/2012
Laboratory Submission Number/SDG:	3507432

Project: NASKW TFS 426847.PP.FW.09

Samples: The submission consisted of 7 samples, including QC, with sample identification shown in the attached data tables.

Tests: The Samples will be analyzed for EPA methods: 300.1, 6010, 8260, 8270, 8270_SIM, FL-PRO, SM2520B_OL, SM2540C.

Sample Custody/COC discrepancies:

None.

Notes:

Temp 4.7,5.7,3.3,4.1
PH< 2 8260, 6010,FL-PRO
300.1= Chloride and Sulfate
6010= Mn
SM2520OL was sent to the Agawam lab

Distribution of Report to:

CH2M Hill
Attn: Greg Rowell

Note: Submitted material will be retained for 30 days unless otherwise requested by client or consumed in analysis. Spectrum Analytical letters and reports are for the exclusive use of the client to whom they are addressed. Our letters and reports apply to the sample tested and are not necessarily indicative of the qualities of apparently identical or similar materials.

Log-in Report

Level: 3

Total of: 37 analyses on 7 samples (including QC) *30-Oct-12*

Report/SDG #: 3507432

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-05	350743201		W	10/25/2012 10:30:00 AM	10/27/2012 11:50:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-12	350743202		W	10/25/2012 12:05:00 PM	10/27/2012 11:50:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-01	350743203		W	10/25/2012 2:05:00 PM	10/27/2012 11:50:00 AM

Method		
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-TB-2	350743204		W	10/25/2012	10/27/2012 11:50:00 AM

Method		
8260	Volatile Organic Compounds	8260

Report/SDG #: 3507432

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-8D	350743205		W	10/26/2012 12:15:00 PM	10/27/2012 11:50:00 AM

Method		
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO
SM2520B_OL	Salinity	2520B
SM2540C	Total Dissolved Solids	SM2540C

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-04	350743206		W	10/26/2012 1:05:00 PM	10/27/2012 11:50:00 AM

Method		
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO
SM2520B_OL	Salinity	2520B
SM2540C	Total Dissolved Solids	SM2540C

Report/SDG #: 3507432

SampleID	LAB ID	StationID	Matrix	SampleDate	ReceiveDate
Q2-TFS-MW-16	350743207		W	10/26/2012 2:40:00 PM	10/27/2012 11:50:00 AM

Method		
300.1	Determination of Inorganic Anions by Ion	300.1
6010	Metals	6010
8260	Volatile Organic Compounds	8260
8270	GCMS semivolatile	8270
8270_SIM	GCMS semivolatile SIM	8270 SIM
FL-PRO	Petroleum Hydrocarbons	FL-PRO
SM2520B_OL	Salinity	2520B
SM2540C	Total Dissolved Solids	SM2540C

Mark Gudnason [Tampa]

From: Mark Gudnason [Tampa]
Sent: Wednesday, November 07, 2012 2:59 PM
To: Bethany.Garvey@CH2M.com; Camden.Robinson@CH2M.com
Subject: FW: 3507432-8270-NASKW

Good afternoon.
This will be in the case narrative for the referenced method and SDG.

A. Calibration:

All acceptance criteria were met with the exception of:

Kepone exceeded the Max % RSD of 15% (35.9%) for the initial calibration. This compound has historically been a poor performer. No further action was taken, since this compound was not detected in any samples.

SSC1124049 was the second source verification standard analyzed with the initial calibration on 10/11/12. The %D was over the 20% limit for the following compounds: 1,3-Dinitrobenzene (+21.4%), 4-Nitroquinoline-1-oxide (+24%), Methapyriline (-29.8%), Aramite (-24.9%), 1,3,5-Trinitrobenzene (-43.6%), Kepone (+78.1%). No further action was taken, since these compounds were not detected in any samples and were a result of a discrepancy between the primary and secondary standards.

CCV1129934 was analyzed with the water samples on 10/31/12. The %D was over the 20% limit for the following compounds: Safrole (+21.1%), Kepone (+76.3%). No further action was taken, since these compounds were not detected in any samples.

B. Blanks:

All acceptance criteria were met.

C. Surrogates:

All acceptance criteria were met.

D. Spikes:

1. Laboratory Control Spikes (LCS)

All acceptance criteria were met with the exception of:

LCS 151400LCS was analyzed with the water samples extracted on 10/31/02. The following analytes were recovered above criteria: 1,3-Dinitrobenzene at 120 % with criteria of (61-112), 2-Chloronaphthalene at 107 % with criteria of (50-105), Chlorobenzilate at 103 % with criteria of (58-101), Pentachloronitrobenzene (PCNB) at 108 % with criteria of (60-104), Safrole at 113 % with criteria of (52-100). Since these compounds were recovered only slightly above criteria, no further action was taken. The following analytes had marginal exceedance limit failures: a,a-Dimethylphenethylamine at 0 % with criteria of (60-140), Safrole at 113 % with criteria of (44-108). No further action was taken. None of these compounds were detected in any samples.

Samples coded accordingly.

Appendix

131112 1343

Supplemental Data

Report Date:
06-Nov-12 12:58

☑ Final Report
☐ Re-Issued Report
☐ Revised Report

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

Laboratory Report

Spectrum Analytical, Inc.
8405 Benjamin Road Suite A
Tampa, FL 33634
Attn: Mark Gudnason

Project: NAS Key West - Key West, FL
Project #: 3507432

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SB59199-01	Q2-TFS-MW-8D	Water	26-Oct-12 12:15	01-Nov-12 10:50
SB59199-02	Q2-TFS-MW-04	Water	26-Oct-12 13:05	01-Nov-12 10:50
SB59199-03	Q2-TFS-MW-16	Water	26-Oct-12 14:40	01-Nov-12 10:50

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87600/E87936
Maine # MA138
New Hampshire # 2538
New Jersey # MA011/MA012
New York # 11393/11840
Pennsylvania # 68-04426/68-02924
Rhode Island # 98
USDA # S-51435

Authorized by:

Nicole Leja
Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 7 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

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Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

The samples were received 1.7 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

There is no relevant protocol-specific QC and/or performance standards non-conformances to report.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-TFS-MW-8D SB59199-01	3507432	Water	26-Oct-12 12:15	01-Nov-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	10.7		ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-TFS-MW-04 SB59199-02	3507432	Water	26-Oct-12 13:05	01-Nov-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	< 1.00		ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Q2-TFS-MW-16 SB59199-03	3507432	Water	26-Oct-12 14:40	01-Nov-12

CAS No.	*Analyte(s)*	*Result*	*Flag*	*Units*	**RDL*	*MDL*	*Dilution*	*Method Ref.*	*Prepared*	*Analyzed*	*Analyst*	*Batch*	*Cert.*
General Chemistry Parameters													
	Salinity	< 1.00		ppt (1000)	1.00	0.144	1	SM 2520	05-Nov-12	05-Nov-12	BD	1227157	

General Chemistry Parameters - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1227157 - General Preparation										
Reference (1227157-SRM1)						Prepared & Analyzed: 05-Nov-12				
Salinity	**10.3**		ppt (1000)	1.00	10.0		103	90-110		
Reference (1227157-SRM2)						Prepared & Analyzed: 05-Nov-12				
Salinity	**10.3**		ppt (1000)	1.00	10.0		103	90-110		

Notes and Definitions

dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by:
Kimberly Wisk

3B59199 JB

Monday, October 29, 2012 2:34:56 PM

Spectrum Analytical, Inc.
8405 Benjamin Rd., Suite A
Tampa, FL 33634
(P) 813-888-9507 (F) 813-889-7128

CHAIN-OF-CUSTODY RECORD

WorkOrder: 3507432

Send to:
Spectrum Analytical, Inc.
11 Almgren Dr.
Agawam, MA 01001
Phone: 800-789-9115 FAX: 413-789-4076

Project: NAS Key West
Project Name NASKW TFS 426847.PP.FW.09

Report To: Mark Gudnason, Ext 1
Report Level: 3 MG
Report RLU or MDLU: ~~MDLU~~ LOD U
J Code results between ~~MDL~~ and ~~RL~~ LOD LOQ

Sample ID 59199-		LabID	Collection Date	Date Needed	Mtx	ST	Cont	SM2520B (Requested Tests)	Comments
Q2-TFS-MW-8D	01	350743205	10/26/2012 12:15:00 PM	11/12/2012	W	N	1	X	
Q2-TFS-MW-04	02	350743206	10/26/2012 1:05:00 PM	11/12/2012	W	N	1	X	
Q2-TFS-MW-16	03	350743207	10/26/2012 2:40:00 PM	11/12/2012	W	N	1	X	

Comments: DODv4.2 LOD=2xMDL. Send ELD.□ / 8260B, 8270D, 6010C / Use only the clients samples for QC (MS/MSD). Do not report any samples that do not appear on the COC. In-house lab QC limits must accompany report, regardless if we are using them are not. Any preliminary reports are expected to contain analytical results/values that will NOT change from the results/values reported in the final data package. For 8270, SOW spike required. See Section Leader.□

		Date/Time			Date/Time
Relinquished by:	M. K	10/29/12 15:20	Received by:		
Relinquished by:	FedEx	11/1/12	Received by:	JB 11/1/12	1.7 iced 10:50am
Relinquished by:			Received by:		

292

3507432

SAMPLE RECEIVING
AGAWAM
11 ALMGREN DRIVE

AGAWAM MA 01001

4640 0771 8681

End Of Report

131112 1343