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Semiannual Groundwater Monitoring Report Basewide Groundwater Sampling (July 2015)

Former Mare Island Naval Shipyard Vallejo, California

December 2015

Prepared for:
Department of the Navy
Base Realignment and Closure
Program Management Office West
San Diego, California

Prepared by:
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Prepared under:
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Contract Task Order 0004
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Submitted by:
Construction Engineering Services, LLC

	November 25, 2015
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Executive Summary

Construction Engineering Services, LLC (CES), a limited liability corporation established as a joint venture between J.M. Waller Associates, Inc. (J.M. Waller), and Engineering/Remediation Resources Group, Inc. (ERRG), prepared this Semiannual Groundwater Monitoring Report (first of 2015) on behalf of the Department of the Navy (Navy), under Contract No. N62473-11-D-2215, Contract Task Order No. 0004. This report summarizes the results of the July 2015 groundwater monitoring activities conducted as part of the Basewide Groundwater Monitoring Program (BGMP) located at the former Mare Island Naval Shipyard (Mare Island) in Vallejo, California.

The BGMP at Mare Island was established to collect and report groundwater monitoring data in support of ongoing environmental restoration efforts at multiple sites. Building 742, Former Degreasing Plant (FDP); Defense Reutilization and Marketing Office (DRMO) South Site; Installation Restoration Site 04 (IR04); Paint Waste Area (PWA); Former Underground Storage Tank (UST) 993-4 Site; Unexploded Ordnance (UXO) 3 – Dredge Pond 3E, Northern Marine Corps Firing Range; and UXO 7 – South Shore Area (SSA) are all included in the BGMP, which is being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) framework. While the BGMP includes all sites mentioned above, only the site monitored during this event (Building 742, FDP) is included in this report.

Monitoring activities performed at Building 742, FDP during this event included measuring groundwater elevations; collecting representative groundwater samples from selected wells; analyzing the samples for contaminants of concern; performing third-party data validation; and compiling, tabulating, analyzing, and presenting the results in this report. Monitoring activities were performed in accordance with the "Final Work Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California" (CES, 2014a), "Addendum 1 to the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment, Former Mare Island Naval Shipyard, Vallejo, California" (Addendum 1 to the Sampling and Analysis Plan [SAP]) (CES, 2014b), and "Addendum 2 to the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment, Former Mare Island Naval Shipyard, Vallejo, California" (Addendum 2 to the SAP) (CES, 2015).

In July 2015, CES conducted the semiannual groundwater monitoring event at Mare Island (first of 2015). Monitoring at Building 742, FDP included measuring groundwater elevations and collecting groundwater samples at six wells (D1C85W01R, D1C85W02R-A, D1C85W03, D1C85W04, D1C85W06, and D1C85W07). All six groundwater samples were analyzed for volatile organic compounds (VOCs). Two of the groundwater samples, collected from wells D1C85W06 and D1C85W07, were also analyzed for

specific dissolved metals: arsenic, iron, and manganese. Analytical results were compared to project action limits (PALs) listed in the SAP and addenda to the SAP (CES, 2014a; CES, 2014b; CES, 2015).

Two VOCs, 1, 4 - dichlorobenzene and vinyl chloride, were detected at concentrations exceeding their respective PALs in the primary and field duplicate samples from one well (D1C85W06) at Building 742, FDP. Arsenic, iron, and manganese were detected in both samples collected from wells D1C85W06 and D1C85W07, but none at concentrations exceeding PALs.

The analytical results of this monitoring event were evaluated to determine if the BGMP required optimization. No changes to the BGMP are recommended at this time.

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Abbreviations and Acronyms

amsl	above mean sea level
BGMP	basewide groundwater monitoring program
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES	Construction Engineering Services, LLC
COCs	chemicals of concern
C&T	Curtis & Tompkins Laboratories
DOT	U.S. Department of Transportation
DRMO	Defense Reutilization and Marketing Office
EPA	U.S. Environmental Protection Agency
ERRG	Engineering/Remediation Resources Group, Inc.
FDP	Former Degreasing Plant
ft	feet
IA	Investigation Area
IDW	investigation-derived waste
IR	Installation Restoration
IR04	Installation Restoration Site 4
J.M. Waller	J.M. Waller Associates, Inc.
L	liter
LDC	Laboratory Data Consultants, Inc.
LOQ	limit of quantitation
Mare Island	former Mare Island Naval Shipyard
MEC	munitions and explosives of concern
mg/L	milligrams per liter
µg/L	micrograms per liter
MS/MSD	matrix spike/matrix spike duplicate
Navy	Department of the Navy
NTCRA	non-time-critical removal action
PAL	project action limit

Abbreviations and Acronyms *(continued)*

PCBs	polychlorinated biphenyls
PWA	Paint Waste Area
QA	quality assurance
QC	quality control
RI	Remedial Investigation
RPD	relative percent difference
SAP	Sampling and Analysis Plan
SOPs	standard operating procedures
SSA	South Shore Area
TOC	top of casing
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOCs	volatile organic compounds

Section 1. Introduction

Construction Engineering Services, LLC (CES), a limited liability corporation established as a joint venture between J.M. Waller Associates, Inc. (J.M. Waller), and Engineering/Remediation Resources Group, Inc. (ERRG), has prepared this Semiannual Groundwater Monitoring Report (first of 2015) on behalf of the Department of the Navy (Navy). This report summarizes the results of the groundwater monitoring activities conducted in July 2015 at the former Mare Island Naval Shipyard (Mare Island) in Vallejo, California (Figure 1).

The Basewide Groundwater Monitoring Program (BGMP) at Mare Island was established to collect and report groundwater monitoring data in support of ongoing environmental restoration efforts at multiple sites. Building 742, Former Degreasing Plant (FDP); Defense Reutilization and Marketing Office (DRMO) South Site; Installation Restoration Site 04 (IR04); Paint Waste Area (PWA); Former Underground Storage Tank (UST) 993-4 Site; Unexploded Ordnance (UXO) 3 – Dredge Pond 3E, Northern Marine Corps Firing Range; and UXO 7 – South Shore Area (SSA) are all included in the BGMP, which is being addressed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) framework. While the BGMP includes all sites mentioned above, only the site monitored during this event (Building 742, FDP) is included in this report.

1.1. SCOPE OF WORK

The BGMP was designed to collect samples to assess concentrations of chemicals of concern (COCs) in groundwater at the sites. Monitoring activities included: measuring groundwater elevations; collecting representative groundwater samples from selected wells; analyzing the samples for COCs; performing third-party data validation; and compiling, tabulating, analyzing, and presenting the results in this report. Monitoring activities were performed in accordance with the "Final Work Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California" (CES, 2014a), which included the sampling and analysis plan (SAP) for groundwater sampling, "Addendum 1 to the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment, Former Mare Island Naval Shipyard, Vallejo, California" (Addendum 1 to the SAP) (CES, 2014b), and "Addendum 2 to the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment, Former Mare Island Naval Shipyard, Vallejo, California" (Addendum 2 to the SAP) (CES, 2015).

1.2. REVISIONS TO BGMP

The "Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment, Former Mare Island Naval Shipyard, Vallejo, California" (CES, 2014a) was designed to utilize a dynamic work strategy, with input from the Navy and regulators, through which the well lists and sampling/measurement frequencies are revised as needed to be consistent with CERCLA documents, or professional judgment when activities are not specified in CERCLA documents. A summary of the revisions for this reporting period are described in the following sections.

1.2.1. Well Sampling List Revisions

For this groundwater monitoring event, the Navy revised the list of wells to be monitored in a memo dated June 4, 2015. The memo defined the list of wells and analyses for sampling to include only Building 742, FDP wells D1C85W01R, D1C85W02R-A, D1C85W03, D1C85W04, D1C85W06, and D1C85W07. The Navy revised the monitoring well list for this event as a result of the CERCLA status of the other project sites included in the BGMP at the time: DRMO South, Former UST 993-4, IR04, PWA, UXO Site 03, and UXO Site 07.

1.2.2. Target Analyte Revisions

No revisions to the target analyte list were made in the current reporting period.

1.2.3. Depth to Water Measurement Revisions

No revisions to depth to water measurements were made in the current reporting period.

1.2.4. Sampling Frequency Revisions

No revisions to sampling frequencies were made in the current reporting period.

1.2.5. Future Revisions to BGMP

The Navy will conduct optimization of the monitoring program at appropriate milestones in the BGMP process (e.g., in response to new or revised applicable CERCLA documents, and at periodic intervals following groundwater monitoring events). This includes evaluating the well field configuration, target analytes, and sampling frequency. Laboratory analytical results will be evaluated to optimize the BGMP to determine which wells should be included or excluded in subsequent monitoring events based on detections or lack thereof. Additional well list revisions may include monitoring required for specific data objectives. No changes to the BGMP are recommended at this time.

1.3. DOCUMENT ORGANIZATION

This semiannual groundwater monitoring report is organized into the following sections:

- Section 1 – Introduction
- Section 2 – Site Background
- Section 3 – Groundwater Monitoring Field Activities
- Section 4 – Laboratory Data Analysis and Validation
- Section 5 – Groundwater Monitoring Results
- Section 6 – Summary and Recommendations
- Section 7 – References

Additionally, the following documents and information are appendices to this report:

- Appendix A – Field Forms: contains field forms including groundwater purge forms and water level field logs
- Appendix B. – Waste Management Documentation: contains waste management documentation
- Appendix C. – Analytical Data: presents laboratory analytical data reports and data validation reports

Section 2. Site Background

This section describes the location, physical characteristics, operational history, and environmental condition of Mare Island and briefly describes the site where groundwater monitoring was conducted for this event under the BGMP.

2.1. MARE ISLAND NAVAL SHIPYARD LOCATION

Mare Island is located on a peninsula that is approximately 3.5 square miles in Solano County, northeast of San Francisco, California (Figure 1). Mare Island is bordered by San Pablo Bay to the west, the Napa River to the east, and the Carquinez Strait to the south. Mare Island is separated from the city of Vallejo by the Mare Island Strait, a portion of the Napa River. The primary entrance to Mare Island is through a causeway located at Tennessee Street and Wilson Avenue, and the secondary entrance is from Highway 37 at the north end of the island (Battelle, 2010).

2.2. PHYSICAL SETTING

The following subsections describe the general geology, hydrology, topography and biological conditions, climate, and future land use for Mare Island.

2.2.1. Geology and Hydrogeology

Mare Island has been modified from an island into a peninsula through dredge and fill operations. The original island was approximately 1,000 acres of area and 300 acres of surrounding wetlands (Trevet, 2014). Historical Navy maps indicate that the original island was composed of bedrock outcrop surrounded by tule marshes. The placement of dredging spoils increased the footprint of the island to the north and west to form the current contours (CE2-Kleinfelder Joint Venture, 2014). In general, three geologic units (listed from top to bottom) are present at Mare Island:

- Artificial fill material (heterogeneous layer consisting of dredged material – clay, silt, sand, and debris in varied proportions)
- Unconsolidated natural deposits (silty clays [commonly referred to as Young Bay Mud] and fine-grained material from weathering of bedrock)
- Bedrock (weathered sandstone, siltstone, and shale)

The artificial fill layer ranges in depth from 3 to 14 feet below ground surface (bgs), averaging a thickness of 6 feet. Younger Bay Mud has been observed from 7 to 9 feet bgs up to 50 feet bgs (CE2-Kleinfelder Joint Venture, 2014; Trevet, 2014).

Mare Island has three primary water-bearing zones: shallow, intermediate, and deep. The shallow water-bearing zone includes both the artificial fill and naturally deposited material that is intersected by the water table. Both the intermediate and deep zones correspond to the intermediate and lower sands located in the natural sediments below the artificial fill layer. The shallow unconfined water-bearing zone was identified as extending from the water table to 28 feet bgs (Battelle, 2010). Groundwater at IR04 and PWA is within the shallow water-bearing zone that meets exception (a) of State Water Resources Control Board Resolution No. 88-63 (as revised by Resolution No. 2006-008) and is not likely to be used as a source of drinking water (State Water Resources Control Board, 2006).

Groundwater ranges from 2 to 8 feet bgs and groundwater flow direction, based on water levels measured in monitoring wells in surrounding areas, indicates flow direction varies seasonally across Mare Island. Groundwater depth fluctuates approximately 3 feet with seasonal variations. The shallow water aquifer has low groundwater yields and naturally high salinity (CE2-Kleinfelder Joint Venture, 2014; Trevet, 2014).

2.2.2. Topography

Mare Island includes an area of approximately 5,400 acres, where 1,400 acres are dry land and 3,000 acres are a combination of tidal and nontidal wetlands and dredge sediment ponds. Generally, Mare Island is relatively flat, ranging in elevation from sea level to 284 feet above sea level at the southern end.

2.2.3. Biological Conditions

Several habitats are present at Mare Island: disturbed uplands, tidal mudflats, seasonal and tidally influenced wetlands, exposed shoreline, and open tidal waters. In the wetland habitats, tidal and nontidal areas support the growth of coastal salt marsh vegetation and pickleweed (*Salicornia pacifica*) marsh habitat seasonally. Protected species in the wetland areas of Mare Island include the salt harvest mouse (*Reithrodontomys raviventris*). Other protected species that may be present in habitat at Mare Island (but are less likely to be encountered based on limited habitat present) include the California clapper rail (*Rallus longirostris obsoletus*) and California black rail (*Laterallus jamaicensis coturniculus*). The California clapper rail is a federal- and state-listed endangered species, and state fully protected. The California black rail is listed as a state threatened species, and state fully protected (CE2-Kleinfelder Joint Venture, 2014).

2.2.4. Climate

The climate at Mare Island is characterized by warm, dry summers and cool, wet winters, with an average annual temperature of 44.5°F, the warmest month, on average, is July with an average temperature of 61.5°F, and the coolest month on average, is January, with an average temperature of 31.5°F. Prevailing winds are from the west at 5 to 10 knots. The average annual rainfall of 41.4 inches occurs primarily between October and May (Weatherbase, 2015).

2.2.5. Future Land Use Considerations

The Mare Island Specific Plan (City of Vallejo, 2007), envisions the future of Mare Island as a multi-use community with a balance of industrial, office, commercial, residential, educational, recreation cultural, and open spaces to meet the needs of future generations. The area around Building 742, FDP is planned for future industrial reuse.

2.3. DESCRIPTION OF BUILDING 742, FORMER DEGREASING PLANT

The following sections briefly describe the physical characteristics and operational history of the site in which groundwater monitoring was performed during this semiannual event. While the BGMP includes eight sites (i.e., Building 742, FDP; DRMO South Site; Former UST 993-4; IR04; PWA; UXO 3 – Dredge Pond 3E; Northern Marine Corps Firing Range; and UXO 7 – SSA), only the site monitored during this event (Building 742, FDP) is included in this report. The environmental conditions at the site relevant to the chemicals detected in groundwater that may require further monitoring are briefly described below. Figure 2 shows the site boundary and groundwater monitoring wells measured and sampled during this semiannual monitoring event.

Building 742 is located in the central-eastern area of Mare Island and formerly was an ordnance machine shop. The FDP was located next to Building 742, and wastewater generated during degreasing operations was discharged to sumps that led to the storm water drainage system (SulTech, 2007). Previous investigations identified elevated concentrations of chlorinated volatile organic compounds (VOCs) in water and residue samples collected from Manhole D1-C85, which previously received storm water from the FDP. In June 2010, a non-time-critical removal action (NTCRA) was performed to remove the contaminant source at the FDP, within the storm water drainage system, and around Manhole D1-C85 (Tetra Tech EC, Inc., 2011). Building 742, FDP was transferred to the City of Vallejo as part of the Eastern Early Transfer Parcel; however, investigation of Building 742, FDP continues. After regulatory agency concurrence to the Removal Action Summary Report (Tetra Tech EC, Inc., 2012) is obtained, the Building 742, FDP site will be included in the Investigation Area C2 Remedial Action Plan being prepared by the City of Vallejo and its developer, Lennar Mare Island.

Groundwater and soil gas samples were collected after the NTCRA in November 2011. Analytical results indicated that VOC concentrations near former Manhole D1-C85 had decreased; however, the results of additional soil samples near Manhole D1-C85 identified VOCs at concentrations in soil that could impact groundwater and soil gas. Therefore, additional removal of remaining impacted source materials was recommended in this area to achieve site closure (Tetra Tech EC, Inc., 2012). Additional excavation was performed in June and July 2013, and an initial round of groundwater and soil gas samples was collected in August 2013 to confirm the effectiveness of this removal action (NOREAS, Inc., 2013). Four rounds of groundwater and soil gas samples have been conducted since August 2013. This additional monitoring is being conducted primarily to supplement the Removal Action Summary Report. Additional site

information can be found in the Removal Action Summary Report and Remedial Action Plan (Tetra Tech EC, Inc., 2010 and 2011).

Section 3. Groundwater Monitoring Field Activities

This section summarizes the field methodology and activities including mobilization and site preparation, groundwater sampling, and the analytical methods used for the groundwater monitoring. The July 2015 field activities were conducted under the approved SAP (CES, 2014a) and addenda to the SAP (CES, 2014b; CES, 2015).

3.1. MOBILIZATION AND SITE PREPARATION

Equipment and materials were mobilized to the site as needed to perform the work on a daily basis (July 27-29, 2015). CES set up a work zone and a support zone (for first-aid kits and a break area). The work zone was set up around each individual well for the duration of monitoring activity at that well. When monitoring was complete, the work zone was moved to the next well. The support zone was established on the tailgate of a work truck during sampling. A first-aid kit, eyewash station, air horn, and project documents were also placed in the truck within close proximity to each work area. A break area with shade and bottled water was provided in the cab of the truck.

3.2. GROUNDWATER SAMPLING

This section describes the procedures for sampling groundwater at the monitoring wells at Mare Island. The SAP (CES, 2014a) provides details on sample management procedures, field procedures, sample analyses, and provides the sampling SOPs, which were followed during field activities.

Table 1 provides a list of existing groundwater monitoring wells included in this semiannual groundwater sampling event. Field forms including the groundwater purge forms and water level field logs are presented in Appendix A.

3.2.1. Groundwater Elevation Measurements

Prior to sample collection, CES personnel measured groundwater elevations at each well included in Table 1. Table 2 provides measured groundwater elevations, available groundwater monitoring well construction data (i.e., top of casing [TOC] elevation, ground surface elevation, and screened interval). Groundwater level measurements were taken in a coordinated groundwater sounding event prior to purging and sampling any of the wells at that site. Data were used to prepare a groundwater potentiometric contour map. The water level field log is presented in Appendix A. Groundwater levels were measured in accordance with ERRG SOP FS-020, Water Level Measurements (CES, 2014a). Measurements were made from the top of the casing to the groundwater surface using a water level indicator. The water level indicator was decontaminated in accordance with the procedures described in ERRG SOP FS-010, Decontamination

of Contact Sampling Equipment (CES, 2014a), after each measurement was taken and before proceeding to the next well location.

3.2.2. Purging and Environmental Parameter Data Collection

A low-flow (or micro-purge) purging and sampling method designed to collect high-quality formation water samples was used for the groundwater monitoring wells in accordance with ERRG SOP FS-023, Low Flow/Micro-Purge Well Sampling (CES, 2014a) and U.S. Environmental Protection Agency (EPA) guidance for low-flow well sampling (EPA, 2010). Personnel used a bladder pump to draw water from the well at a rate of approximately 100 to 500 milliliters per minute. The pump was started at the lowest speed and slowly increased until discharge began. The water level was monitored and the pump speed adjusted until there was little or no drawdown (less than 0.3 foot). The temperature, pH, dissolved oxygen, oxidation-reduction potential, and conductivity of the groundwater were recorded at regular intervals (approximately every three to five minutes) using a flow-through cell to determine when the groundwater sample was representative of formation water. The parameters were measured using a YSI-6920 multi-parameter instrument from a sealed flow-through cell during the low-flow sampling process. The parameters were considered stable when dissolved oxygen and turbidity varied by less than 10%, temperature and specific conductivity varied by less than 3%, pH varied by less than 0.1 units, and oxidation-reduction potential varied by less than 10 millivolts, as described in the SAP (CES, 2014a). Purged groundwater was transferred to a U.S. Department of Transportation (DOT)-approved 55-gallon drum and stored at the Waste Storage Area at Building 993 pending waste characterization and disposal.

All groundwater environmental parameters were documented on the groundwater purge form and general field observations and site activities were documented on field forms (or in logbooks). Completed field forms and data sheets are included in Appendix A of this report.

3.2.3. Groundwater Sample Collection

Groundwater samples were collected from monitoring wells (listed in Table 1) using a bladder pump with dedicated polyethylene tubing (following the low-flow sampling technique described above) immediately after the environmental parameters measured by the flow-through cell stabilized.

Volatile organic analysis vials were filled first (including aliquots for quality control [QC] and quality assurance [QA] analysis) for VOC analysis, followed by containers for analysis of dissolved metals (arsenic, iron, and manganese, only). Following primary sample collection, additional sample volumes were collected from selected wells for QA and QC purposes, as described in detail in Section 3.3. Samples collected for QA/QC were collected in the same manner as primary samples. Appendix A contains field logs and data tables pertaining to groundwater sample collection during this event.

3.2.4. Equipment Decontamination

New, clean tubing was used at each monitoring well and discarded after each use. All non-dedicated sampling equipment and field measurement devices (i.e., water level meter) were decontaminated before and after collecting each groundwater sample to prevent cross-contamination of samples. Complete decontamination procedures for sampling equipment and field measuring devices are further described in the SAP (CES, 2014a).

3.3. QUALITY CONTROL SAMPLES

QC sample data were generated to assess the precision and accuracy of the analytical results. The types, numbers, and frequencies of field QC samples are specified in the SAP (CES, 2014a) and addenda to the SAP (CES, 2014b; CES, 2015). Field QC samples collected during this groundwater sampling event included two equipment blanks, one source-water blank, and one trip blank. Field duplicate samples for groundwater were collected at a rate of 1 per every 10 field samples. Matrix spike/matrix spike duplicate (MS/MSD) samples for groundwater were collected at a frequency of 1 per every 20 field samples. Equipment blanks were collected at a frequency of one per day per dedicated piece of equipment and analyzed for the same sample analyses conducted that day. Equipment blanks were collected to evaluate if decontamination procedures were adequate to prevent cross-contamination between sample locations. Source blanks were collected at a frequency of one per source and analyzed for all project analyses. Source blanks were collected to evaluate if the source of decontamination water introduced outside contaminants to the sampling equipment. Trip blanks (provided by the laboratory) were included at a rate of one per cooler when VOCs were being sampled and analyzed for VOCs to determine if outside contaminants affected the sample during transport to the laboratory.

3.4. INVESTIGATION-DERIVED WASTE MANAGEMENT

CES managed all waste generated during the course of the project. Purged groundwater and decontamination water generated during groundwater monitoring activities were collected in a 55-gallon drum and stored in the covered and locked Waste Storage Area at Building 993. Personal protective equipment waste generated during field activities consisted mainly of nitrile sampling gloves and used tubing, which were collected in a plastic trash bag and disposed of in municipal trash bins. Investigation-derived waste (IDW) was characterized and disposed of in accordance with applicable local, state, and federal requirements. IDW documentation is provided in Appendix B. The waste management procedures for this project are defined in the Waste Management Plan (Appendix C of the Work Plan [CES, 2014a]).

3.5. FIELD DOCUMENTATION COLLECTED

Field documentation protocols included the use of field logbooks, a water elevation form, groundwater purge and sample collection forms, air monitoring logs, health and safety forms, waste inventory log, and

chain-of-custody forms. Contractor daily production reports and contractor quality control reports were also developed daily.

3.6. DEVIATIONS TO THE BGMP

No deviations to the BGMP occurred during this semiannual groundwater monitoring event.

Section 4. Laboratory Data Analysis and Validation

The following sections summarize the laboratory analysis (and associated data validation) of the groundwater samples collected during the July 2015 monitoring event.

4.1. GROUNDWATER SAMPLE LABORATORY ANALYSIS

Upon receipt at the analytical laboratory, groundwater and QA/QC samples were logged and analyzed in accordance with the SAP (CES, 2014a). Laboratory data analysis reports are available in Appendix C1. Samples were analyzed for the following chemicals (dependent on site contaminants):

- Select dissolved metals by EPA Method 6010C (EPA, 1992)
- VOCs by EPA Method 8260C (EPA, 2008)

4.2. THIRD PARTY DATA VALIDATION

Groundwater monitoring data were subject to a data quality assessment (review, verification, validation, and usability assessment). Sample chains of custody were reviewed by the Project Chemist, Project Manager, and Quality Control Manager upon submittal to the analytical laboratory from the field crew for accuracy in sample identification, analytical methods, QC samples, etc. In accordance with the project-specific SAP Worksheets 34 – 36, (CES, 2014a), the analytical data packages delivered by Curtis & Tompkins Laboratories (C&T), in Berkeley, California, were initially examined by the Project Chemist against project requirements and chain-of-custody records (i.e., holding times, sample handling, analytical methods, sample identification, laboratory data qualifiers, QC samples, etc.). If project requirements were met, the packages were released to the data validator, Laboratory Data Consultants, Inc. (LDC) for validation. The data validator performed the requested level of data validation and prepared validation reports, adding or changing laboratory qualifiers as needed. The data quality assessment was performed in accordance with Worksheet #37 of the SAP (CES, 2014a). In accordance with the SAP (CES, 2014a) and Addenda 1 and 2 to the SAP (CES, 2014b; CES, 2015), 80 percent of the data underwent Level III validation and 20 percent of the data underwent Level IV validation. Appendix C2 contains the data validation reports from this semiannual groundwater monitoring event. Data validation results are discussed in Section 5.4.

4.3. DEVIATIONS TO SAP

No deviations were necessary in July 2015 for this limited sampling event.

Section 5. Groundwater Monitoring Results

The following sections summarize the groundwater monitoring results during the July 2015 monitoring event.

5.1. GROUNDWATER LEVEL MONITORING

Groundwater level monitoring data, as measured in July 2015, for Building 742, FDP are summarized below. Groundwater elevation data are presented in Table 2.

5.1.1. Building 742, FDP

Groundwater levels at six wells (D1C85W01R, D1C85W02R-A, D1C85W03, D1C85W04, D1C85W06, and D1C85W07) were measured at Building 742, FDP on July 28, 2015. The minimum and maximum groundwater elevations observed for this site during the monitoring event were 2.78 and 6.01 feet (ft) above mean sea level (amsl), measured at D1C85W02R-A and D1C85W01R. Groundwater flow at the site is not considered to be uniform due to the heterogeneous mixture of fill material. Additionally, utility corridors (due to coarse grained backfill) and tidal influences are expected to impact local groundwater flow (TetraTech EC, 2011). Groundwater elevations at wells D1C85W04 and D1C85W02R-A appeared to be influenced by tidal fluctuations or subsurface heterogeneity, therefore were not used to estimate the groundwater gradient. The groundwater elevation contours and flow direction in the vicinity of Building 742, FDP, shown on Figure 3, were estimated using data gathered from four (D1C85W01R, D1C85W03, D1C85W06, and D1C85W07) of the six wells.

5.2. GROUNDWATER ANALYTICAL RESULTS

The following sections summarize groundwater analytical results for the July 2015 monitoring event for Building 742, FDP wells. Groundwater analytical data from the July 2015 monitoring event is summarized in Tables 3 and 4. Laboratory analytical data and data validation reports for July 2015 are included as Appendix C1 and C2, respectively.

The detected analytical data presented in the following sections were compared against PALs, as defined in the SAP (CES, 2014a) and addenda to the SAP (CES, 2014b; CES, 2015).

5.2.1. Building 742, FDP

VOCs

Groundwater samples collected from monitoring wells D1C85W01R, D1C85W02R-A, D1C85W03, D1C85W04, D1C85W06, and D1C85W07 were analyzed for VOCs; the results are summarized in Table 3. Contaminants exceeding PALs are shown on Figure 4.

VOCs were detected at concentrations exceeding their respective PALs in the primary and field duplicate samples from D1C85W06, as well as in the sample from D1C85W02R-A, as follows:

- 1, 4 - Dichlorobenzene (PAL = 15 µg/L) was detected at estimated[1] concentrations of 35 µg/L in D1C85W06 and 32 µg/L in the field duplicate, D1C85W06
- Vinyl chloride (PAL of 1.8 µg/L) was detected at estimated concentrations of 66 µg/L in D1C85W06 and 72 µg/L in the field duplicate, D1C85W06
- Vinyl chloride (PAL of 1.8 µg/L) was not detected in D1C85W02R-A; however due to sample dilution the reporting limit of 2.9 µg/L exceeded the PAL.

Various other VOCs were detected in all the samples (D1C85W0R1, D1C85W0R2-A, D1C85W03, D1C85W04, D1C85W06, and D1C85W07), but none at concentrations exceeding the PAL. Results are summarized in Table 3.

Metals

Groundwater samples collected from monitoring wells D1C85W06 and D1C85W07 were analyzed for specific dissolved metals: arsenic, iron, and manganese. All three metals were detected in the samples but none at concentrations exceeding PALs. The results were as follows:

- Arsenic (PAL = 36 µg/L) was detected at the following concentrations: 29 µg/L (D1C85W06); 28 µg/L (field duplicate, D1C85W06); and 13 µg/L (D1C85W07).
- Iron (PAL not established) was detected at the following concentrations: 2,300 µg/L (D1C85W06); 8,700 µg/L (field duplicate, D1C85W06); and 13 µg/L (D1C85W07).
- Manganese (PAL not established) was detected at the following concentrations: 4,500 µg/L (D1C85W06); 4,500 µg/L (field duplicate, D1C85W06); and 2,000 µg/L (D1C85W07).

The results are summarized in Table 4.

[1] Estimated concentrations are shown in the laboratory reports, figures, and tables as J flagged, which indicates an estimated value, where the analyte is detected above the laboratory method detection limit, but below the laboratory reporting limit.

5.3. FIELD QUALITY CONTROL SAMPLES RESULTS

A total of 4 field QC samples were collected and submitted for analysis. These samples included two equipment blanks, one source blank, and one trip blank. Detected concentrations of analytes in these samples are discussed below and summarized in Table 5.

VOCs

Carbon disulfide was detected in one equipment rinsate blank (ER-072815) at an estimated concentration 0.2 µg/L. This sample concentration was either not detected or was detected at greater than five times this concentration in associated samples with the exception of DIC85W06. As a result, the detected concentration of 0.7 µg/L carbon disulfide in DIC85W06 was modified by the data validator to non-detect at the same detection level. The source blank (SB-072915) contained trace concentrations of 2-butanone (estimated 0.2 µg/L), m, p-xylenes (estimated 0.1 µg/L), and toluene (estimated 0.2 µg/L). No modifications of the results for these analytes in other samples was needed based on these results.

Metals

No metals were detected in any of the collected field QC samples.

5.4. DATA VALIDATION RESULTS

In accordance with the SAP (CES, 2014a) and addenda to the SAP (CES, 2014b; CES, 2015), a data quality assessment was performed on the analytical data generated. The process consisted of a systematic review, verification, validation, and usability assessment of the data generated. LDC, a third-party data validation company, performed data validation. Level 4 validation was performed on 20% of the data and the remaining 80% was Level 3 validation. A total of 843 analytical results were evaluated by LDC. While some analytical results were qualified as estimated (i.e., "J" flagged) by C&T, LDC either verified this or further qualified the data with "UJ" during the validation process. A "UJ" qualifier means that the data result reported is a nondetect for the analyte. The "J" flagged, estimated results were considered usable. No analytical results were rejected by the validators.

Data quality indicators (precision, accuracy, representativeness, comparability, completeness, and sensitivity) were evaluated on the data.

Precision

For precision of groundwater field duplicate samples, the Relative Percent Difference (RPD) goal established in SAP Worksheet #12 (CES, 2014a) was less than 25%. One groundwater duplicate was collected during the Building 742, FDP sampling event for analysis of VOCs and dissolved metals. The RPD on valid detected constituents for this event were within the precision goal for VOCs (14.5%) but

outside the goal for metals (40%). The average RPD on the three metals was due to a higher iron concentration in the field duplicate sample than the primary sample, resulting in an RPD of 116%. The arsenic and manganese RPDs were 4% and 0%, respectively. Overall, the results met the RPD goal of less than 25%.

Accuracy

The data validation summaries reported with the analytical data reports provided information concerning the quality and acceptance of the laboratory generated results. For this event, minimal qualifiers were attached to individual data points. Only the validation and application of "J" qualifiers were noted as, previously discussed. Field accuracy was accomplished through field instrumentation calibration, keeping sample bottles segregated and protected from fuels, chemicals, or other potential contaminant sources, and performing proper decontamination and sample handling to prevent cross contamination.

Representativeness

Representativeness was accomplished as much as practical by following the SAP (CES, 2014a) and addenda to the SAP (CES, 2014b; CES, 2015) and designated sample locations. In addition, field tasks and fixed laboratory analyses were conducted by experienced personnel and in accordance with standard operating procedures and established quality assurance procedures.

Comparability

The primary objective of this sampling event was to collect analytical data sets for Building 742, FDP to assess concentrations of COCs in groundwater at this site. This was the first groundwater monitoring event of the contract that included sampling at Building 742, FDP; comparability of the data collected during future sampling events will be tabulated against previous groundwater event data.

Completeness

Of the 843 analytical results evaluated by LDC, no data points were rejected. Since no data points were rejected and all samples were analyzed as planned, the completeness for this sampling event was 100% which exceeds the completeness goal of 95% established in the SAP (CES, 2014a).

Sensitivity

Sensitivity was assessed by the evaluation of the analytical laboratory's ability to meet the PALs and limit of quantitation (LOQ). LOQs were established in the SAP (CES, 2014a) and were based upon PALs, instrument sensitivity and information provided by the laboratory. Actual LOQs were affected by numerous factors, including turbidity of groundwater samples, matrix interferences, and sample dilutions. For this sampling event, no laboratory or sample problems were noted that affected sensitivity levels.

Section 6. Summary and Recommendations

The following sections present a summary of the July 2015 monitoring event. This was the first sampling event of the contract to include groundwater sampling at Building 742, FDP. The topic of optimizing the BGMP, based on the findings, is also addressed in this section.

6.1. SUMMARY

Groundwater monitoring was performed at Building 742, FDP in accordance with the SAP (CES, 2014a) and addenda to the SAP (CES, 2014b; CES, 2015). Monitoring at Building 742, FDP included measuring groundwater and collecting samples in six wells. No variances to the BGMP occurred during this monitoring event.

6.1.1. Summary of Monitoring Results for Building 742, FDP

The following summarizes the groundwater monitoring results at Building 742, FDP:

- A total of six wells were located and water levels measured (D1C85W01R, D1C85W02R-A, D1C85W03, D1C85W04, D1C85W06, and D1C85W07).
  - The average groundwater elevation was measured at 4.83 ft amsl, which is lower than elevations previously measured in January 2015 (5.13 ft amsl) and August 2014 (5.44 ft amsl). Due to the proximity of Building 742, FDP to Mare Island Strait, groundwater levels are not expected to be seasonally influenced.
- Groundwater samples were collected and analyzed for VOCs at D1C85W01R, D1C85W02R-A, D1C85W03, and D1C85W04, D1C85W06, and D1C85W07.
  - 1, 4 - Dichlorobenzene and vinyl chloride were detected at concentrations exceeding their respective PALs in the primary and field duplicate samples from D1C85W06.
  - Due to sample dilution, vinyl chloride was detected at a concentration exceeding the PAL in the sample from D1C85W02R-A.
- Groundwater samples were collected and analyzed for specific dissolved metals (arsenic, iron, and manganese) at two wells (D1C85W06 and D1C85W07).
  - Arsenic, iron, and manganese were detected in each of the samples but none at concentrations exceeding PALs.
- Groundwater monitoring data were subject to a data quality assessment including review, verification, validation, and usability assessment, and were validated by a third party laboratory. All data were deemed acceptable for their intended use.

6.2. RECOMMENDATIONS FOR BGMP OPTIMIZATION

The Navy will conduct optimization of the monitoring program at appropriate milestones in the BGMP by providing, as appropriate, an updated list of wells to be sampled at each site, an updated list of analytes for each well, and adjusting the sampling frequency. No changes to the BGMP are recommended at this time since this was the first event where groundwater samples were collected at Building 742, FDP and adequate data has not been gathered to enable BGMP optimization.

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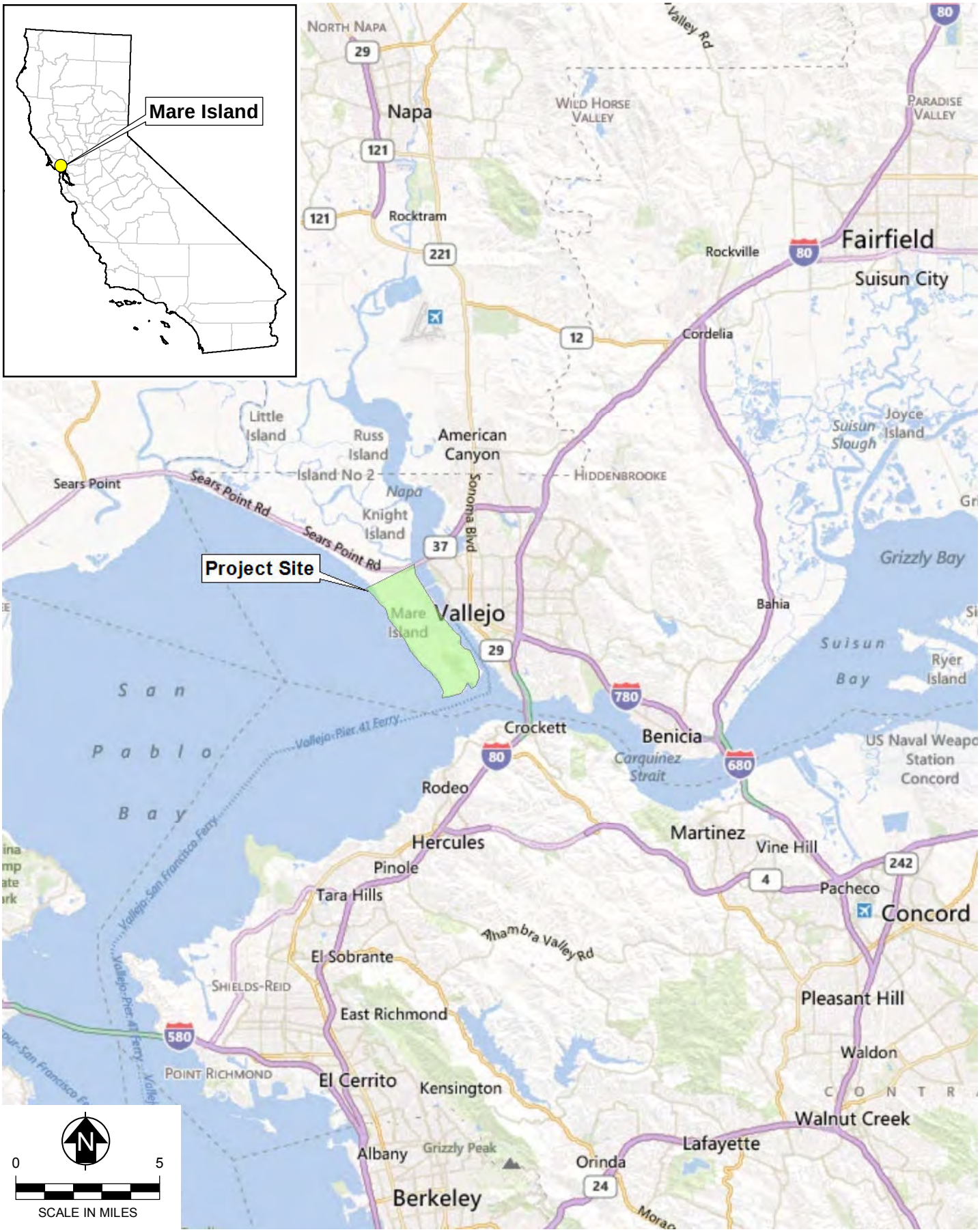
Figures



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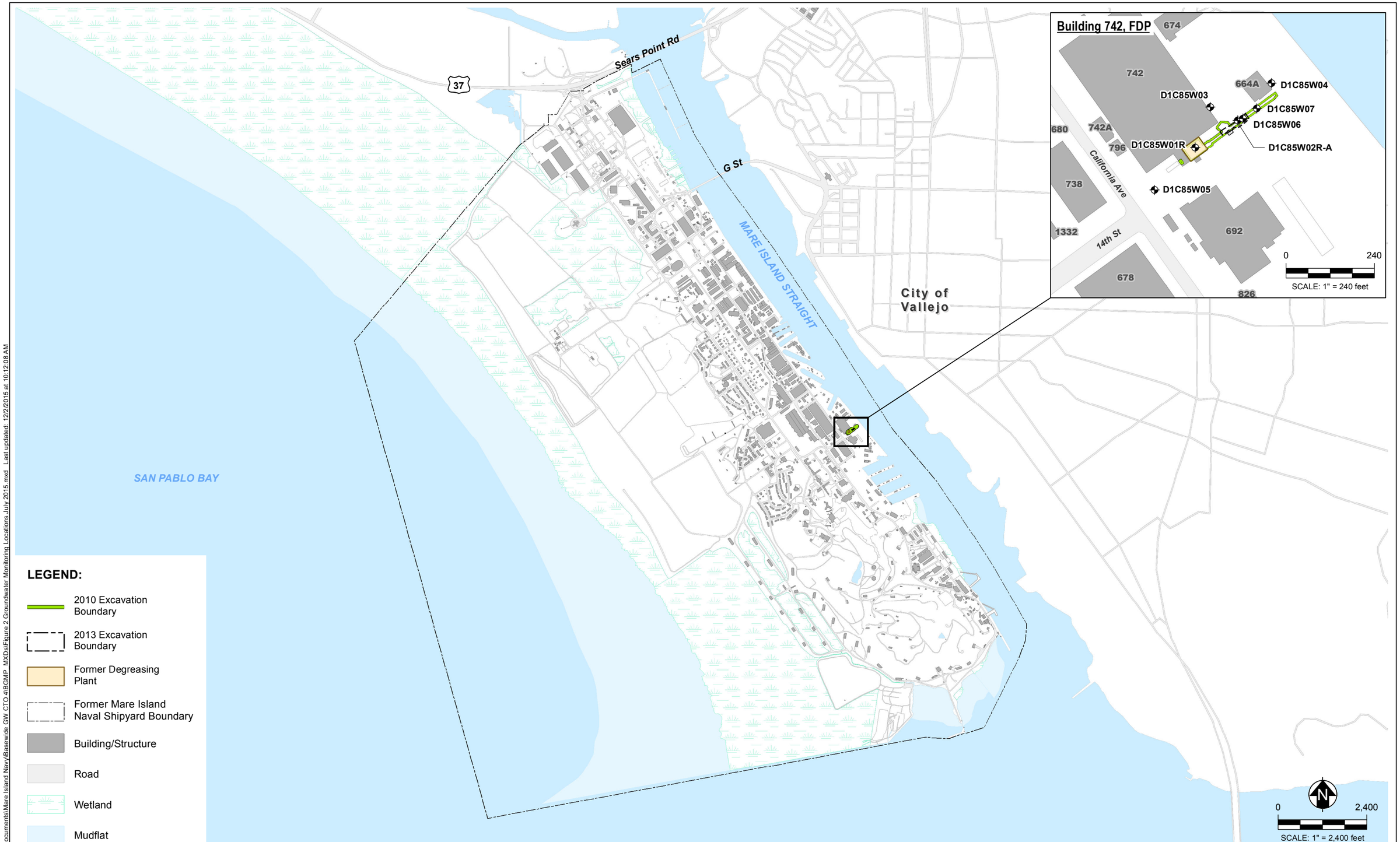
CLIENT: DEPARTMENT OF THE NAVY BRAC PMO WEST

LOCATION: FORMER MARE ISLAND NAVAL SHIPYARD VALLEJO, CALIFORNIA

SITE LOCATION AND VICINITY

DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
JJC 7/22/2013	HAW 7/22/2013	2013-042	1

N:\Graphics\2013\2013-042 Navy Mare Island\GIS\Site Location.mxd Last updated: 7/23/2013 at 11:03:04 AM



LEGEND:

- 2010 Excavation Boundary
- 2013 Excavation Boundary
- Former Degreasing Plant
- Former Mare Island Naval Shipyard Boundary
- Building/Structure
- Road
- Wetland
- Mudflat
- Water

Acronyms:

FDP = Former Degreasing Plant

IA = Investigation Area

SOURCES: TETRA TECH EM INC.; ESRI

C:\Users\hcoats\Documents\Mare Island Navy\Basewide GW CTO 41\BGMP_MXDs\Figure 2 Groundwater Monitoring Locations July 2015.mxd Last updated: 12/2/2015 at 10:12:08 AM

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CLIENT: DEPARTMENT OF THE NAVY BRAC PMO WEST

LOCATION: FORMER MARE ISLAND NAVAL SHIPYARD VALLEJO, CALIFORNIA

GROUNDWATER MONITORING LOCATIONS JULY 2015

DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
HGC 9/2/2015	MFM 9/3/2015	2013-042	2

Legend:

- Groundwater Monitoring Well
- Contour
- Groundwater Flow Direction
- 2013 Excavatoin Boundary
- Former Degreasing Plant
- 2010 Excavation Boundary
- Building/Structure
- Road
- Wetland
- Mudflat
- Water

(4.35) Groundwater elevations collected July 28, 2015, in feet above mean sea level

* Groundwater elevations at these wells not included in the estimation of groundwater contours

SOURCES: TETRA TECH EM INC.; ESRI

N

0 60 120 240 Feet

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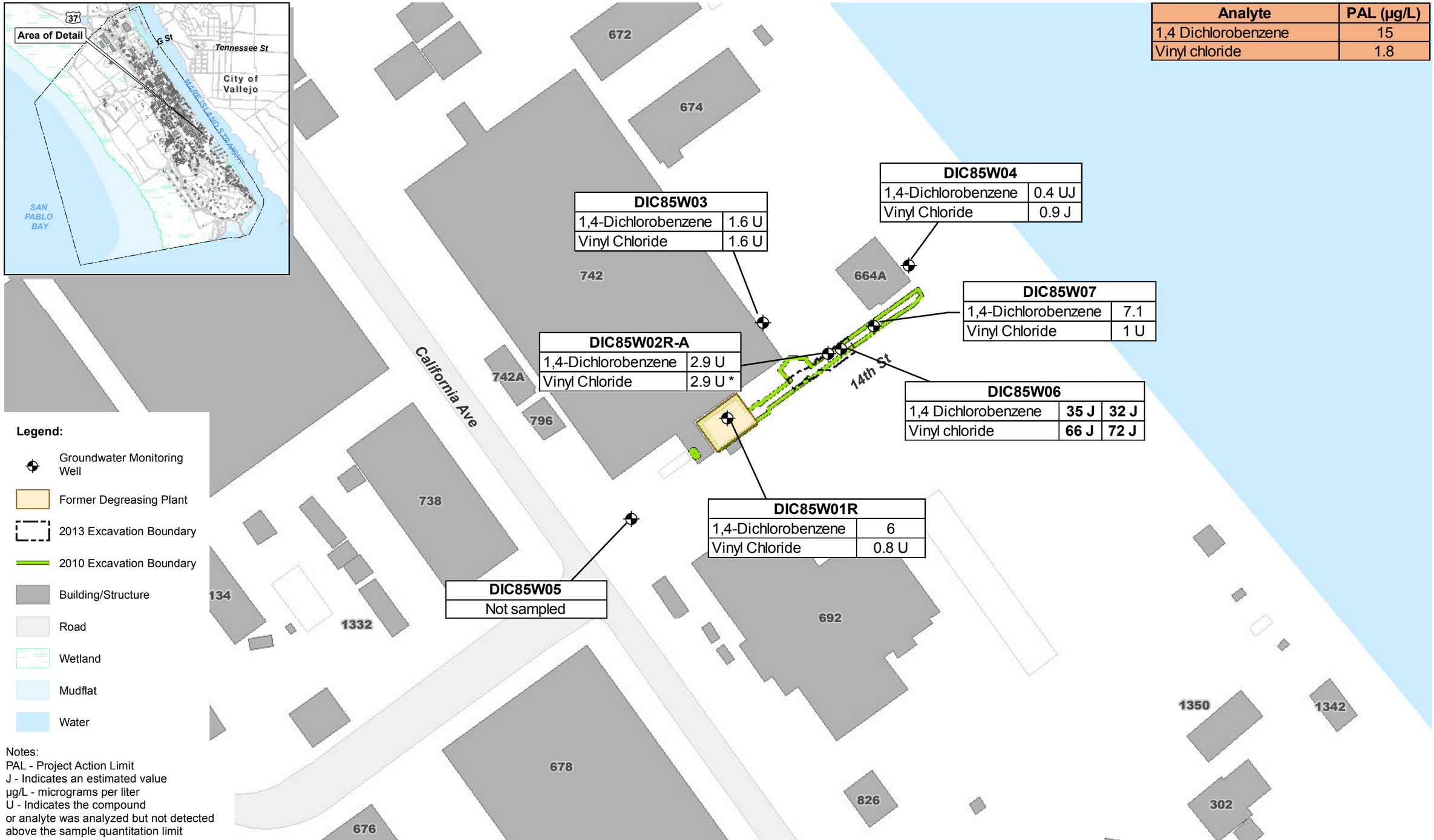
CLIENT:	LOCATION:	DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
DEPARTMENT OF THE NAVY BRAC PMO WEST	FORMER MARE ISLAND NAVAL SHIPYARD VALLEJO, CALIFORNIA	HGC 9/2/15	MFM 9/2/15	2013-042	3

POTENTIOMETRIC SURFACE MAP BUILDING 742, FDP

C:\Users\hcoats\Documents\Mare Island Navy\Basewide GW CTO 41\BGMP_MXDs\Figure 3 Potentiometric Surface Map Building 742_FDP_July 2015.mxd Last updated: 11/10/2015 at 7:15:43 AM

Analyte	PAL (µg/L)
1,4 Dichlorobenzene	15
Vinyl chloride	1.8



Notes:
PAL - Project Action Limit
J - Indicates an estimated value
µg/L - micrograms per liter
U - Indicates the compound or analyte was analyzed but not detected above the sample quantitation limit
* Due to sample dilution, the reporting limit exceeded the PAL
All other analytes were below their respective PALs
Results in **Bold** exceed their respective PALs
All samples collected 7/28/2015 - 7/29/2015.

SOURCES: TETRA TECH EM INC.; ESRI

C:\Users\hcoats\Documents\Mare Island Navy\Basewide GW CTO 41\BGMP MXDs\Figure 4 Contaminants in Groundwater Exceeding PALs 742 FDP July 2015.mxd Last updated: 11/10/2015 at 7:17:09 AM

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CLIENT: DEPARTMENT OF THE NAVY BRAC PMO WEST

LOCATION: FORMER MARE ISLAND NAVAL SHIPYARD VALLEJO, CALIFORNIA

CONTAMINANTS IN GROUNDWATER EXCEEDING PALS BUILDING 742, FDP, JULY 2015

DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
HGC 9/2/15	MFM 9/2/15	2013-042	4

Tables

Table 1. July 2015 Groundwater Monitoring Event

Site Name	Monitoring Well ID	Groundwater Elevation Measured on (Date)	Sample Date
Building 742, FDP	D1C85W01R	7/28/2015	7/29/2015
	D1C85W02R-A	7/28/2015	7/29/2015
	D1C85W03	7/28/2015	7/29/2015
	D1C85W04	7/28/2015	7/28/2015
	D1C85W06	7/28/2015	7/28/2015
	D1C85W07	7/28/2015	7/28/2015

Notes:
FDP - Former Degreasing Plant

Table 2. Groundwater Elevation Data

Site Name	Monitoring Well ID	Easting	Northing	TOC Elevation (ft amsl)	Ground Surface Elevation (ft amsl)	Screened Interval Depth (ft bgs)	Total Depth (ft BTOC)	Depth to Water (ft BTOC)	Water Elevation (ft amsl)	Gauge Date
Building 742, FDP	D1C85W01R	6486166.220000	1795386.850000	9.43	10.17	5-15	14.79	3.42	6.01	7/28/2015
	D1C85W02R-A	6486281.370000	1795460.840000	8.45	8.45	5-15	14.75	5.67	2.78	7/28/2015
	D1C85W03	6486207.154872	1795496.317162	8.978	NA	NA	14.91	4.63	4.35	7/28/2015
	D1C85W04	6479681.217764	1802945.069314	9.74	10.34	5-15	14.71	4.14	5.60	7/28/2015
	D1C85W06	6486296.149168	1795465.871564	8.14	8.50	5-25	24.35	3.14	5.00	7/28/2015
	D1C85W07	6486334.153847	1795492.503937	8.89	9.30	5-25	24.38	4.13	4.76	7/28/2015

Notes:
amsl - above mean sea level
bgs - below ground surface
BTOC - below top of casing
FDP - Former Degreasing Plant
ft - feet
NA - data unavailable
TOC - top of casing

Table 3. Detected Groundwater Analytical Results for VOCs – Building 742, FDP

Analyte[1]	PAL[2] (µg/L)	Monitoring Well ID and Sample Date						
		DIC85W01R	DIC85W02R-A	DIC85W03	DIC85W04	DIC85W06	DIC85W06 Duplicate	DIC85W07
		7/29/2015	7/29/2015	7/29/2015	7/28/2015	7/28/2015	7/28/2015	7/28/2015
1,2,4-Trimethylbenzene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	22 J	23 J	1 U
1,2-Dichlorobenzene	14	0.4 J	2.9 U	1.6 U	0.4 UJ	12 J	11 J	0.7 J
1,3,5-Trimethylbenzene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	4.8 J	4.9 J	1 U
1,3-Dichlorobenzene	65	1.6	2.9 U	1.6 U	0.4 UJ	7.8 J	7.4 J	1.5 J
1,4-Dichlorobenzene	15	6	2.9 U	1.6 U	0.4 UJ	35 J	32 J	7.1
2-Butanone	14,000	2 U	7.1 U	4 U	4 UJ	43 J	39 J	10 U
4-Isopropyltoluene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	1.1 J	1.2 J	1 U
4-Methyl-2-Pentanone	170	0.8 U	2.9 U	1.6 U	2 UJ	1 J	1.3 J	5 U
Acetone	1,500	10 U	36 U	20 U	8 UJ	70 J	47 J	20 U
Benzene	27	0.4 U	1.4 U	0.8 U	0.4 UJ	0.7 J	0.8 J	1 U
Carbon Disulfide	NE	0.8 U	1.3 J	1.9 J	0.8 U	0.7 UJ	1.3 U	2 U
Chlorobenzene	25	0.4 U	1.4 U	0.8 U	0.4 UJ	24 J	23 J	11
cis-1,2-Dichloroethene	590	0.8 U	1.5 J	1.6 U	0.3 J	3.7 J	3.8 J	1 U
Ethylbenzene	43	0.4 U	1.4 U	0.8 U	0.4 UJ	0.9 J	1 J	1 U
Isopropylbenzene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	0.8 J	0.7 J	1 U
m- and p-Xylene	100	0.4 U	1.4 U	0.8 U	0.8 UJ	3.6 J	4.1 J	2 U
Naphthalene	24	0.8 U	2.9 U	1.6 U	0.8 UJ	4.3 J	4.6 J	2 U
N-Butylbenzene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	0.5 J	0.7 J	1 U
O-Xylene	100	0.4 U	1.4 U	0.8 U	0.4 UJ	3.4 J	3.5 J	1 U
Propylbenzene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	1.8 J	1.7 J	1 U
Sec-Butylbenzene	NE	0.4 U	1.4 U	0.8 U	0.4 UJ	0.8 J	0.8 J	1 U
Toluene	130	0.4 U	1 J	0.8 U	0.4 UJ	1.1 J	1 J	1 U
Trans-1,2-Dichloroethene	590	0.8 U	2.9 U	1.6 U	0.4 UJ	3 J	2.5 J	1 U
Trichloroethene	130	0.4 U	1.4 U	0.8 U	0.4 UJ	0.6 J	0.7 J	1 U
Vinyl Chloride	1.8	0.8 U	2.9 U[3]	1.6 U	0.9 J	66 J	72 J	1 U

Notes:

[1] All analytes reported in µg/L.

[2] Water Board, 2013. "Summary Table B, Environmental Screening Levels, Shallow Soils (<3m bgs), Groundwater is not a Current or Potential Source of Drinking Water." December.

[3] Due to sample dilution the reporting limit exceeded the PAL.

PAL - project action limit

µg/L - micrograms per liter

NE - Not established

U - Indicates the compound or analyte was analyzed but not detected above the sample quantitation limit

J - Indicates an estimated value

Shaded value exceeds the PAL.

Table 4. Detected Groundwater Analytical Results for Select Metals– Building 742, FDP

Analyte[1]	PAL[2,3] (µg/L)	Monitoring Well ID and Sample Date		
		DIC85W06 7/28/2015	DIC85W06 Duplicate 7/28/2015	DIC85W07 7/28/2015
Arsenic	36	29	28	13
Iron	NE	2,300	8,700	330
Manganese	NE	4,500	4,500	2,000

Notes:
[1] All analytes reported in µg/L.
[2] Water Board, 2013. "Summary Table B, Environmental Screening Levels, Shallow Soils (<3m bgs), Groundwater is not a Current or Potential Source of Drinking Water." December.
[3] Technical Memorandum Estimation of Ambient Metal Concentrations in Shallow Groundwater, Mare Island, Vallejo, California (PRC, 1996).
µg/L - micrograms per liter
NE - Not established

Table 5. Field Quality Control Sample Results

Analyte[1]	PAL[2,3] (µg/L)	Sample ID and Date							
		ER-072815 7/28/2015		TB-072815 7/28/2015		ER-072915 7/29/2015		SB-072915 7/29/2015	
Metals									
Arsenic	78	4	U	NA		NA		4	U
Iron	NE	50	U	NA		NA		50	U
Manganese	5,400	2.5	U	NA		NA		2.5	U
VOCs									
2-Butanone	14,000	2	U	1	U	2	U	2.4	J
Carbon Disulfide	NE	0.2	J	0.4	U	0.4	U	0.4	U
m,p-Xylenes	100	0.4	U	0.2	U	0.4	U	0.1	J
Toluene	130	0.2	U	0.2	U	0.2	U	0.2	J

Notes:

[1] All analytes reported in µg/L.

[2] Water Board, 2013. "Summary Table A, Environmental Screening Levels, Shallow Soils (<3m bgs), Groundwater is Current or Potential Source of Drinking Water)." December.

[3] Technical Memorandum Estimation of Ambient Metal Concentrations in Shallow Groundwater, Mare Island, Vallejo, California (PRC, 1996).

ER - equipment rinsate

TB - trip blank

SB - source water blank

µg/L – micrograms per liter

NA - not analyzed

NE - not established

PAL - project action limit

VOCs – volatile organic compounds

J - Indicates an estimated value

U - Indicates the compound or analyte was analyzed but not detected above sample quantitation limit

Appendix A. Field Forms

WATER ELEVATION LOG

ERRG

DATE	SAMPLING LOCATION	DEPTH TO WATER (FT)	TOTAL DEPTH (FT) to bottom	ADDITIONAL INFORMATION Time
07.28.15	D1C85W04	4.14	14.71	0954
	D1C85W07	4.13	24.38	1000
	D1C85W06	3.14	24.35	1003
	D1C85W02R-A	~~4.~~ 5.67	14.75	1006
	D1C85W03	4.63	14.91	1012
	D1C85W01R	3.42	14.79	1018

Groundwater Purge Form
Low Flow Sampling

PROJECT NO: 2013-042
DATE: 7/29/15
CLIENT NAME: Navy
LOCATION: Mare Island, Bldg. 742
ARRIVAL TIME: 1100

WELL ID: DIC85WOIR
SAMPLE ID: DIC85WOIR-072915
PURGED BY: MM/KW
DEPARTURE TIME: 1245

ERRG
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750

Casing Diameter (inches): 2": ✓ 3": ___ 4": ___ 5": ___ 6": ___ 8": ___ Other: ___
Casing Volume (gal/ft): (0.16) (0.37) (0.65) (1.02) (1.47) (2.61) ( )
Total Depth (feet) = — Depth to Water (feet): 4.02 Depth to Product (feet): —

TD	-	DTW	=		x	Casing volume	=		x	No. of casing volumes	=	Calculated Purge
—	-	—	=	—	x	—	=	—	x	—	=	—

Time Started: 1155 Time ended: 1224

Time (2400hr)	Depth to Water (ft)	Refill Time (sec)	Discharge Time (sec)	Pressure (psi)	Flowrate (mL/min)	Volume (L) mL	Temp. (°F) °C	Sp. Cond. (mS/cm)	pH (units)	D.O. (mg/L)	Salinity (%)	Turbidity (NTU)	ORP (mV)	Odor (Y/N)	Pumped Dry (Y/N)
Criteria	±0.33ft				0.1 to 0.5		±3%	±3%	±0.1 units	±10%		±10%	+10 mV		
1155	4.02	10	5	—	200	0	—	—	—	—	—	—	—	—	—
1203	4.02	↓	↓	↓	↓	750	24.75	30177	6.92	0.87	↓	123.4	-74.5	↓	↓
1206	4.02					1350	24.51	30181	6.91	0.51		114.2	-86.3		
1209	4.02					1950	24.58	30186	6.94	0.41		96.7	-91.3		
1212	4.02					2550	24.66	30195	6.95	0.31		67.8	-93.2		
1215	4.02					3150	24.79	30210	6.97	0.24		36.2	-95.1		
1218	4.02					3750	24.84	30246	7.0	0.23		19.3	-96.0		
1221	4.02					4350	24.87	30260	7.01	0.24		12.8	-96.2		
1224	4.02	↓	↓	↓	↓	4950	24.87	30267	7.02	0.17	↓	7.7	-96.3	↓	↓

Actual gallons purged: 1.308 Sample Time: 1228

PURGING EQUIPMENT

Active Extraction Well Pump ___ ___ Bailer (Teflon)
Portable Submersible Pump ___ ___ Bailer (PVC)
Other: Bladder Pump ___ Bailer (Stain. Steel)
Pump Depth: ~1' off bottom ___ Dedicated

SAMPLING EQUIPMENT

Sampling Port ___ ___ Bailer (Teflon)
Portable Submersible Pump ___ ___ Bailer (PVC)
Peristaltic Pump ___ ___ Bailer (Stainless Steel)
✓ Other: Bladder pump

Well Integrity: Good: ✓ Fair: ___ Poor: ___ Lock No. —
Remarks:

Signature: M. Mendell Reviewed by ___ Page 1 of 1

N:\Projects\2013 Projects\2013-042 CESJV MINS GW Work\E_FieldData\BlankFieldForms_MINSGW.xlsx

Groundwater Purge Form
Low Flow Sampling

PROJECT NO: 2013-042
DATE: 7/29/15
CLIENT NAME: Navy
LOCATION: Mare Island, Bldg 742
ARRIVAL TIME: 0940

WELL ID: DIC85-W02R-A
SAMPLE ID: DIC85W02RA-072915
PURGED BY: KW / MM
DEPARTURE TIME: 1100

ERRG
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750

Casing Diameter (inches):	2": ✓	3":	4":	5":	6":	8":	Other:
Casing Volume (gal/ft):	(0.16)	(0.37)	(0.65)	(1.02)	(1.47)	(2.61)	( )

Total Depth (feet) = – Depth to Water (feet): 3.08 Depth to Product (feet): –

–	-	–	=	–	x	–	=	–	x	–	=	–
TD		DTW				Casing volume				No. of casing volumes		Calculated Purge

Time Started: 0949 Time ended: 1021

Time (2400hr)	Depth to Water (ft)	Refill Time (sec)	Discharge Time (sec)	Pressure (psi)	Flowrate ~~(L~~ mL/min)	Volume ~~(L)~~ mL	Temp. ~~(°F)~~ °C	Sp. Cond. ~~(µS/cm)~~ mS/cm	pH (units)	D.O. (mg/L)	Salinity (%)	Turbidity (NTU)	ORP (mV)	Odor (Y/N)	Pumped Dry (Y/N)
Criteria	±0.33ft				0.1 to 0.5		±3%	±3%	±0.1 units	±10%		±10%	+10 mV		
0949	3.08	10	5	–	~75	0								N	–
1012	4.81	10	5			750	24.26	20084	6.67	0.98	—	36.5	-134.2		– low recharge. dia
1015	4.84					975	24.25	19945	6.67	0.60		36.8	-135.2		slow rate block unt
1018	4.93					1200	24.23	19544	6.68	0.39		35.2	-135.9		rough equilibriu
1021	4.98					1425	24.22	19386	6.69	0.48		34.9	-136.6		was reached
						~~1650~~									
						~~1875~~	KW								
						~~2100~~									

Actual gallons purged: 0.376 Sample Time: 1028

PURGING EQUIPMENT

Active Extraction Well Pump ____
Portable Submersible Pump ____
Other: Bladder Pump
Pump Depth: ~1' off bottom

____ Bailer (Teflon)
____ Bailer (PVC)
____ Bailer (Stain. Steel)
____ Dedicated

SAMPLING EQUIPMENT

Sampling Port ___
Portable Submersible Pump ___
Peristaltic Pump ___

___ Bailer (Teflon)
___ Bailer (PVC)
___ Bailer (Stainless Steel)
✓ Other: Bladder pump

Well Integrity: Good: ✓ Fair: ☐ Poor: ☐ Lock No. –

Remarks:

Signature: M. Wandell Reviewed by ____ Page 1 of 1

N:\Projects\2013 Projects\2013-042 CESJV MINS GW Work\E_FieldData\BlankFieldForms_MINSGW.xlsx

Groundwater Purge Form
Low Flow Sampling

PROJECT NO: 2013-042
DATE: 7/29/15
CLIENT NAME: Navy
LOCATION: Mare Island, Bldg 742
ARRIVAL TIME: 0745

WELL ID: DIC85-W03
SAMPLE ID: DIC85W03-072915
PURGED BY: KW / MM
DEPARTURE TIME: 0940

ERRG
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750

Casing Diameter (inches):	2": ✓	3":	4":	5":	6":	8":	Other:
Casing Volume (gal/ft):	(0.16)	(0.37)	(0.65)	(1.02)	(1.47)	(2.61)	( )

Total Depth (feet) = — Depth to Water (feet): 4.34 Depth to Product (feet): —

— (TD) - — (DTW) = — x — (Casing volume) = — x — (No. of casing volumes) = — (Calculated Purge)

Time Started: 0818 Time ended: 0905

Time (2400hr)	Depth to Water (ft)	Refill Time (sec)	Discharge Time (sec)	Pressure (psi)	Flowrate (L/min)	Volume (L)	Temp. (°C)	Sp. Cond. (mS/cm)	pH (units)	D.O. (mg/L)	Salinity (%)	Turbidity (NTU)	ORP (mV)	Odor (Y/N)	Pumped Dry (Y/N)
Criteria	±0.33ft				0.1 to 0.5		±3%	±3%	±0.1 units	±10%		±10%	+10 mV		
0818 ~~0757~~ KW	4.34	10	5	—	200	0								N	adjusted flow
0841	4.82	↓	↓	—	100	750	19.35	13444	6.56	0.30	—	242.9	-129.3	↓	
0844	4.95			↓	100	1050	19.35	13390	6.56	0.25	↓	265	KW ~~-140~~ -130.4		
0847	5.04				100	1350	18.91	12984	6.57	0.40		220.9	-130.5		
0850	5.07				100	1650	18.93	12683	6.57	0.29		190.4	-130.7		
0853	5.04				100	1950	18.94	12324	6.58	0.39		176.8	-131.7		
0859	4.88				100	1950	19.18	12232	6.59	0.26		150.8	-130.6		battery died, hooked pump up to car
0902	4.96				100	2250	19.18	12194	6.59	0.22		138.4	-130.7		
0905	5.01	↓	↓	↓	100	2550	19.06	12152	6.60	0.26	↓	135.3	-131.5	↓	

Actual gallons purged: 0.674 Sample Time: 0908

PURGING EQUIPMENT

Active Extraction Well Pump ____ ____ Bailer (Teflon)
Portable Submersible Pump ____ ____ Bailer (PVC)
Other: Bladder ____ Bailer (Stain. Steel)
Pump Depth: 1' off bottom ____ Dedicated

SAMPLING EQUIPMENT

Sampling Port ____ ____ Bailer (Teflon)
Portable Submersible Pump ____ ____ Bailer (PVC)
Peristaltic Pump ____ ____ Bailer (Stainless Steel)
✓ Other: Bladder

Well Integrity: Good: ✓ Fair: ____ Poor: ____ Lock No. ____

Remarks: Almost buried under logs. Even w/ low flow rate (100 mL/min), water level is hard to maintain. Level is slowly dropping each reading.

Signature: [signature] Reviewed by ____ Page 1 of 1

N:\Projects\2013 Projects\2013-042 CESJV MINS GW Work\E_FieldData\BlankFieldForms_MINSGW.xlsx

Groundwater Purge Form
Low Flow Sampling

PROJECT NO: 2013-042
DATE: 7/28/15
CLIENT NAME: Navy
LOCATION: Building 742
ARRIVAL TIME: 1118

WELL ID: DIC85W04 ~~DIC85W08~~ MM
SAMPLE ID: DIC85W04-072815
PURGED BY: RM KW MM
DEPARTURE TIME: 1250

ERRG
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750

Casing Diameter (inches): 2": ✓ 3": ___ 4": ___ 5": ___ 6": ___ 8": ___ Other: ___
Casing Volume (gal/ft): (0.16) (0.37) (0.65) (1.02) (1.47) (2.61) ( )
Total Depth (feet) = – Depth to Water (feet): 4.09 Depth to Product (feet): ___

– (TD) - – (DTW) = – x – (Casing volume) = – x – (No. of casing volumes) = – (Calculated Purge)

Time Started: 1128 Time ended: 1214

Time (2400hr)	Depth to Water (ft)	Refill Time (sec)	Discharge Time (sec)	Pressure (psi)	Flowrate (L/min)	Volume (L)	Temp. (°F/°C)	Sp. Cond. (mS/cm)	pH (units)	D.O. (mg/L)	Salinity (%)	Turbidity (NTU)	ORP (mV)	Odor (Y/N)	Pumped Dry (Y/N)
Criteria	±0.33ft				0.1 to 1.0		±3%	±5%	±0.2 units	±0.2 mg/L		±10%	+10 mV		
1128	4.09	10	5	–	350	0	–	–	–	–	–	–	–	–	–
1132	4.16	↓	↓	↓	↓	750	19.75	4257	6.57	3.29	↓	111.6	-74.0	↓	↓
1135	4.16					1800	19.44	4231	6.55	2.87		77.3	-78.3		
1138	4.19					2450	19.38	4305	6.55	1.19		77.5	-60.4		
1141	4.14					3900	19.28	4486	6.56	0.47		64.6	-57.6		
1144	4.13					4950	19.28	4656	6.56	0.38		58.3	-62.9		
1147	4.15					6000	19.27	4738	6.56	0.47		47.1	-65.0		
1150	4.19					7050	19.27	4880	6.56	0.29		32.8	-67.9		
1153	4.15					8100	19.25	5010	6.56	0.43		28.4	-69.7		
1156	4.15					9150	19.25	5138	6.56	0.26		27.7	-71.7		
1159	4.18					10,200	19.3	5207	6.56	0.19		21.5	-72.9		
1202	4.17					11,250	19.29	5346	6.56	0.39		17.8	-78.4		
1205	4.16					12,300	19.26	5432	6.56	0.16		16.3	-78.4		
1208	4.18					13,350	19.25	5570	6.56	0.17		14.4	-79.2		
1211	4.18					14,400	19.26	5619	6.56	0.17		13.0	-80.1		
1214	4.18					15,450	19.3	5717	6.55	0.17		12.8	-80.6		

Actual gallons purged: 4.08 Sample Time: 1219

PURGING EQUIPMENT

Active Extraction Well Pump ___ ___ Bailer (Teflon)
Portable Submersible Pump ___ ___ Bailer (PVC)
Other: Bladder ___ Bailer (Stain. Steel)
Pump Depth: 1' off bottom ___ Dedicated

SAMPLING EQUIPMENT

Sampling Port ___ ___ Bailer (Teflon)
Portable Submersible Pump ___ ___ Bailer (PVC)
Peristaltic Pump ___ ___ Bailer (Stainless Steel)
✓ Other: Bladder

Well Integrity: Good: ✓ Fair: ___ Poor: ___ Lock No. –

Remarks:

Signature: [signature] Reviewed by ___ Page 1 of 1

Groundwater Purge Form
Low Flow Sampling

PROJECT NO: 2013-042
DATE: 7/28/15
CLIENT NAME: Navy ~~742~~
LOCATION: Bld 742
ARRIVAL TIME: ~~3:~~ 15:25

WELL ID: DIC 85 W06
SAMPLE ID: ~~DIC85W06-072815~~
PURGED BY: KW MM RM
DEPARTURE TIME: 16:40

ERRG
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750

Casing Diameter (inches):	2": ✓	3":	4":	5":	6":	8":	Other:
Casing Volume (gal/ft):	(0.16)	(0.37)	(0.65)	(1.02)	(1.47)	(2.61)	( )

Total Depth (feet) = — Depth to Water (feet): 3.16 Depth to Product (feet): —

TD	-	DTW	=		x	Casing volume	=		x	No. of casing volumes	=	Calculated Purge
—	-	—	=	—		—	=	—	x	—	=	—

Time Started: 1537 Time ended: 1620

Time (2400hr)	Depth to Water (ft)	Refill Time (sec)	Discharge Time (sec)	Pressure (psi)	Flowrate ~~(L/min)~~ mL/min	Volume mL	Temp. ~~(°F)~~ °C	Sp. Cond. (mS/cm)	pH (units)	D.O. (mg/L)	Salinity (%)	Turbidity (NTU)	ORP (mV)	Color ~~Odor (Y/N)~~ RM Black (Y/N)	Pumped Dry
Criteria	±0.33ft				0.1 to 0.5		±3%	±3%	±0.1 units	±10%		±10%	+10 mV		
15:37	3.15	10	5		200	0	—	—	—	—		—	—	Black	
15:46	3.18				~~RM 400~~	~~900~~ 750	24.23	28693	6.54	0.60		194.0	-138.2		
15:49	3.17				200	1350	23.78	28409	6.54	0.27		192.7	-139.6		
15:52	3.18					1950	23.53	28350	6.55	0.22		156.1	-144.8		
15:55	3.17					2500	23.5	28300	6.56	0.06		143.5	-148.0		
15:58	3.16					3100	23.47	28333	6.57	0.06		137.4	-148.9		
16:01	3.20					3700	23.34	28287	6.57	0.14		125.9	-149.6		
16:04	3.17					4300	23.23	28256	6.57	0.12		103.9	-149.4		
16:07	3.19					4900	23.2	28350	6.56	0.06		102.7	-149.2		
16:10	3.17					5500	23.24	28353	6.56	0.05		93.8	-147.5		
~~16:13~~						~~6100~~	~~23.25~~	~~28329~~	~~6.55~~	~~0.04~~		~~86.6~~	~~-150.4~~	KW	

Actual gallons purged: Sample Time: 16:28

PURGING EQUIPMENT

Active Extraction Well Pump ____ ____ Bailer (Teflon)
Portable Submersible Pump ____ ____ Bailer (PVC)
Other: Bladder ____ Bailer (Stain. Steel)
Pump Depth: 1' off bottom ____ Dedicated

SAMPLING EQUIPMENT

Sampling Port ____ ____ Bailer (Teflon)
Portable Submersible Pump ____ ____ Bailer (PVC)
Peristaltic Pump ____ ____ Bailer (Stainless Steel)
✓ Other: Bladder

Well Integrity: Good: ✓ Fair: ____ Poor: ____ Lock No. —

Remarks:

Signature: Rachel Mallon Reviewed by ____ Page 1 of 1

N:\Projects\2013 Projects\2013-042 CESJV MINS GW Work\E_FieldData\BlankFieldForms_MINSGW.xlsx

Groundwater Purge Form
Low Flow Sampling

PROJECT NO: 2013-042
DATE: 7/28/15
CLIENT NAME: Navy
LOCATION: Bldg. 742
ARRIVAL TIME: 1401

WELL ID: DIC85W07
SAMPLE ID: DIC85W07-072815
PURGED BY: KW MM RM
DEPARTURE TIME: 1500

ERRG
4585 Pacheco Blvd, Suite 200
Martinez, CA 94553
Phone: (925) 969-0750

Casing Diameter (inches): 2": ✓ 3": ___ 4": ___ 5": ___ 6": ___ 8": ___ Other: ___
Casing Volume (gal/ft): (0.16) (0.37) (0.65) (1.02) (1.47) (2.61) ( )
Total Depth (feet) = — Depth to Water (feet): 4.07 Depth to Product (feet): —
— (TD) - — (DTW) = — x — (Casing volume) = — x — (No. of casing volumes) = — (Calculated Purge)

Time Started: 1408 Time ended: 1427

Time (2400hr)	Depth to Water (ft)	Refill Time (sec)	Discharge Time (sec)	Pressure (psi)	Flowrate (L/min)	Volume (L)	Temp. (°F) °C	Sp. Cond. (mS/cm)	pH (units)	D.O. (mg/L)	Salinity (%)	Turbidity (NTU)	ORP (mV)	Odor (Y/N)	Pumped Dry (Y/N)
Criteria	±0.33ft				0.1 to 1.0		±3%	±5%	±0.2 units	±0.2 mg/L		±10%	+10 mV		
1408	4.07	10	5	—	150	0	—	—	—	—	—	—	—	—	—
1415	4.09	↓	↓	↓	↓	750	24.17	25411	10.54	0.70	↓	56.2	-100.5	↓	↓
1418	4.09					900	24.04	25409	10.54	0.65		56.0	-97.3		
1421	4.08					1050	23.96	25375	10.55	0.62		55.9	-95.5		
1424	4.08					1300	23.89	25307	10.56	0.65		53.9	-93.5		
1427	4.08					1450	23.85	25272	10.56	0.59		48.9	-93.9		

Actual gallons purged: 0.383 Sample Time: 1434

PURGING EQUIPMENT

Active Extraction Well Pump ___ ___ Bailer (Teflon)
Portable Submersible Pump ___ ___ Bailer (PVC)
Other: Bladder ___ Bailer (Stain. Steel)
Pump Depth: 1' off bottom ___ Dedicated

SAMPLING EQUIPMENT

Sampling Port ___ ___ Bailer (Teflon)
Portable Submersible Pump ___ ___ Bailer (PVC)
Peristaltic Pump ___ ___ Bailer (Stainless Steel)
✓ Other: Bladder

Well Integrity: Good: ✓ Fair: ___ Poor: ___ Lock No. —
Remarks: Bent bolt on well cover

Signature: [signature] Reviewed by ___ Page 1 of 1

AIR MONITORING RECORD

Prepared by: M. Mandell
Client: NAVY N62473-11-D-2215
Project Name: MINS BGMP #3
Project No.: ~~MINS BGMP #3~~ NM 2013-012
Site Location: Bldg. 742, FDP
Page: 1 of 1
Equip/Calib (date/time): EquipCO 7/27/15
Standard Used: Mixed gas calibration

Location	Date	Time	PID (ppm)	PM-10 (ug/m3)	Comments
DIC85~~W~~W01R	7/28/15	08:07	2.4 ~~0.0~~	–	open well cap / initial spike
DIC85W02R-A		0816	3.6	–	" "
DIC85W06		0821	3.7	–	" "
DIC85W04		0835	0.6	–	" "
DIC85W07		0845	0.0	–	while sampling
DIC85W03		0855	0.0	–	while sampling
DIC85W04		~~10~~ KW 1130	0.0	–	while sampling
DIC85W07		1403	0.0	–	" "
DIC85W07		1445	0.0	–	" "
DIC85W06		1537	0.0	–	" "
DIC85W06		1635	0.0	–	" "
DIC85W03	7/29/15	NM ~~0600~~ 0740	1.4	–	initial spike, opening well
DIC85W03		0800	0.2	–	while sampling
DIC85W03		0820	0.2	–	" "
" "		0835	0.0	–	" "
" "		0900	0.2	–	" "
DIC85W02R-A		0932	5.6	–	initial spike / opening well cap
		1005	0.4	–	while sampling
DIC85W01R		1200	0.0	–	while sampling
" "		1230	0.2	–	" "

EQUIPCO RENTALS

Rae Systems MultiRAE
Calibration Certificate

DATE: 7/27/15 CALIBRATED BY: JET

RENTAL I.D.: MULTIRAE. 18

SERIAL#: _____

BATTERY CHARGED X METER ZEROED X

CALIBRATION GAS:

1. Methane 50 %LEL LOT#: 914930
2. Hydrogen Sulfide 25 ppm LOT#: 914930
3. Carbon Monoxide 50 ppm LOT#: 914930
4. Isobutylene 100 ppm LOT#: T623556

GAS RESPONSE:

1. 50 LEL +2%
2. 25 H2S +2%
3. 50 CO +2%
4. 100 Isobutylene ±2%

OXYGEN RESPONSE IN FRESH AIR ENVIRONMENT: 20.9%

OXYGEN DOWNSCALE RESPONSE TO 99.9% NITROGEN: 0 %

2100 Meridian Park Boulevard, Concord, CA. 94520 Phone (925) 609-1088 Fax (925) 609-1080

EQUIPCO RENTALS

YSI 6920 RENTAL
CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: JET DATE: 7/27/15

RENTAL CUSTOMER:

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: YSI-6920.02
SERIALNUMBER:

CALIBRATION INFORMATION

PARAMETERS:	STANDARDS:	PASS ( )	LOT#
1. CONDUCTIVITY	1000 µMhos	✓	8534
2. pH ZERO	pH 7	✓	8822
3. pH SLOPE	pH 4	✓	8747
ph SLOPE	pH 10	✓	8748
4. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg	✓	n/a
5. DISSOLVED OXYGEN ZERO TEST	(sodium sulfite)	✓	
6. TURBIDITY ZERO	0.5 NTU's	✓	100A
7. TURBIDITY SPAN	20 NTU's	✓	72715
8. REDOX (ORP)	231 mV (YSI Zobell solution)	✓	57916

2100 Meridian Park Boulevard, Concord, CA. 94520 Phone (925) 609-1088 Fax (925) 609-1080

Appendix B. Waste Management Documentation

23 NO. 718325

NON-HAZARDOUS WASTE DATA FORM

MI-9350

BESI # 258005

GENERATOR

Generator's Name and Mailing Address
US NAVY BRAC PMO-W (MI)
1 AVENUE OF THE PALMS, SUITE 161
SAN FRANCISCO, CA 94130

Generator's Site Address (if different than mailing address)
FORMER DEGREASING PLANT
CORNER OF K ST. & WALNUT AVE.
VALLEJO, CA 94592
Mare Island

Generator's Phone: 415-743-4713

Container type removed from site:
☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other
Quantity 1 (~~55~~ 35 gals) RU

Container type transported to receiving facility:
☐ Drums ☒ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other
Quantity 1 Volume 35 GAL

WASTE DESCRIPTION NON-HAZARDOUS WATER
GENERATING PROCESS WELL PURGING / DECON WATER

COMPONENTS OF WASTE	PPM	%
1. WATER		100%
2.		
3.		
4.		

Waste Profile
PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE CLOTHING.

Generator Printed/Typed Name: Izzat Amadea
Signature: Izzat Amadea
Month Day Year: 09 01 15

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Ron Green
Signature: R. Green
Month Day Year: 09 01 15

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: NIETO & SONS TRUCKING, INC.
Phone#: 714-990-6855

Transporter 2 Printed/Typed Name: Jeff Wyrick
Signature:
Month Day Year: 9 23 15

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222

Phone#: 310-537-7100

Printed/Typed Name: Alberto Raygoza
Signature: Alberto Raygoza
Month Day Year: 09 23 15

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Appendix C. Analytical Data

Appendix C1. Laboratory Analytical Reports

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 268556
ANALYTICAL REPORT

Versar, Inc. 100 Hartsfield Centre Parkway Atlanta, GA 30354	Project : N62473-11-D-2215 Location : MINS BGMP Level : III Contract # : N62473-11-D-2215

Sample ID	Lab ID
DIC85W04-072815	268556-001
DIC85W06-072815	268556-002
DIC85W06-072815X	268556-003
DIC85W03-072915	268556-004
ER-072815	268556-005
DIC85W02RA-072915	268556-006
DIC85W01R-072915	268556-007
ER-072915	268556-008
TB-072815	268556-009
SB-072915	268556-010

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 08/11/2015

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**268556**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**MINS BGMP**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

This data package contains sample and QC results for ten water samples, requested for the above referenced project on 07/29/15. See attached cooler receipt form for any sample receipt problems or discrepancies.

All qualified data are compliant with appropriate corrective actions specified in Standard Operating Procedures. The Standard Operating Procedures are available upon request.

Manual integration documentation may be found in the "Case Narrative Addendum: Manual Integrations" sections.

Volatile Organics by GC/MS (EPA 8260C):
High response was observed for Freon 12 in the ICV analyzed 06/25/15 17:05; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for carbon disulfide and Freon 113 in the ICV analyzed 06/25/15 17:39; affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for 1,2-dibromo-3-chloropropane and naphthalene in the ICV analyzed 04/28/15 19:55; affected data was qualified with "b".

Low response was observed for bromomethane in the ICV analyzed 04/28/15 19:27; affected data was qualified with "b".

Low response was observed for Freon 12 in the ICV analyzed 07/07/15 18:56; affected data was qualified with "b".

High responses were observed for bromomethane, Freon 12, and vinyl acetate in the CCV analyzed 07/31/15 09:45; these analytes were not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low response was observed for Freon 113 in the CCV analyzed 07/30/15 12:08; this analyte met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for Freon 12 and naphthalene in the CCV analyzed

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**268556**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**MINS BGMP**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

Volatile Organics by GC/MS (EPA 8260C):

07/30/15 10:09; these analytes met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low response was observed for Freon 113 in the CCV analyzed 08/06/15 09:08; this analyte met minimum response criteria, and affected data was qualified with "b". High responses were observed for a number of analytes; affected data was qualified with "b".

Low responses were observed for many analytes in the CCV analyzed 07/31/15 12:35; these analytes met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; affected data was qualified with "b".

Low responses were observed for many analytes in the CCV analyzed 08/04/15 10:17; these analytes met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; affected data was qualified with "b".

High recovery was observed for chloromethane in the BS for batch 225639; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples.

High recovery was observed for 2,2-dichloropropane in the BS for batch 225681; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated samples.

High recoveries were observed for a number of analytes in the BS for batch 225767; the associated RPDs were within limits, and these high recoveries were not associated with any reported results.

High recovery was observed for 2,2-dichloropropane in the BS for batch 225842; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated sample.

High surrogate recoveries were observed for 1,2-dichloroethane-d4 in many samples.

High surrogate recovery was observed for toluene-d8 in TB-072815 (lab #

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**268556**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**MINS BGMP**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

Volatile Organics by GC/MS (EPA 8260C):
268556-009); no target analytes were detected in the sample.

Many samples were diluted due to foaming.

No other analytical problems were encountered.

Metals (EPA 6010C):
High recovery was observed for arsenic in the post digest spike of DIC85W06-072815 (lab # 268556-002); the BS/BSD were within limits.

No other analytical problems were encountered.

Chain of Custody

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

Chain of Custody #

C&T LOGIN # 268556

Project No: N1024473-11-D-2215
Project Name: MINS BGMP
Project P. O. No: ~~ATL14001-01-01-CTL~~ MW
EDD Format: Report Level ☐ II ☑ III ☐ IV
Turnaround Time: ☐ RUSH ☑ Standard
ATL14-001-01-04-CTL

Sampler: M. Mandell
Report To: T. Chunhay, H. Wollenburg
Company: JMW/ERM
Telephone: 404-443-2777
Email:

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid	# of Containers	CHEMICAL PRESERVATIVE HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST VOCs (8260)	As, Fe, Mn (3010) (6010)
1	D1C85W04-072815	072815	1219	X		3	3					X	
2	D1C85W06-072815	072815	1628	X		4	3				1	X	X
3	D1C85W06-072815X	072815	1640	X		4	3				1	X	X
4	D1C85W03-072915	072915	0908	X		3	3					X	
5	ER-072815	072915	0725	X		5	3				2	X	X
6	D1C85W02RA-072915	072915	1028	X		3	3					X	
7	D1C85W01R-072915	072915	1220	X		3	3					X	
8	ER-072915	072915	1251	X		3	3					X	
9	TB-072815	072815	—	X		2	2					X	
10	SB-072915	072915	1252	X		5	3				2	X	X

Notes:
Lab filter on metals analysis

SAMPLE RECEIPT
☐ Intact
☐ Cold
☑ On Ice
☐ Ambient

RELINQUISHED BY:
M. Mandell DATE: 9/29/15 TIME: 1508
DATE: TIME:
DATE: TIME:

RECEIVED BY:
Pat Lanfy DATE: 9/29/15 TIME: 1508
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 268556 Date Received 7/29/15 Number of coolers 1
Client JMW/ERRG Project N62473-11-D-2215

Date Opened 7/29 By (print) FBJ (sign)
Date Logged in 7/29 By (print) BL (sign)

1. Did cooler come with a shipping slip (airbill, etc) ____ YES NO
   Shipping info ____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many ____ Name ____ Date ____
2B. Were custody seals intact upon arrival? ____ YES NO N/A
3. Were custody papers dry and intact when received? ____ YES NO
4. Were custody papers filled out properly (ink, signed, etc)? ____ YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) ____ YES NO
6. Indicate the packing in cooler: (if other, describe) ____

☐ Bubble Wrap ☒ Foam blocks ☒ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.5°

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? ____ YES NO
   If YES, what time were they transferred to freezer? ____
9. Did all bottles arrive unbroken/unopened? ____ YES NO
10. Are there any missing / extra samples? ____ YES NO
11. Are samples in the appropriate containers for indicated tests? ____ YES NO
12. Are sample labels present, in good condition and complete? ____ YES NO
13. Do the sample labels agree with custody papers? ____ YES NO
14. Was sufficient amount of sample sent for tests requested? ____ YES NO
15. Are the samples appropriately preserved? ____ YES NO N/A
16. Did you check preservatives for all bottles for each sample? ____ YES NO N/A
17. Did you document your preservative check? ____ YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? ____ YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? ____ YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? ____ YES NO N/A
21. Was the client contacted concerning this sample delivery? ____ YES NO
   If YES, Who was called? ____ By ____ Date: ____

COMMENTS
20) 1/2 VOAs for -009 rcvd w/ bubbles > 6mm

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 268556

Results for any subcontracted analyses are not included in this summary.

Client : Versar, Inc.
Project : N62473-11-D-2215
Location : MINS BGMP

Client Sample ID : DIC85W04-072815 Laboratory Sample ID : 268556-001

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Vinyl Chloride	0.9	J	1.0	0.2	ug/L	As Recd	2.000	EPA 8260C	EPA 5030C
cis-1,2-Dichloroethene	0.3	J	1.0	0.3	ug/L	As Recd	2.000	EPA 8260C	EPA 5030C

Client Sample ID : DIC85W06-072815 Laboratory Sample ID : 268556-002

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Vinyl Chloride	66		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Acetone	70		33	11	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Carbon Disulfide	0.7	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
trans-1,2-Dichloroethene	3.0		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
2-Butanone	43		33	0.8	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
cis-1,2-Dichloroethene	3.7		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Benzene	0.7	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Trichloroethene	0.6	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
4-Methyl-2-Pentanone	1.0	J	33	0.5	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Toluene	1.1	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Chlorobenzene	24		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Ethylbenzene	0.9	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
m,p-Xylenes	3.6		1.7	0.4	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
o-Xylene	3.4		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Isopropylbenzene	0.8	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Propylbenzene	1.8		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,3,5-Trimethylbenzene	4.8		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,2,4-Trimethylbenzene	22		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
sec-Butylbenzene	0.8	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
para-Isopropyl Toluene	1.1	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,3-Dichlorobenzene	7.8		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,4-Dichlorobenzene	35		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
n-Butylbenzene	0.5	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,2-Dichlorobenzene	12		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Naphthalene	4.3	J	6.7	0.4	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Arsenic	29		5.0	1.5	ug/L	DISS.	1.000	EPA 6010C	METHOD
Iron	2,300		100	20	ug/L	DISS.	1.000	EPA 6010C	METHOD
Manganese	4,500		5.0	1.0	ug/L	DISS.	1.000	EPA 6010C	METHOD

Curtis & Tompkins, Ltd.

Client Sample ID : DIC85W06-072815X Laboratory Sample ID : 268556-003

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Vinyl Chloride	72		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Acetone	47		33	11	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
trans-1,2-Dichloroethene	2.5		1.7	0.5	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
2-Butanone	39		33	1.7	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
cis-1,2-Dichloroethene	3.8		1.7	0.4	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Benzene	0.8	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Trichloroethene	0.7	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
4-Methyl-2-Pentanone	1.3	J	33	0.6	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Toluene	1.0	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Chlorobenzene	23		1.7	0.4	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Ethylbenzene	1.0	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
m,p-Xylenes	4.1		1.7	0.5	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
o-Xylene	3.5		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Isopropylbenzene	0.7	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Propylbenzene	1.7		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,3,5-Trimethylbenzene	4.9		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,2,4-Trimethylbenzene	23		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
sec-Butylbenzene	0.8	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
para-Isopropyl Toluene	1.2	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,3-Dichlorobenzene	7.4		1.7	0.4	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,4-Dichlorobenzene	32		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
n-Butylbenzene	0.7	J	1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
1,2-Dichlorobenzene	11		1.7	0.3	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Naphthalene	4.6	J	6.7	0.4	ug/L	As Recd	3.333	EPA 8260C	EPA 5030C
Arsenic	28		5.0	1.5	ug/L	DISS.	1.000	EPA 6010C	METHOD
Iron	8,700		100	20	ug/L	DISS.	1.000	EPA 6010C	METHOD
Manganese	4,500		5.0	1.0	ug/L	DISS.	1.000	EPA 6010C	METHOD

Client Sample ID : DIC85W03-072915 Laboratory Sample ID : 268556-004

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	1.9	J	2.0	0.4	ug/L	As Recd	4.000	EPA 8260C	EPA 5030C

Client Sample ID : ER-072815 Laboratory Sample ID : 268556-005

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	0.2	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260C	EPA 5030C

Client Sample ID : DIC85W02RA-072915 Laboratory Sample ID : 268556-006

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Carbon Disulfide	1.3	J	3.6	0.7	ug/L	As Recd	7.143	EPA 8260C	EPA 5030C
cis-1,2-Dichloroethene	1.5	J	3.6	0.7	ug/L	As Recd	7.143	EPA 8260C	EPA 5030C
Toluene	1.0	J	3.6	0.7	ug/L	As Recd	7.143	EPA 8260C	EPA 5030C

Curtis & Tompkins, Ltd.

Client Sample ID : DIC85W01R-072915 Laboratory Sample ID : 268556-007

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
1,3-Dichlorobenzene	1.6		1.0	0.2	ug/L	As Recd	2.000	EPA 8260C	EPA 5030C
1,4-Dichlorobenzene	6.0		1.0	0.2	ug/L	As Recd	2.000	EPA 8260C	EPA 5030C
1,2-Dichlorobenzene	0.4	J	1.0	0.2	ug/L	As Recd	2.000	EPA 8260C	EPA 5030C

Client Sample ID : ER-072915 Laboratory Sample ID : 268556-008

No Detections

Client Sample ID : TB-072815 Laboratory Sample ID : 268556-009

No Detections

Client Sample ID : SB-072915 Laboratory Sample ID : 268556-010

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
2-Butanone	2.4	J	10	0.5	ug/L	As Recd	1.000	EPA 8260C	EPA 5030C
Toluene	0.2	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260C	EPA 5030C
m,p-Xylenes	0.1	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260C	EPA 5030C

J = Estimated value

Laboratory Job Number 268556

ANALYTICAL REPORT

Volatile Organics by GC/MS

Matrix: Water

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W04-072815	Diln Fac:	2.000
Lab ID:	268556-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.4 U	2.0	0.2	225639	07/30/15
Chloromethane	0.8 U	2.0	0.5	225639	07/30/15
Vinyl Chloride	0.9 J	1.0	0.2	225639	07/30/15
Bromomethane	0.8 U	2.0	0.4	225639	07/30/15
Chloroethane	0.8 U	2.0	0.5	225639	07/30/15
Trichlorofluoromethane	0.8 U	2.0	0.5	225639	07/30/15
Acetone	8.0 U	20	6.6	225639	07/30/15
Freon 113	0.9 U	4.0	0.3	225691	07/31/15
1,1-Dichloroethene	0.4 U	1.0	0.3	225639	07/30/15
Methylene Chloride	0.4 U	20	0.4	225639	07/30/15
Carbon Disulfide	0.8 U	1.0	0.2	225691	07/31/15
MTBE	0.4 U	1.0	0.2	225639	07/30/15
trans-1,2-Dichloroethene	0.4 U	1.0	0.3	225639	07/30/15
Vinyl Acetate	4.0 U	20	2.3	225639	07/30/15
1,1-Dichloroethane	0.4 U	1.0	0.3	225639	07/30/15
2-Butanone	4.0 U	20	1.0	225639	07/30/15
cis-1,2-Dichloroethene	0.3 J	1.0	0.3	225639	07/30/15
2,2-Dichloropropane	0.4 U	1.0	0.3	225639	07/30/15
Chloroform	0.4 U	1.0	0.2	225639	07/30/15
Bromochloromethane	0.4 U	1.0	0.3	225639	07/30/15
1,1,1-Trichloroethane	0.4 U	1.0	0.3	225639	07/30/15
1,1-Dichloropropene	0.4 U	1.0	0.3	225639	07/30/15
Carbon Tetrachloride	0.4 U	1.0	0.2	225639	07/30/15
1,2-Dichloroethane	0.4 U	1.0	0.2	225639	07/30/15
Benzene	0.4 U	1.0	0.2	225639	07/30/15
Trichloroethene	0.4 U	1.0	0.2	225639	07/30/15
1,2-Dichloropropane	0.4 U	1.0	0.3	225639	07/30/15
Bromodichloromethane	0.4 U	1.0	0.2	225639	07/30/15
Dibromomethane	0.4 U	1.0	0.3	225639	07/30/15
4-Methyl-2-Pentanone	2.0 U	20	1.3	225639	07/30/15
cis-1,3-Dichloropropene	0.4 U	1.0	0.2	225639	07/30/15
Toluene	0.4 U	1.0	0.2	225639	07/30/15
trans-1,3-Dichloropropene	0.4 U	1.0	0.3	225639	07/30/15
1,1,2-Trichloroethane	0.4 U	1.0	0.3	225639	07/30/15
2-Hexanone	2.0 U	20	1.0	225639	07/30/15
1,3-Dichloropropane	0.4 U	1.0	0.3	225639	07/30/15
Tetrachloroethene	0.4 U	1.0	0.2	225639	07/30/15
Dibromochloromethane	0.4 U	1.0	0.3	225639	07/30/15
1,2-Dibromoethane	0.4 U	1.0	0.3	225639	07/30/15
Chlorobenzene	0.4 U	1.0	0.3	225639	07/30/15
1,1,1,2-Tetrachloroethane	0.4 U	1.0	0.2	225639	07/30/15
Ethylbenzene	0.4 U	1.0	0.2	225639	07/30/15
m,p-Xylenes	0.8 U	1.0	0.3	225639	07/30/15
o-Xylene	0.4 U	1.0	0.2	225639	07/30/15
Styrene	0.4 U	1.0	0.2	225639	07/30/15
Bromoform	0.8 U	2.0	0.3	225639	07/30/15
Isopropylbenzene	0.4 U	1.0	0.2	225639	07/30/15
1,1,2,2-Tetrachloroethane	0.4 U	1.0	0.2	225639	07/30/15
1,2,3-Trichloropropane	0.4 U	1.0	0.3	225639	07/30/15
Propylbenzene	0.4 U	1.0	0.2	225639	07/30/15
Bromobenzene	0.4 U	1.0	0.2	225639	07/30/15
1,3,5-Trimethylbenzene	0.4 U	1.0	0.2	225639	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W04-072815	Diln Fac:	2.000
Lab ID:	268556-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.4 U	1.0	0.2	225639	07/30/15
4-Chlorotoluene	0.4 U	1.0	0.2	225639	07/30/15
tert-Butylbenzene	0.4 U	1.0	0.2	225639	07/30/15
1,2,4-Trimethylbenzene	0.4 U	1.0	0.2	225639	07/30/15
sec-Butylbenzene	0.4 U	1.0	0.2	225639	07/30/15
para-Isopropyl Toluene	0.4 U	1.0	0.2	225639	07/30/15
1,3-Dichlorobenzene	0.4 U	1.0	0.2	225639	07/30/15
1,4-Dichlorobenzene	0.4 U	1.0	0.2	225639	07/30/15
n-Butylbenzene	0.4 U	1.0	0.2	225639	07/30/15
1,2-Dichlorobenzene	0.4 U	1.0	0.2	225639	07/30/15
1,2-Dibromo-3-Chloropropane	2.0 U	4.0	0.5	225639	07/30/15
1,2,4-Trichlorobenzene	0.4 U	1.0	0.3	225639	07/30/15
Hexachlorobutadiene	0.8 U	4.0	0.3	225639	07/30/15
Naphthalene	0.8 U	4.0	0.2	225639	07/30/15
1,2,3-Trichlorobenzene	0.4 U	1.0	0.3	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	109	85-115	225639	07/30/15
Dibromofluoromethane	114	85-115	225691	07/31/15
1,2-Dichloroethane-d4	122 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	114	70-120	225691	07/31/15
Toluene-d8	103	85-120	225639	07/30/15
Toluene-d8	97	85-120	225691	07/31/15
Bromofluorobenzene	104	75-120	225639	07/30/15
Bromofluorobenzene	108	75-120	225691	07/31/15

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J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W06-072815	Diln Fac:	3.333
Lab ID:	268556-002	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.7 U	3.3	0.3	225681	07/31/15
Chloromethane	1.3 U	3.3	0.3	225638	07/30/15
Vinyl Chloride	66	1.7	0.3	225638	07/30/15
Bromomethane	1.3 U	3.3	0.6	225681	07/31/15
Chloroethane	1.3 U	3.3	0.3	225638	07/30/15
Trichlorofluoromethane	0.7 U	3.3	0.3	225638	07/30/15
Acetone	70	33	11	225638	07/30/15
Freon 113	1.3 U	6.7	0.4	225638	07/30/15
1,1-Dichloroethene	1.3 U	1.7	0.4	225638	07/30/15
Methylene Chloride	1.3 U	33	0.4	225638	07/30/15
Carbon Disulfide	0.7 J	1.7	0.3	225638	07/30/15
MTBE	0.7 U	1.7	0.3	225638	07/30/15
trans-1,2-Dichloroethene	3.0	1.7	0.3	225638	07/30/15
Vinyl Acetate	3.3 U	33	0.8	225638	07/30/15
1,1-Dichloroethane	0.7 U	1.7	0.3	225638	07/30/15
2-Butanone	43	33	0.8	225638	07/30/15
cis-1,2-Dichloroethene	3.7	1.7	0.3	225638	07/30/15
2,2-Dichloropropane	0.7 U	1.7	0.5	225681	07/31/15
Chloroform	0.7 U	1.7	0.3	225638	07/30/15
Bromochloromethane	1.3 U	1.7	0.5	225638	07/30/15
1,1,1-Trichloroethane	1.3 U	1.7	0.5	225638	07/30/15
1,1-Dichloropropene	0.7 U	1.7	0.3	225638	07/30/15
Carbon Tetrachloride	1.3 U	1.7	0.3	225638	07/30/15
1,2-Dichloroethane	1.3 U	1.7	0.3	225638	07/30/15
Benzene	0.7 J	1.7	0.3	225638	07/30/15
Trichloroethene	0.6 J	1.7	0.3	225638	07/30/15
1,2-Dichloropropane	0.7 U	1.7	0.3	225638	07/30/15
Bromodichloromethane	0.7 U	1.7	0.3	225638	07/30/15
Dibromomethane	0.7 U	1.7	0.5	225638	07/30/15
4-Methyl-2-Pentanone	1.0 J	33	0.5	225638	07/30/15
cis-1,3-Dichloropropene	1.3 U	1.7	0.4	225638	07/30/15
Toluene	1.1 J	1.7	0.3	225638	07/30/15
trans-1,3-Dichloropropene	1.3 U	1.7	0.3	225638	07/30/15
1,1,2-Trichloroethane	1.3 U	1.7	0.3	225638	07/30/15
2-Hexanone	1.3 U	33	0.6	225638	07/30/15
1,3-Dichloropropane	0.7 U	1.7	0.3	225638	07/30/15
Tetrachloroethene	0.7 U	1.7	0.4	225638	07/30/15
Dibromochloromethane	0.7 U	1.7	0.3	225638	07/30/15
1,2-Dibromoethane	0.7 U	1.7	0.4	225638	07/30/15
Chlorobenzene	24	1.7	0.3	225638	07/30/15
1,1,1,2-Tetrachloroethane	0.7 U	1.7	0.3	225638	07/30/15
Ethylbenzene	0.9 J	1.7	0.3	225638	07/30/15
m,p-Xylenes	3.6	1.7	0.4	225638	07/30/15
o-Xylene	3.4	1.7	0.3	225638	07/30/15
Styrene	1.3 U	1.7	0.5	225638	07/30/15
Bromoform	1.3 U	3.3	0.3	225638	07/30/15
Isopropylbenzene	0.8 J	1.7	0.3	225638	07/30/15
1,1,2,2-Tetrachloroethane	1.3 U	1.7	0.3	225638	07/30/15
1,2,3-Trichloropropane	0.7 U	1.7	0.3	225638	07/30/15
Propylbenzene	1.8	1.7	0.3	225638	07/30/15
Bromobenzene	0.7 U	1.7	0.3	225638	07/30/15
1,3,5-Trimethylbenzene	4.8	1.7	0.3	225638	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
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DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W06-072815	Diln Fac:	3.333
Lab ID:	268556-002	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.7 U	1.7	0.3	225638	07/30/15
4-Chlorotoluene	0.7 U	1.7	0.3	225638	07/30/15
tert-Butylbenzene	0.7 U	1.7	0.3	225638	07/30/15
1,2,4-Trimethylbenzene	22	1.7	0.3	225638	07/30/15
sec-Butylbenzene	0.8 J	1.7	0.3	225638	07/30/15
para-Isopropyl Toluene	1.1 J	1.7	0.3	225638	07/30/15
1,3-Dichlorobenzene	7.8	1.7	0.3	225638	07/30/15
1,4-Dichlorobenzene	35	1.7	0.3	225638	07/30/15
n-Butylbenzene	0.5 J	1.7	0.3	225681	07/31/15
1,2-Dichlorobenzene	12	1.7	0.3	225638	07/30/15
1,2-Dibromo-3-Chloropropane	3.3 U	6.7	0.8	225681	07/31/15
1,2,4-Trichlorobenzene	1.5 U	1.7	0.4	225638	07/30/15
Hexachlorobutadiene	1.3 U	6.7	0.8	225638	07/30/15
Naphthalene	4.3 J	6.7	0.4	225681	07/31/15
1,2,3-Trichlorobenzene	1.5 U	1.7	0.4	225638	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	104	85-115	225638	07/30/15
Dibromofluoromethane	111	85-115	225681	07/31/15
1,2-Dichloroethane-d4	96	70-120	225638	07/30/15
1,2-Dichloroethane-d4	131 *	70-120	225681	07/31/15
Toluene-d8	102	85-120	225638	07/30/15
Toluene-d8	99	85-120	225681	07/31/15
Bromofluorobenzene	104	75-120	225638	07/30/15
Bromofluorobenzene	104	75-120	225681	07/31/15

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J= Estimated value
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LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W06-072815X	Diln Fac:	3.333
Lab ID:	268556-003	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.7 U	3.3	0.3	225639	07/30/15
Chloromethane	1.3 U	3.3	0.9	225639	07/30/15
Vinyl Chloride	72	1.7	0.3	225639	07/30/15
Bromomethane	1.3 U	3.3	0.6	225639	07/30/15
Chloroethane	1.3 U	3.3	0.9	225639	07/30/15
Trichlorofluoromethane	1.3 U	3.3	0.8	225639	07/30/15
Acetone	47	33	11	225639	07/30/15
Freon 113	1.5 U	6.7	0.5	225691	07/31/15
1,1-Dichloroethene	0.7 U	1.7	0.5	225639	07/30/15
Methylene Chloride	0.7 U	33	0.6	225639	07/30/15
Carbon Disulfide	1.3 U	1.7	0.3	225691	07/31/15
MTBE	0.7 U	1.7	0.4	225639	07/30/15
trans-1,2-Dichloroethene	2.5	1.7	0.5	225639	07/30/15
Vinyl Acetate	6.7 U	33	3.8	225639	07/30/15
1,1-Dichloroethane	0.7 U	1.7	0.5	225639	07/30/15
2-Butanone	39	33	1.7	225639	07/30/15
cis-1,2-Dichloroethene	3.8	1.7	0.4	225639	07/30/15
2,2-Dichloropropane	0.7 U	1.7	0.5	225639	07/30/15
Chloroform	0.7 U	1.7	0.3	225639	07/30/15
Bromochloromethane	0.7 U	1.7	0.5	225639	07/30/15
1,1,1-Trichloroethane	0.7 U	1.7	0.4	225639	07/30/15
1,1-Dichloropropene	1.3 U	1.7	0.3	225691	07/31/15
Carbon Tetrachloride	1.3 U	1.7	0.3	225691	07/31/15
1,2-Dichloroethane	1.3 U	1.7	0.3	225691	07/31/15
Benzene	0.8 J	1.7	0.3	225691	07/31/15
Trichloroethene	0.7 J	1.7	0.3	225691	07/31/15
1,2-Dichloropropane	0.7 U	1.7	0.5	225691	07/31/15
Bromodichloromethane	0.7 U	1.7	0.3	225691	07/31/15
Dibromomethane	1.3 U	1.7	0.3	225691	07/31/15
4-Methyl-2-Pentanone	1.3 J	33	0.6	225691	07/31/15
cis-1,3-Dichloropropene	1.3 U	1.7	0.3	225691	07/31/15
Toluene	1.0 J	1.7	0.3	225639	07/30/15
trans-1,3-Dichloropropene	0.7 U	1.7	0.5	225639	07/30/15
1,1,2-Trichloroethane	0.7 U	1.7	0.5	225639	07/30/15
2-Hexanone	3.3 U	33	1.7	225639	07/30/15
1,3-Dichloropropane	0.7 U	1.7	0.5	225639	07/30/15
Tetrachloroethene	0.7 U	1.7	0.3	225639	07/30/15
Dibromochloromethane	0.7 U	1.7	0.5	225639	07/30/15
1,2-Dibromoethane	0.7 U	1.7	0.4	225639	07/30/15
Chlorobenzene	23	1.7	0.4	225639	07/30/15
1,1,1,2-Tetrachloroethane	0.7 U	1.7	0.3	225639	07/30/15
Ethylbenzene	1.0 J	1.7	0.3	225639	07/30/15
m,p-Xylenes	4.1	1.7	0.5	225639	07/30/15
o-Xylene	3.5	1.7	0.3	225639	07/30/15
Styrene	0.7 U	1.7	0.3	225639	07/30/15
Bromoform	1.3 U	3.3	0.5	225639	07/30/15
Isopropylbenzene	0.7 J	1.7	0.3	225639	07/30/15
1,1,2,2-Tetrachloroethane	0.7 U	1.7	0.4	225639	07/30/15
1,2,3-Trichloropropane	0.7 U	1.7	0.5	225639	07/30/15
Propylbenzene	1.7	1.7	0.3	225639	07/30/15
Bromobenzene	0.7 U	1.7	0.4	225639	07/30/15
1,3,5-Trimethylbenzene	4.9	1.7	0.3	225639	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W06-072815X	Diln Fac:	3.333
Lab ID:	268556-003	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.7 U	1.7	0.3	225639	07/30/15
4-Chlorotoluene	0.7 U	1.7	0.3	225639	07/30/15
tert-Butylbenzene	0.7 U	1.7	0.3	225639	07/30/15
1,2,4-Trimethylbenzene	23	1.7	0.3	225639	07/30/15
sec-Butylbenzene	0.8 J	1.7	0.3	225639	07/30/15
para-Isopropyl Toluene	1.2 J	1.7	0.3	225639	07/30/15
1,3-Dichlorobenzene	7.4	1.7	0.4	225639	07/30/15
1,4-Dichlorobenzene	32	1.7	0.3	225639	07/30/15
n-Butylbenzene	0.7 J	1.7	0.3	225639	07/30/15
1,2-Dichlorobenzene	11	1.7	0.3	225639	07/30/15
1,2-Dibromo-3-Chloropropane	3.3 U	6.7	0.8	225639	07/30/15
1,2,4-Trichlorobenzene	0.7 U	1.7	0.4	225639	07/30/15
Hexachlorobutadiene	1.3 U	6.7	0.5	225639	07/30/15
Naphthalene	4.6 J	6.7	0.4	225639	07/30/15
1,2,3-Trichlorobenzene	0.7 U	1.7	0.5	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	107	85-115	225639	07/30/15
Dibromofluoromethane	113	85-115	225691	07/31/15
1,2-Dichloroethane-d4	125 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	114	70-120	225691	07/31/15
Toluene-d8	99	85-120	225639	07/30/15
Toluene-d8	103	85-120	225691	07/31/15
Bromofluorobenzene	99	75-120	225639	07/30/15
Bromofluorobenzene	101	75-120	225691	07/31/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W03-072915	Diln Fac:	4.000
Lab ID:	268556-004	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.8 U	4.0	0.4	225681	07/31/15
Chloromethane	1.6 U	4.0	0.4	225638	07/30/15
Vinyl Chloride	1.6 U	2.0	0.4	225638	07/30/15
Bromomethane	1.6 U	4.0	0.7	225681	07/31/15
Chloroethane	1.6 U	4.0	0.4	225638	07/30/15
Trichlorofluoromethane	0.8 U	4.0	0.4	225638	07/30/15
Acetone	20 U	40	13	225638	07/30/15
Freon 113	1.6 U	8.0	0.5	225638	07/30/15
1,1-Dichloroethene	1.6 U	2.0	0.5	225638	07/30/15
Methylene Chloride	1.6 U	40	0.5	225638	07/30/15
Carbon Disulfide	1.9 J	2.0	0.4	225638	07/30/15
MTBE	0.8 U	2.0	0.4	225638	07/30/15
trans-1,2-Dichloroethene	1.6 U	2.0	0.4	225638	07/30/15
Vinyl Acetate	4.0 U	40	1.0	225638	07/30/15
1,1-Dichloroethane	0.8 U	2.0	0.4	225638	07/30/15
2-Butanone	4.0 U	40	1.0	225638	07/30/15
cis-1,2-Dichloroethene	1.6 U	2.0	0.4	225638	07/30/15
2,2-Dichloropropane	0.8 U	2.0	0.6	225681	07/31/15
Chloroform	0.8 U	2.0	0.4	225638	07/30/15
Bromochloromethane	1.6 U	2.0	0.6	225638	07/30/15
1,1,1-Trichloroethane	1.6 U	2.0	0.6	225638	07/30/15
1,1-Dichloropropene	0.8 U	2.0	0.4	225638	07/30/15
Carbon Tetrachloride	1.6 U	2.0	0.4	225638	07/30/15
1,2-Dichloroethane	1.6 U	2.0	0.4	225638	07/30/15
Benzene	0.8 U	2.0	0.4	225638	07/30/15
Trichloroethene	0.8 U	2.0	0.4	225638	07/30/15
1,2-Dichloropropane	0.8 U	2.0	0.4	225638	07/30/15
Bromodichloromethane	0.8 U	2.0	0.4	225638	07/30/15
Dibromomethane	0.8 U	2.0	0.6	225638	07/30/15
4-Methyl-2-Pentanone	1.6 U	40	0.6	225638	07/30/15
cis-1,3-Dichloropropene	1.6 U	2.0	0.5	225638	07/30/15
Toluene	0.8 U	2.0	0.4	225638	07/30/15
trans-1,3-Dichloropropene	1.6 U	2.0	0.4	225638	07/30/15
1,1,2-Trichloroethane	1.6 U	2.0	0.4	225638	07/30/15
2-Hexanone	1.6 U	40	0.7	225638	07/30/15
1,3-Dichloropropane	0.8 U	2.0	0.4	225638	07/30/15
Tetrachloroethene	0.8 U	2.0	0.4	225638	07/30/15
Dibromochloromethane	0.8 U	2.0	0.4	225638	07/30/15
1,2-Dibromoethane	0.8 U	2.0	0.5	225638	07/30/15
Chlorobenzene	0.8 U	2.0	0.4	225638	07/30/15
1,1,1,2-Tetrachloroethane	0.8 U	2.0	0.4	225638	07/30/15
Ethylbenzene	0.8 U	2.0	0.4	225638	07/30/15
m,p-Xylenes	0.8 U	2.0	0.5	225638	07/30/15
o-Xylene	0.8 U	2.0	0.4	225638	07/30/15
Styrene	1.6 U	2.0	0.6	225638	07/30/15
Bromoform	1.6 U	4.0	0.4	225638	07/30/15
Isopropylbenzene	0.8 U	2.0	0.4	225638	07/30/15
1,1,2,2-Tetrachloroethane	1.6 U	2.0	0.4	225638	07/30/15
1,2,3-Trichloropropane	0.8 U	2.0	0.4	225638	07/30/15
Propylbenzene	0.8 U	2.0	0.4	225638	07/30/15
Bromobenzene	0.8 U	2.0	0.4	225638	07/30/15
1,3,5-Trimethylbenzene	0.8 U	2.0	0.4	225638	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W03-072915	Diln Fac:	4.000
Lab ID:	268556-004	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.8 U	2.0	0.4	225638	07/30/15
4-Chlorotoluene	0.8 U	2.0	0.4	225638	07/30/15
tert-Butylbenzene	0.8 U	2.0	0.4	225638	07/30/15
1,2,4-Trimethylbenzene	0.8 U	2.0	0.4	225638	07/30/15
sec-Butylbenzene	0.8 U	2.0	0.4	225638	07/30/15
para-Isopropyl Toluene	0.8 U	2.0	0.4	225638	07/30/15
1,3-Dichlorobenzene	1.6 U	2.0	0.4	225638	07/30/15
1,4-Dichlorobenzene	1.6 U	2.0	0.4	225638	07/30/15
n-Butylbenzene	0.8 U	2.0	0.4	225638	07/30/15
1,2-Dichlorobenzene	1.6 U	2.0	0.4	225638	07/30/15
1,2-Dibromo-3-Chloropropane	4.0 U	8.0	1.0	225681	07/31/15
1,2,4-Trichlorobenzene	1.8 U	2.0	0.5	225638	07/30/15
Hexachlorobutadiene	1.6 U	8.0	1.0	225638	07/30/15
Naphthalene	1.6 U	8.0	0.4	225681	07/31/15
1,2,3-Trichlorobenzene	1.8 U	2.0	0.5	225638	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	102	85-115	225638	07/30/15
Dibromofluoromethane	110	85-115	225681	07/31/15
1,2-Dichloroethane-d4	95	70-120	225638	07/30/15
1,2-Dichloroethane-d4	133 *	70-120	225681	07/31/15
Toluene-d8	104	85-120	225638	07/30/15
Toluene-d8	105	85-120	225681	07/31/15
Bromofluorobenzene	107	75-120	225638	07/30/15
Bromofluorobenzene	106	75-120	225681	07/31/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	ER-072815	Diln Fac:	1.000
Lab ID:	268556-005	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.2 U	1.0	0.1	225639	07/30/15
Chloromethane	0.4 U	1.0	0.3	225639	07/30/15
Vinyl Chloride	0.2 U	0.5	0.1	225639	07/30/15
Bromomethane	0.4 U	1.0	0.2	225639	07/30/15
Chloroethane	0.4 U	1.0	0.3	225639	07/30/15
Trichlorofluoromethane	0.4 U	1.0	0.2	225639	07/30/15
Acetone	4.0 U	10	3.3	225639	07/30/15
Freon 113	0.4 U	2.0	0.1	225767	08/04/15
1,1-Dichloroethene	0.2 U	0.5	0.2	225639	07/30/15
Methylene Chloride	0.2 U	10	0.2	225639	07/30/15
Carbon Disulfide	0.2 J	0.5	0.1	225767	08/04/15
MTBE	0.2 U	0.5	0.1	225639	07/30/15
trans-1,2-Dichloroethene	0.2 U	0.5	0.2	225639	07/30/15
Vinyl Acetate	2.0 U	10	1.1	225639	07/30/15
1,1-Dichloroethane	0.2 U	0.5	0.2	225639	07/30/15
2-Butanone	2.0 U	10	0.5	225639	07/30/15
cis-1,2-Dichloroethene	0.2 U	0.5	0.1	225639	07/30/15
2,2-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Chloroform	0.2 U	0.5	0.1	225639	07/30/15
Bromochloromethane	0.2 U	0.5	0.1	225639	07/30/15
1,1,1-Trichloroethane	0.2 U	0.5	0.1	225639	07/30/15
1,1-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
Carbon Tetrachloride	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichloroethane	0.2 U	0.5	0.1	225639	07/30/15
Benzene	0.2 U	0.5	0.1	225639	07/30/15
Trichloroethene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Bromodichloromethane	0.2 U	0.5	0.1	225639	07/30/15
Dibromomethane	0.2 U	0.5	0.1	225639	07/30/15
4-Methyl-2-Pentanone	1.0 U	10	0.7	225639	07/30/15
cis-1,3-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
Toluene	0.2 U	0.5	0.1	225639	07/30/15
trans-1,3-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
1,1,2-Trichloroethane	0.2 U	0.5	0.2	225639	07/30/15
2-Hexanone	1.0 U	10	0.5	225639	07/30/15
1,3-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Tetrachloroethene	0.2 U	0.5	0.1	225639	07/30/15
Dibromochloromethane	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dibromoethane	0.2 U	0.5	0.1	225639	07/30/15
Chlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1	225639	07/30/15
Ethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
m,p-Xylenes	0.4 U	0.5	0.1	225639	07/30/15
o-Xylene	0.2 U	0.5	0.1	225639	07/30/15
Styrene	0.2 U	0.5	0.1	225639	07/30/15
Bromoform	0.4 U	1.0	0.1	225639	07/30/15
Isopropylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1	225639	07/30/15
1,2,3-Trichloropropane	0.2 U	0.5	0.2	225639	07/30/15
Propylbenzene	0.2 U	0.5	0.1	225639	07/30/15
Bromobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1	225639	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	ER-072815	Diln Fac:	1.000
Lab ID:	268556-005	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.2 U	0.5	0.1	225639	07/30/15
4-Chlorotoluene	0.2 U	0.5	0.1	225639	07/30/15
tert-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
sec-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
para-Isopropyl Toluene	0.2 U	0.5	0.1	225639	07/30/15
1,3-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,4-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
n-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3	225639	07/30/15
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
Hexachlorobutadiene	0.4 U	2.0	0.1	225639	07/30/15
Naphthalene	0.4 U	2.0	0.1	225639	07/30/15
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	108	85-115	225639	07/30/15
Dibromofluoromethane	103	85-115	225767	08/04/15
1,2-Dichloroethane-d4	125 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	94	70-120	225767	08/04/15
Toluene-d8	104	85-120	225639	07/30/15
Toluene-d8	103	85-120	225767	08/04/15
Bromofluorobenzene	101	75-120	225639	07/30/15
Bromofluorobenzene	109	75-120	225767	08/04/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W02RA-072915	Diln Fac:	7.143
Lab ID:	268556-006	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	1.4 U	7.1	0.7	225842	08/06/15
Chloromethane	2.9 U	7.1	0.7	225638	07/30/15
Vinyl Chloride	2.9 U	3.6	0.7	225638	07/30/15
Bromomethane	2.9 U	7.1	1.3	225842	08/06/15
Chloroethane	2.9 U	7.1	0.7	225638	07/30/15
Trichlorofluoromethane	1.4 U	7.1	0.7	225638	07/30/15
Acetone	36 U	71	24	225638	07/30/15
Freon 113	2.9 U	14	0.9	225638	07/30/15
1,1-Dichloroethene	2.9 U	3.6	0.9	225638	07/30/15
Methylene Chloride	2.9 U	71	0.9	225638	07/30/15
Carbon Disulfide	1.3 J	3.6	0.7	225638	07/30/15
MTBE	1.4 U	3.6	0.7	225638	07/30/15
trans-1,2-Dichloroethene	2.9 U	3.6	0.7	225638	07/30/15
Vinyl Acetate	7.1 U	71	1.8	225638	07/30/15
1,1-Dichloroethane	1.4 U	3.6	0.7	225638	07/30/15
2-Butanone	7.1 U	71	1.8	225638	07/30/15
cis-1,2-Dichloroethene	1.5 J	3.6	0.7	225638	07/30/15
2,2-Dichloropropane	1.4 U	3.6	1.0	225842	08/06/15
Chloroform	1.4 U	3.6	0.7	225638	07/30/15
Bromochloromethane	2.9 U	3.6	1.1	225638	07/30/15
1,1,1-Trichloroethane	2.9 U	3.6	1.1	225638	07/30/15
1,1-Dichloropropene	1.4 U	3.6	0.7	225638	07/30/15
Carbon Tetrachloride	2.9 U	3.6	0.7	225638	07/30/15
1,2-Dichloroethane	2.9 U	3.6	0.7	225638	07/30/15
Benzene	1.4 U	3.6	0.7	225638	07/30/15
Trichloroethene	1.4 U	3.6	0.7	225638	07/30/15
1,2-Dichloropropane	1.4 U	3.6	0.7	225638	07/30/15
Bromodichloromethane	1.4 U	3.6	0.7	225638	07/30/15
Dibromomethane	1.4 U	3.6	1.0	225638	07/30/15
4-Methyl-2-Pentanone	2.9 U	71	1.1	225638	07/30/15
cis-1,3-Dichloropropene	2.9 U	3.6	0.8	225638	07/30/15
Toluene	1.0 J	3.6	0.7	225638	07/30/15
trans-1,3-Dichloropropene	2.9 U	3.6	0.7	225638	07/30/15
1,1,2-Trichloroethane	2.9 U	3.6	0.7	225638	07/30/15
2-Hexanone	2.9 U	71	1.2	225638	07/30/15
1,3-Dichloropropane	1.4 U	3.6	0.7	225638	07/30/15
Tetrachloroethene	1.4 U	3.6	0.8	225638	07/30/15
Dibromochloromethane	1.4 U	3.6	0.7	225638	07/30/15
1,2-Dibromoethane	1.4 U	3.6	0.9	225638	07/30/15
Chlorobenzene	1.4 U	3.6	0.7	225638	07/30/15
1,1,1,2-Tetrachloroethane	1.4 U	3.6	0.7	225638	07/30/15
Ethylbenzene	1.4 U	3.6	0.7	225638	07/30/15
m,p-Xylenes	1.4 U	3.6	0.9	225638	07/30/15
o-Xylene	1.4 U	3.6	0.7	225638	07/30/15
Styrene	2.9 U	3.6	1.1	225638	07/30/15
Bromoform	2.9 U	7.1	0.7	225638	07/30/15
Isopropylbenzene	1.4 U	3.6	0.7	225638	07/30/15
1,1,2,2-Tetrachloroethane	2.9 U	3.6	0.7	225638	07/30/15
1,2,3-Trichloropropane	1.4 U	3.6	0.7	225638	07/30/15
Propylbenzene	1.4 U	3.6	0.7	225638	07/30/15
Bromobenzene	1.4 U	3.6	0.7	225638	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W02RA-072915	Diln Fac:	7.143
Lab ID:	268556-006	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
1,3,5-Trimethylbenzene	1.4 U	3.6	0.7	225638	07/30/15
2-Chlorotoluene	1.4 U	3.6	0.7	225638	07/30/15
4-Chlorotoluene	1.4 U	3.6	0.7	225638	07/30/15
tert-Butylbenzene	1.4 U	3.6	0.7	225638	07/30/15
1,2,4-Trimethylbenzene	1.4 U	3.6	0.7	225638	07/30/15
sec-Butylbenzene	1.4 U	3.6	0.7	225638	07/30/15
para-Isopropyl Toluene	1.4 U	3.6	0.7	225638	07/30/15
1,3-Dichlorobenzene	2.9 U	3.6	0.7	225638	07/30/15
1,4-Dichlorobenzene	2.9 U	3.6	0.7	225638	07/30/15
n-Butylbenzene	1.4 U	3.6	0.7	225638	07/30/15
1,2-Dichlorobenzene	2.9 U	3.6	0.7	225638	07/30/15
1,2-Dibromo-3-Chloropropane	7.1 U	14	1.8	225842	08/06/15
1,2,4-Trichlorobenzene	3.2 U	3.6	0.9	225638	07/30/15
Hexachlorobutadiene	2.9 U	14	1.7	225638	07/30/15
Naphthalene	2.9 U	14	0.8	225842	08/06/15
1,2,3-Trichlorobenzene	3.2 U	3.6	0.9	225638	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	104	85-115	225638	07/30/15
Dibromofluoromethane	115	85-115	225842	08/06/15
1,2-Dichloroethane-d4	96	70-120	225638	07/30/15
1,2-Dichloroethane-d4	133 * b	70-120	225842	08/06/15
Toluene-d8	103	85-120	225638	07/30/15
Toluene-d8	105	85-120	225842	08/06/15
Bromofluorobenzene	110	75-120	225638	07/30/15
Bromofluorobenzene	106	75-120	225842	08/06/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W01R-072915	Diln Fac:	2.000
Lab ID:	268556-007	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.4 U	2.0	0.2	225681	07/31/15
Chloromethane	0.8 U	2.0	0.2	225638	07/30/15
Vinyl Chloride	0.8 U	1.0	0.2	225638	07/30/15
Bromomethane	0.8 U	2.0	0.4	225681	07/31/15
Chloroethane	0.8 U	2.0	0.2	225638	07/30/15
Trichlorofluoromethane	0.4 U	2.0	0.2	225638	07/30/15
Acetone	10 U	20	6.6	225638	07/30/15
Freon 113	0.8 U	4.0	0.2	225638	07/30/15
1,1-Dichloroethene	0.8 U	1.0	0.3	225638	07/30/15
Methylene Chloride	0.8 U	20	0.3	225638	07/30/15
Carbon Disulfide	0.8 U	1.0	0.2	225638	07/30/15
MTBE	0.4 U	1.0	0.2	225638	07/30/15
trans-1,2-Dichloroethene	0.8 U	1.0	0.2	225638	07/30/15
Vinyl Acetate	2.0 U	20	0.5	225638	07/30/15
1,1-Dichloroethane	0.4 U	1.0	0.2	225638	07/30/15
2-Butanone	2.0 U	20	0.5	225638	07/30/15
cis-1,2-Dichloroethene	0.8 U	1.0	0.2	225638	07/30/15
2,2-Dichloropropane	0.4 U	1.0	0.3	225681	07/31/15
Chloroform	0.4 U	1.0	0.2	225638	07/30/15
Bromochloromethane	0.8 U	1.0	0.3	225638	07/30/15
1,1,1-Trichloroethane	0.8 U	1.0	0.3	225638	07/30/15
1,1-Dichloropropene	0.4 U	1.0	0.2	225638	07/30/15
Carbon Tetrachloride	0.8 U	1.0	0.2	225638	07/30/15
1,2-Dichloroethane	0.8 U	1.0	0.2	225638	07/30/15
Benzene	0.4 U	1.0	0.2	225638	07/30/15
Trichloroethene	0.4 U	1.0	0.2	225638	07/30/15
1,2-Dichloropropane	0.4 U	1.0	0.2	225638	07/30/15
Bromodichloromethane	0.4 U	1.0	0.2	225638	07/30/15
Dibromomethane	0.4 U	1.0	0.3	225638	07/30/15
4-Methyl-2-Pentanone	0.8 U	20	0.3	225638	07/30/15
cis-1,3-Dichloropropene	0.8 U	1.0	0.2	225638	07/30/15
Toluene	0.4 U	1.0	0.2	225638	07/30/15
trans-1,3-Dichloropropene	0.8 U	1.0	0.2	225638	07/30/15
1,1,2-Trichloroethane	0.8 U	1.0	0.2	225638	07/30/15
2-Hexanone	0.8 U	20	0.3	225638	07/30/15
1,3-Dichloropropane	0.4 U	1.0	0.2	225638	07/30/15
Tetrachloroethene	0.4 U	1.0	0.2	225638	07/30/15
Dibromochloromethane	0.4 U	1.0	0.2	225638	07/30/15
1,2-Dibromoethane	0.4 U	1.0	0.3	225638	07/30/15
Chlorobenzene	0.4 U	1.0	0.2	225638	07/30/15
1,1,1,2-Tetrachloroethane	0.4 U	1.0	0.2	225638	07/30/15
Ethylbenzene	0.4 U	1.0	0.2	225638	07/30/15
m,p-Xylenes	0.4 U	1.0	0.3	225638	07/30/15
o-Xylene	0.4 U	1.0	0.2	225638	07/30/15
Styrene	0.8 U	1.0	0.3	225638	07/30/15
Bromoform	0.8 U	2.0	0.2	225638	07/30/15
Isopropylbenzene	0.4 U	1.0	0.2	225638	07/30/15
1,1,2,2-Tetrachloroethane	0.8 U	1.0	0.2	225638	07/30/15
1,2,3-Trichloropropane	0.4 U	1.0	0.2	225638	07/30/15
Propylbenzene	0.4 U	1.0	0.2	225638	07/30/15
Bromobenzene	0.4 U	1.0	0.2	225638	07/30/15
1,3,5-Trimethylbenzene	0.4 U	1.0	0.2	225638	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W01R-072915	Diln Fac:	2.000
Lab ID:	268556-007	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.4 U	1.0	0.2	225638	07/30/15
4-Chlorotoluene	0.4 U	1.0	0.2	225638	07/30/15
tert-Butylbenzene	0.4 U	1.0	0.2	225638	07/30/15
1,2,4-Trimethylbenzene	0.4 U	1.0	0.2	225638	07/30/15
sec-Butylbenzene	0.4 U	1.0	0.2	225638	07/30/15
para-Isopropyl Toluene	0.4 U	1.0	0.2	225638	07/30/15
1,3-Dichlorobenzene	1.6	1.0	0.2	225638	07/30/15
1,4-Dichlorobenzene	6.0	1.0	0.2	225638	07/30/15
n-Butylbenzene	0.4 U	1.0	0.2	225638	07/30/15
1,2-Dichlorobenzene	0.4 J	1.0	0.2	225638	07/30/15
1,2-Dibromo-3-Chloropropane	2.0 U	4.0	0.5	225681	07/31/15
1,2,4-Trichlorobenzene	0.9 U	1.0	0.2	225638	07/30/15
Hexachlorobutadiene	0.8 U	4.0	0.5	225638	07/30/15
Naphthalene	0.8 U	4.0	0.2	225681	07/31/15
1,2,3-Trichlorobenzene	0.9 U	1.0	0.2	225638	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	102	85-115	225638	07/30/15
Dibromofluoromethane	114	85-115	225681	07/31/15
1,2-Dichloroethane-d4	94	70-120	225638	07/30/15
1,2-Dichloroethane-d4	139 *	70-120	225681	07/31/15
Toluene-d8	102	85-120	225638	07/30/15
Toluene-d8	99	85-120	225681	07/31/15
Bromofluorobenzene	107	75-120	225638	07/30/15
Bromofluorobenzene	104	75-120	225681	07/31/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	ER-072915	Diln Fac:	1.000
Lab ID:	268556-008	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.2 U	1.0	0.1	225639	07/30/15
Chloromethane	0.4 U	1.0	0.3	225639	07/30/15
Vinyl Chloride	0.2 U	0.5	0.1	225639	07/30/15
Bromomethane	0.4 U	1.0	0.2	225639	07/30/15
Chloroethane	0.4 U	1.0	0.3	225639	07/30/15
Trichlorofluoromethane	0.4 U	1.0	0.2	225639	07/30/15
Acetone	4.0 U	10	3.3	225639	07/30/15
Freon 113	0.5 U	2.0	0.2	225691	07/31/15
1,1-Dichloroethene	0.2 U	0.5	0.2	225639	07/30/15
Methylene Chloride	0.2 U	10	0.2	225639	07/30/15
Carbon Disulfide	0.4 U	0.5	0.1	225691	07/31/15
MTBE	0.2 U	0.5	0.1	225639	07/30/15
trans-1,2-Dichloroethene	0.2 U	0.5	0.2	225639	07/30/15
Vinyl Acetate	2.0 U	10	1.1	225639	07/30/15
1,1-Dichloroethane	0.2 U	0.5	0.2	225639	07/30/15
2-Butanone	2.0 U	10	0.5	225639	07/30/15
cis-1,2-Dichloroethene	0.2 U	0.5	0.1	225639	07/30/15
2,2-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Chloroform	0.2 U	0.5	0.1	225639	07/30/15
Bromochloromethane	0.2 U	0.5	0.1	225639	07/30/15
1,1,1-Trichloroethane	0.2 U	0.5	0.1	225639	07/30/15
1,1-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
Carbon Tetrachloride	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichloroethane	0.2 U	0.5	0.1	225639	07/30/15
Benzene	0.2 U	0.5	0.1	225639	07/30/15
Trichloroethene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Bromodichloromethane	0.2 U	0.5	0.1	225639	07/30/15
Dibromomethane	0.2 U	0.5	0.1	225639	07/30/15
4-Methyl-2-Pentanone	1.0 U	10	0.7	225639	07/30/15
cis-1,3-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
Toluene	0.2 U	0.5	0.1	225639	07/30/15
trans-1,3-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
1,1,2-Trichloroethane	0.2 U	0.5	0.2	225639	07/30/15
2-Hexanone	1.0 U	10	0.5	225639	07/30/15
1,3-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Tetrachloroethene	0.2 U	0.5	0.1	225639	07/30/15
Dibromochloromethane	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dibromoethane	0.2 U	0.5	0.1	225639	07/30/15
Chlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1	225639	07/30/15
Ethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
m,p-Xylenes	0.4 U	0.5	0.1	225639	07/30/15
o-Xylene	0.2 U	0.5	0.1	225639	07/30/15
Styrene	0.2 U	0.5	0.1	225639	07/30/15
Bromoform	0.4 U	1.0	0.1	225639	07/30/15
Isopropylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1	225639	07/30/15
1,2,3-Trichloropropane	0.2 U	0.5	0.2	225639	07/30/15
Propylbenzene	0.2 U	0.5	0.1	225639	07/30/15
Bromobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
2-Chlorotoluene	0.2 U	0.5	0.1	225639	07/30/15

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	ER-072915	Diln Fac:	1.000
Lab ID:	268556-008	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
4-Chlorotoluene	0.2 U	0.5	0.1	225639	07/30/15
tert-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
sec-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
para-Isopropyl Toluene	0.2 U	0.5	0.1	225639	07/30/15
1,3-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,4-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
n-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3	225639	07/30/15
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
Hexachlorobutadiene	0.4 U	2.0	0.1	225639	07/30/15
Naphthalene	0.4 U	2.0	0.1	225639	07/30/15
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	105	85-115	225639	07/30/15
Dibromofluoromethane	117 *	85-115	225691	07/31/15
1,2-Dichloroethane-d4	126 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	117	70-120	225691	07/31/15
Toluene-d8	106	85-120	225639	07/30/15
Toluene-d8	99	85-120	225691	07/31/15
Bromofluorobenzene	103	75-120	225639	07/30/15
Bromofluorobenzene	109	75-120	225691	07/31/15

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	TB-072815	Diln Fac:	1.000
Lab ID:	268556-009	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.2 U	1.0	0.1	225681	07/31/15
Chloromethane	0.4 U	1.0	0.1	225638	07/30/15
Vinyl Chloride	0.4 U	0.5	0.1	225638	07/30/15
Bromomethane	0.4 U	1.0	0.2	225681	07/31/15
Chloroethane	0.4 U	1.0	0.1	225638	07/30/15
Trichlorofluoromethane	0.2 U	1.0	0.1	225638	07/30/15
Acetone	5.0 U	10	3.3	225638	07/30/15
Freon 113	0.4 U	2.0	0.1	225638	07/30/15
1,1-Dichloroethene	0.4 U	0.5	0.1	225638	07/30/15
Methylene Chloride	0.4 U	10	0.1	225638	07/30/15
Carbon Disulfide	0.4 U	0.5	0.1	225638	07/30/15
MTBE	0.2 U	0.5	0.1	225638	07/30/15
trans-1,2-Dichloroethene	0.4 U	0.5	0.1	225638	07/30/15
Vinyl Acetate	1.0 U	10	0.3	225638	07/30/15
1,1-Dichloroethane	0.2 U	0.5	0.1	225638	07/30/15
2-Butanone	1.0 U	10	0.3	225638	07/30/15
cis-1,2-Dichloroethene	0.4 U	0.5	0.1	225638	07/30/15
2,2-Dichloropropane	0.2 U	0.5	0.1	225681	07/31/15
Chloroform	0.2 U	0.5	0.1	225638	07/30/15
Bromochloromethane	0.4 U	0.5	0.2	225638	07/30/15
1,1,1-Trichloroethane	0.4 U	0.5	0.1	225638	07/30/15
1,1-Dichloropropene	0.2 U	0.5	0.1	225638	07/30/15
Carbon Tetrachloride	0.4 U	0.5	0.1	225638	07/30/15
1,2-Dichloroethane	0.4 U	0.5	0.1	225638	07/30/15
Benzene	0.2 U	0.5	0.1	225638	07/30/15
Trichloroethene	0.2 U	0.5	0.1	225638	07/30/15
1,2-Dichloropropane	0.2 U	0.5	0.1	225638	07/30/15
Bromodichloromethane	0.2 U	0.5	0.1	225638	07/30/15
Dibromomethane	0.2 U	0.5	0.1	225638	07/30/15
4-Methyl-2-Pentanone	0.4 U	10	0.2	225638	07/30/15
cis-1,3-Dichloropropene	0.4 U	0.5	0.1	225638	07/30/15
Toluene	0.2 U	0.5	0.1	225638	07/30/15
trans-1,3-Dichloropropene	0.4 U	0.5	0.1	225638	07/30/15
1,1,2-Trichloroethane	0.4 U	0.5	0.1	225638	07/30/15
2-Hexanone	0.4 U	10	0.2	225638	07/30/15
1,3-Dichloropropane	0.2 U	0.5	0.1	225638	07/30/15
Tetrachloroethene	0.2 U	0.5	0.1	225638	07/30/15
Dibromochloromethane	0.2 U	0.5	0.1	225638	07/30/15
1,2-Dibromoethane	0.2 U	0.5	0.1	225638	07/30/15
Chlorobenzene	0.2 U	0.5	0.1	225638	07/30/15
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1	225638	07/30/15
Ethylbenzene	0.2 U	0.5	0.1	225638	07/30/15
m,p-Xylenes	0.2 U	0.5	0.1	225638	07/30/15
o-Xylene	0.2 U	0.5	0.1	225638	07/30/15
Styrene	0.4 U	0.5	0.2	225638	07/30/15
Bromoform	0.4 U	1.0	0.1	225638	07/30/15
Isopropylbenzene	0.2 U	0.5	0.1	225638	07/30/15
1,1,2,2-Tetrachloroethane	0.4 U	0.5	0.1	225638	07/30/15
1,2,3-Trichloropropane	0.2 U	0.5	0.1	225638	07/30/15
Propylbenzene	0.2 U	0.5	0.1	225638	07/30/15
Bromobenzene	0.2 U	0.5	0.1	225638	07/30/15
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1	225638	07/30/15
2-Chlorotoluene	0.2 U	0.5	0.1	225638	07/30/15

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	TB-072815	Diln Fac:	1.000
Lab ID:	268556-009	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
4-Chlorotoluene	0.2 U	0.5	0.1	225638	07/30/15
tert-Butylbenzene	0.2 U	0.5	0.1	225638	07/30/15
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1	225638	07/30/15
sec-Butylbenzene	0.2 U	0.5	0.1	225638	07/30/15
para-Isopropyl Toluene	0.2 U	0.5	0.1	225638	07/30/15
1,3-Dichlorobenzene	0.4 U	0.5	0.1	225638	07/30/15
1,4-Dichlorobenzene	0.4 U	0.5	0.1	225638	07/30/15
n-Butylbenzene	0.2 U	0.5	0.1	225638	07/30/15
1,2-Dichlorobenzene	0.4 U	0.5	0.1	225638	07/30/15
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3	225681	07/31/15
1,2,4-Trichlorobenzene	0.5 U	0.5	0.1	225638	07/30/15
Hexachlorobutadiene	0.4 U	2.0	0.2	225638	07/30/15
Naphthalene	0.4 U	2.0	0.1	225681	07/31/15
1,2,3-Trichlorobenzene	0.5 U	0.5	0.1	225638	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	101	85-115	225638	07/30/15
Dibromofluoromethane	109	85-115	225681	07/31/15
1,2-Dichloroethane-d4	93	70-120	225638	07/30/15
1,2-Dichloroethane-d4	129 *	70-120	225681	07/31/15
Toluene-d8	139 *	85-120	225638	07/30/15
Toluene-d8	104	85-120	225681	07/31/15
Bromofluorobenzene	109	75-120	225638	07/30/15
Bromofluorobenzene	103	75-120	225681	07/31/15

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	SB-072915	Diln Fac:	1.000
Lab ID:	268556-010	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	0.2 U	1.0	0.1	225639	07/30/15
Chloromethane	0.4 U	1.0	0.3	225639	07/30/15
Vinyl Chloride	0.2 U	0.5	0.1	225639	07/30/15
Bromomethane	0.4 U	1.0	0.2	225639	07/30/15
Chloroethane	0.4 U	1.0	0.3	225639	07/30/15
Trichlorofluoromethane	0.4 U	1.0	0.2	225639	07/30/15
Acetone	4.0 U	10	3.3	225639	07/30/15
Freon 113	0.5 U	2.0	0.2	225691	07/31/15
1,1-Dichloroethene	0.2 U	0.5	0.2	225639	07/30/15
Methylene Chloride	0.2 U	10	0.2	225639	07/30/15
Carbon Disulfide	0.4 U	0.5	0.1	225691	07/31/15
MTBE	0.2 U	0.5	0.1	225639	07/30/15
trans-1,2-Dichloroethene	0.2 U	0.5	0.2	225639	07/30/15
Vinyl Acetate	2.0 U	10	1.1	225639	07/30/15
1,1-Dichloroethane	0.2 U	0.5	0.2	225639	07/30/15
2-Butanone	2.4 J	10	0.5	225639	07/30/15
cis-1,2-Dichloroethene	0.2 U	0.5	0.1	225639	07/30/15
2,2-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Chloroform	0.2 U	0.5	0.1	225639	07/30/15
Bromochloromethane	0.2 U	0.5	0.1	225639	07/30/15
1,1,1-Trichloroethane	0.2 U	0.5	0.1	225639	07/30/15
1,1-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
Carbon Tetrachloride	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichloroethane	0.2 U	0.5	0.1	225639	07/30/15
Benzene	0.2 U	0.5	0.1	225639	07/30/15
Trichloroethene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Bromodichloromethane	0.2 U	0.5	0.1	225639	07/30/15
Dibromomethane	0.2 U	0.5	0.1	225639	07/30/15
4-Methyl-2-Pentanone	1.0 U	10	0.7	225639	07/30/15
cis-1,3-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
Toluene	0.2 J	0.5	0.1	225639	07/30/15
trans-1,3-Dichloropropene	0.2 U	0.5	0.1	225639	07/30/15
1,1,2-Trichloroethane	0.2 U	0.5	0.2	225639	07/30/15
2-Hexanone	1.0 U	10	0.5	225639	07/30/15
1,3-Dichloropropane	0.2 U	0.5	0.1	225639	07/30/15
Tetrachloroethene	0.2 U	0.5	0.1	225639	07/30/15
Dibromochloromethane	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dibromoethane	0.2 U	0.5	0.1	225639	07/30/15
Chlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1	225639	07/30/15
Ethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
m,p-Xylenes	0.1 J	0.5	0.1	225639	07/30/15
o-Xylene	0.2 U	0.5	0.1	225639	07/30/15
Styrene	0.2 U	0.5	0.1	225639	07/30/15
Bromoform	0.4 U	1.0	0.1	225639	07/30/15
Isopropylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1	225639	07/30/15
1,2,3-Trichloropropane	0.2 U	0.5	0.2	225639	07/30/15
Propylbenzene	0.2 U	0.5	0.1	225639	07/30/15
Bromobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1	225639	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	SB-072915	Diln Fac:	1.000
Lab ID:	268556-010	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	0.2 U	0.5	0.1	225639	07/30/15
4-Chlorotoluene	0.2 U	0.5	0.1	225639	07/30/15
tert-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1	225639	07/30/15
sec-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
para-Isopropyl Toluene	0.2 U	0.5	0.1	225639	07/30/15
1,3-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,4-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
n-Butylbenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3	225639	07/30/15
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15
Hexachlorobutadiene	0.4 U	2.0	0.1	225639	07/30/15
Naphthalene	0.4 U	2.0	0.1	225639	07/30/15
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	105	85-115	225639	07/30/15
Dibromofluoromethane	117 *	85-115	225691	07/31/15
1,2-Dichloroethane-d4	127 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	117	70-120	225691	07/31/15
Toluene-d8	98	85-120	225639	07/30/15
Toluene-d8	101	85-120	225691	07/31/15
Bromofluorobenzene	99	75-120	225639	07/30/15
Bromofluorobenzene	109	75-120	225691	07/31/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225638
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797676

Analyte	Spiked	Result	%REC	Limits
Freon 12	20.00	15.28 b	76	30-155
Chloromethane	20.00	16.12	81	40-125
Vinyl Chloride	20.00	19.93	100	50-145
Bromomethane	20.00	22.98 b	115	30-145
Chloroethane	20.00	19.04	95	60-135
Trichlorofluoromethane	20.00	19.48	97	60-145
Acetone	25.00	22.90	92	40-140
Freon 113	25.00	22.32	89	61-138
1,1-Dichloroethene	25.00	21.89	88	70-130
Methylene Chloride	25.00	23.22	93	55-140
Carbon Disulfide	25.00	21.18	85	35-160
MTBE	25.00	21.78	87	65-125
trans-1,2-Dichloroethene	25.00	23.98	96	60-140
Vinyl Acetate	25.00	31.59 b	126	60-194
1,1-Dichloroethane	25.00	22.86	91	70-135
2-Butanone	25.00	23.26	93	30-150
cis-1,2-Dichloroethene	25.00	24.39	98	70-125
2,2-Dichloropropane		NA		
Chloroform	25.00	24.27	97	65-135
Bromochloromethane	25.00	24.86	99	65-130
1,1,1-Trichloroethane	25.00	25.15	101	65-130
1,1-Dichloropropene	25.00	23.26	93	75-130
Carbon Tetrachloride	25.00	24.79	99	65-140
1,2-Dichloroethane	25.00	22.75	91	70-130
Benzene	25.00	24.44	98	80-120
Trichloroethene	25.00	23.72	95	70-125
1,2-Dichloropropane	25.00	22.23	89	75-125
Bromodichloromethane	25.00	23.02	92	75-120
Dibromomethane	25.00	22.53	90	75-125
4-Methyl-2-Pentanone	25.00	20.83	83	60-135
cis-1,3-Dichloropropene	25.00	23.72	95	70-130
Toluene	25.00	25.71	103	75-120
trans-1,3-Dichloropropene	25.00	23.78	95	55-140
1,1,2-Trichloroethane	25.00	23.31	93	75-125
2-Hexanone	25.00	22.28	89	55-130
1,3-Dichloropropane	25.00	24.03	96	75-125
Tetrachloroethene	25.00	26.36	105	45-150
Dibromochloromethane	25.00	23.91	96	60-135
1,2-Dibromoethane	25.00	23.08	92	80-120
Chlorobenzene	25.00	25.85	103	80-120
1,1,1,2-Tetrachloroethane	25.00	24.40	98	80-130
Ethylbenzene	25.00	25.70	103	75-125
m,p-Xylenes	50.00	53.62	107	75-130
o-Xylene	25.00	25.41	102	80-120
Styrene	25.00	25.09	100	65-135
Bromoform	25.00	24.82	99	70-130
Isopropylbenzene	25.00	28.14	113	75-125
1,1,2,2-Tetrachloroethane	25.00	24.34	97	65-130
1,2,3-Trichloropropane	25.00	23.74	95	75-125
Propylbenzene	25.00	28.45	114	70-130

b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225638
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Bromobenzene	25.00	26.80	107	75-125
1,3,5-Trimethylbenzene	25.00	28.88	116	75-130
2-Chlorotoluene	25.00	28.29	113	75-125
4-Chlorotoluene	25.00	28.25	113	75-130
tert-Butylbenzene	25.00	27.56	110	70-130
1,2,4-Trimethylbenzene	25.00	26.82	107	75-130
sec-Butylbenzene	25.00	29.14	117	70-125
para-Isopropyl Toluene	25.00	28.77	115	75-130
1,3-Dichlorobenzene	25.00	27.13	109	75-125
1,4-Dichlorobenzene	25.00	26.63	107	75-125
n-Butylbenzene	25.00	28.50	114	70-135
1,2-Dichlorobenzene	25.00	26.78	107	70-120
1,2-Dibromo-3-Chloropropane	25.00	20.36 b	81	50-130
1,2,4-Trichlorobenzene	25.00	23.59	94	65-135
Hexachlorobutadiene	25.00	28.48	114	50-140
Naphthalene	25.00	19.26 b	77	55-140
1,2,3-Trichlorobenzene	25.00	24.27	97	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	102	85-115
1,2-Dichloroethane-d4	97	70-120
Toluene-d8	100	85-120
Bromofluorobenzene	104	75-120

b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225638
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797677

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	20.00	15.26 b	76	30-155	0	30
Chloromethane	20.00	15.83	79	40-125	2	30
Vinyl Chloride	20.00	19.42	97	50-145	3	30
Bromomethane	20.00	21.38 b	107	30-145	7	30
Chloroethane	20.00	18.10	90	60-135	5	30
Trichlorofluoromethane	20.00	19.00	95	60-145	3	30
Acetone	25.00	22.60	90	40-140	1	30
Freon 113	25.00	21.81	87	61-138	2	30
1,1-Dichloroethene	25.00	21.51	86	70-130	2	30
Methylene Chloride	25.00	23.14	93	55-140	0	30
Carbon Disulfide	25.00	20.22	81	35-160	5	30
MTBE	25.00	22.28	89	65-125	2	30
trans-1,2-Dichloroethene	25.00	23.48	94	60-140	2	30
Vinyl Acetate	25.00	31.89 b	128	60-194	1	30
1,1-Dichloroethane	25.00	22.82	91	70-135	0	30
2-Butanone	25.00	22.70	91	30-150	2	30
cis-1,2-Dichloroethene	25.00	24.24	97	70-125	1	30
2,2-Dichloropropane		NA				
Chloroform	25.00	23.94	96	65-135	1	30
Bromochloromethane	25.00	25.12	100	65-130	1	30
1,1,1-Trichloroethane	25.00	24.67	99	65-130	2	30
1,1-Dichloropropene	25.00	22.54	90	75-130	3	30
Carbon Tetrachloride	25.00	24.35	97	65-140	2	30
1,2-Dichloroethane	25.00	22.53	90	70-130	1	30
Benzene	25.00	24.01	96	80-120	2	30
Trichloroethene	25.00	22.97	92	70-125	3	30
1,2-Dichloropropane	25.00	22.13	89	75-125	0	30
Bromodichloromethane	25.00	22.87	91	75-120	1	30
Dibromomethane	25.00	22.69	91	75-125	1	30
4-Methyl-2-Pentanone	25.00	21.11	84	60-135	1	30
cis-1,3-Dichloropropene	25.00	23.34	93	70-130	2	30
Toluene	25.00	25.87	103	75-120	1	30
trans-1,3-Dichloropropene	25.00	24.38	98	55-140	3	30
1,1,2-Trichloroethane	25.00	23.82	95	75-125	2	30
2-Hexanone	25.00	22.74	91	55-130	2	30
1,3-Dichloropropane	25.00	24.44	98	75-125	2	30
Tetrachloroethene	25.00	26.24	105	45-150	0	30
Dibromochloromethane	25.00	24.59	98	60-135	3	30
1,2-Dibromoethane	25.00	23.40	94	80-120	1	30
Chlorobenzene	25.00	25.75	103	80-120	0	30
1,1,1,2-Tetrachloroethane	25.00	25.18	101	80-130	3	30
Ethylbenzene	25.00	25.99	104	75-125	1	30
m,p-Xylenes	50.00	53.58	107	75-130	0	30
o-Xylene	25.00	25.43	102	80-120	0	30
Styrene	25.00	24.79	99	65-135	1	30
Bromoform	25.00	25.31	101	70-130	2	30
Isopropylbenzene	25.00	27.84	111	75-125	1	30
1,1,2,2-Tetrachloroethane	25.00	24.53	98	65-130	1	30
1,2,3-Trichloropropane	25.00	24.00	96	75-125	1	30
Propylbenzene	25.00	27.85	111	70-130	2	30

b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225638
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Bromobenzene	25.00	26.87	107	75-125	0	30
1,3,5-Trimethylbenzene	25.00	28.65	115	75-130	1	30
2-Chlorotoluene	25.00	27.64	111	75-125	2	30
4-Chlorotoluene	25.00	27.66	111	75-130	2	30
tert-Butylbenzene	25.00	27.01	108	70-130	2	30
1,2,4-Trimethylbenzene	25.00	25.97	104	75-130	3	30
sec-Butylbenzene	25.00	28.40	114	70-125	3	30
para-Isopropyl Toluene	25.00	27.73	111	75-130	4	30
1,3-Dichlorobenzene	25.00	27.18	109	75-125	0	30
1,4-Dichlorobenzene	25.00	26.64	107	75-125	0	30
n-Butylbenzene	25.00	27.28	109	70-135	4	30
1,2-Dichlorobenzene	25.00	26.99	108	70-120	1	30
1,2-Dibromo-3-Chloropropane	25.00	21.08 b	84	50-130	3	30
1,2,4-Trichlorobenzene	25.00	23.74	95	65-135	1	30
Hexachlorobutadiene	25.00	27.55	110	50-140	3	30
Naphthalene	25.00	18.96 b	76	55-140	2	30
1,2,3-Trichlorobenzene	25.00	24.62	98	55-140	1	30

Surrogate	%REC	Limits
Dibromofluoromethane	101	85-115
1,2-Dichloroethane-d4	97	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	105	75-120

b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797678	Batch#:	225638
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.4 U b	1.0	0.1
Chloromethane	0.4 U	1.0	0.1
Vinyl Chloride	0.4 U	0.5	0.1
Bromomethane	0.4 U b	1.0	0.2
Chloroethane	0.4 U	1.0	0.1
Trichlorofluoromethane	0.2 U	1.0	0.1
Acetone	5.0 U	10	3.3
Freon 113	0.4 U	2.0	0.1
1,1-Dichloroethene	0.4 U	0.5	0.1
Methylene Chloride	0.4 U	10	0.1
Carbon Disulfide	0.4 U	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.4 U	0.5	0.1
Vinyl Acetate	1.0 U	10	0.3
1,1-Dichloroethane	0.2 U	0.5	0.1
2-Butanone	1.0 U	10	0.3
cis-1,2-Dichloroethene	0.4 U	0.5	0.1
2,2-Dichloropropane	NA		
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.4 U	0.5	0.2
1,1,1-Trichloroethane	0.4 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.4 U	0.5	0.1
1,2-Dichloroethane	0.4 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	0.4 U	10	0.2
cis-1,3-Dichloropropene	0.4 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.4 U	0.5	0.1
1,1,2-Trichloroethane	0.4 U	0.5	0.1
2-Hexanone	0.4 U	10	0.2
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.2 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.4 U	0.5	0.2
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.4 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.1
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
NA= Not Analyzed
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797678	Batch#:	225638
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.4 U	0.5	0.1
1,4-Dichlorobenzene	0.4 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.4 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.8 U b	2.0	0.5
1,2,4-Trichlorobenzene	0.5 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.2
Naphthalene	1.0 U b	2.0	0.3
1,2,3-Trichlorobenzene	0.5 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	102	85-115
1,2-Dichloroethane-d4	94	70-120
Toluene-d8	104	85-120
Bromofluorobenzene	109	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
NA= Not Analyzed
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797679

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	10.71 b	107	30-155
Chloromethane	10.00	12.92	129 *	40-125
Vinyl Chloride	10.00	11.89	119	50-145
Bromomethane	10.00	11.97	120	30-145
Chloroethane	10.00	10.81	108	60-135
Trichlorofluoromethane	10.00	9.518	95	60-145
Acetone	12.50	9.862	79	40-140
Freon 113	12.50	10.63 b	85	61-138
1,1-Dichloroethene	12.50	11.72	94	70-130
Methylene Chloride	12.50	13.02	104	55-140
Carbon Disulfide	12.50	11.54 b	92	35-160
MTBE	12.50	12.21	98	65-125
trans-1,2-Dichloroethene	12.50	12.90	103	60-140
Vinyl Acetate	12.50	19.13 b	153	60-194
1,1-Dichloroethane	12.50	13.18	105	70-135
2-Butanone	12.50	11.47	92	30-150
cis-1,2-Dichloroethene	12.50	12.94	104	70-125
2,2-Dichloropropane	12.50	15.15	121	70-135
Chloroform	12.50	13.73	110	65-135
Bromochloromethane	12.50	12.52	100	65-130
1,1,1-Trichloroethane	12.50	13.47	108	65-130
1,1-Dichloropropene	12.50	12.78	102	75-130
Carbon Tetrachloride	12.50	13.61	109	65-140
1,2-Dichloroethane	12.50	13.39	107	70-130
Benzene	12.50	13.14	105	80-120
Trichloroethene	12.50	12.66	101	70-125
1,2-Dichloropropane	12.50	12.04	96	75-125
Bromodichloromethane	12.50	12.97	104	75-120
Dibromomethane	12.50	12.15	97	75-125
4-Methyl-2-Pentanone	12.50	11.44	92	60-135
cis-1,3-Dichloropropene	12.50	12.33	99	70-130
Toluene	12.50	13.17	105	75-120
trans-1,3-Dichloropropene	12.50	11.99	96	55-140
1,1,2-Trichloroethane	12.50	12.56	101	75-125
2-Hexanone	12.50	11.91	95	55-130
1,3-Dichloropropane	12.50	12.82	103	75-125
Tetrachloroethene	12.50	13.80	110	45-150
Dibromochloromethane	12.50	12.28	98	60-135
1,2-Dibromoethane	12.50	12.47	100	80-120
Chlorobenzene	12.50	13.26	106	80-120
1,1,1,2-Tetrachloroethane	12.50	12.97	104	80-130
Ethylbenzene	12.50	14.01	112	75-125
m,p-Xylenes	25.00	26.00	104	75-130
o-Xylene	12.50	13.26	106	80-120
Styrene	12.50	12.87	103	65-135
Bromoform	12.50	11.34	91	70-130
Isopropylbenzene	12.50	12.87	103	75-125
1,1,2,2-Tetrachloroethane	12.50	11.93	95	65-130
1,2,3-Trichloropropane	12.50	11.83	95	75-125
Propylbenzene	12.50	13.04	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Bromobenzene	12.50	12.93	103	75-125
1,3,5-Trimethylbenzene	12.50	14.33	115	75-130
2-Chlorotoluene	12.50	14.05	112	75-125
4-Chlorotoluene	12.50	14.25	114	75-130
tert-Butylbenzene	12.50	13.11	105	70-130
1,2,4-Trimethylbenzene	12.50	13.41	107	75-130
sec-Butylbenzene	12.50	12.84	103	70-125
para-Isopropyl Toluene	12.50	13.38	107	75-130
1,3-Dichlorobenzene	12.50	12.74	102	75-125
1,4-Dichlorobenzene	12.50	12.91	103	75-125
n-Butylbenzene	12.50	13.79	110	70-135
1,2-Dichlorobenzene	12.50	13.12	105	70-120
1,2-Dibromo-3-Chloropropane	12.50	10.87	87	50-130
1,2,4-Trichlorobenzene	12.50	12.06	96	65-135
Hexachlorobutadiene	12.50	12.52	100	50-140
Naphthalene	12.50	10.14	81	55-140
1,2,3-Trichlorobenzene	12.50	12.01	96	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	102	85-115
1,2-Dichloroethane-d4	110	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	102	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797680

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	9.888 b	99	30-155	8	30
Chloromethane	10.00	11.87	119	40-125	9	30
Vinyl Chloride	10.00	11.63	116	50-145	2	30
Bromomethane	10.00	11.08	111	30-145	8	30
Chloroethane	10.00	9.696	97	60-135	11	30
Trichlorofluoromethane	10.00	8.988	90	60-145	6	30
Acetone	12.50	9.657	77	40-140	2	30
Freon 113	12.50	10.24 b	82	61-138	4	30
1,1-Dichloroethene	12.50	11.24	90	70-130	4	30
Methylene Chloride	12.50	12.57	101	55-140	3	30
Carbon Disulfide	12.50	11.06 b	88	35-160	4	30
MTBE	12.50	11.95	96	65-125	2	30
trans-1,2-Dichloroethene	12.50	12.18	97	60-140	6	30
Vinyl Acetate	12.50	19.45 b	156	60-194	2	30
1,1-Dichloroethane	12.50	12.43	99	70-135	6	30
2-Butanone	12.50	11.46	92	30-150	0	30
cis-1,2-Dichloroethene	12.50	12.60	101	70-125	3	30
2,2-Dichloropropane	12.50	13.91	111	70-135	8	30
Chloroform	12.50	13.28	106	65-135	3	30
Bromochloromethane	12.50	12.35	99	65-130	1	30
1,1,1-Trichloroethane	12.50	12.84	103	65-130	5	30
1,1-Dichloropropene	12.50	12.49	100	75-130	2	30
Carbon Tetrachloride	12.50	13.30	106	65-140	2	30
1,2-Dichloroethane	12.50	12.95	104	70-130	3	30
Benzene	12.50	12.58	101	80-120	4	30
Trichloroethene	12.50	12.34	99	70-125	3	30
1,2-Dichloropropane	12.50	11.95	96	75-125	1	30
Bromodichloromethane	12.50	12.37	99	75-120	5	30
Dibromomethane	12.50	12.09	97	75-125	1	30
4-Methyl-2-Pentanone	12.50	11.38	91	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.36	99	70-130	0	30
Toluene	12.50	12.70	102	75-120	4	30
trans-1,3-Dichloropropene	12.50	12.14	97	55-140	1	30
1,1,2-Trichloroethane	12.50	12.71	102	75-125	1	30
2-Hexanone	12.50	11.66	93	55-130	2	30
1,3-Dichloropropane	12.50	12.08	97	75-125	6	30
Tetrachloroethene	12.50	13.07	105	45-150	5	30
Dibromochloromethane	12.50	11.61	93	60-135	6	30
1,2-Dibromoethane	12.50	12.36	99	80-120	1	30
Chlorobenzene	12.50	13.01	104	80-120	2	30
1,1,1,2-Tetrachloroethane	12.50	12.41	99	80-130	4	30
Ethylbenzene	12.50	13.00	104	75-125	7	30
m,p-Xylenes	25.00	25.91	104	75-130	0	30
o-Xylene	12.50	13.31	106	80-120	0	30
Styrene	12.50	13.38	107	65-135	4	30
Bromoform	12.50	11.34	91	70-130	0	30
Isopropylbenzene	12.50	13.27	106	75-125	3	30
1,1,2,2-Tetrachloroethane	12.50	12.56	100	65-130	5	30
1,2,3-Trichloropropane	12.50	12.00	96	75-125	1	30
Propylbenzene	12.50	13.52	108	70-130	4	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Bromobenzene	12.50	13.30	106	75-125	3	30
1,3,5-Trimethylbenzene	12.50	13.87	111	75-130	3	30
2-Chlorotoluene	12.50	13.25	106	75-125	6	30
4-Chlorotoluene	12.50	13.87	111	75-130	3	30
tert-Butylbenzene	12.50	12.99	104	70-130	1	30
1,2,4-Trimethylbenzene	12.50	13.41	107	75-130	0	30
sec-Butylbenzene	12.50	13.09	105	70-125	2	30
para-Isopropyl Toluene	12.50	12.98	104	75-130	3	30
1,3-Dichlorobenzene	12.50	13.17	105	75-125	3	30
1,4-Dichlorobenzene	12.50	13.41	107	75-125	4	30
n-Butylbenzene	12.50	13.53	108	70-135	2	30
1,2-Dichlorobenzene	12.50	13.31	106	70-120	1	30
1,2-Dibromo-3-Chloropropane	12.50	10.99	88	50-130	1	30
1,2,4-Trichlorobenzene	12.50	11.94	95	65-135	1	30
Hexachlorobutadiene	12.50	12.46	100	50-140	0	30
Naphthalene	12.50	10.64	85	55-140	5	30
1,2,3-Trichlorobenzene	12.50	12.19	98	55-140	1	30

Surrogate	%REC	Limits
Dibromofluoromethane	103	85-115
1,2-Dichloroethane-d4	108	70-120
Toluene-d8	100	85-120
Bromofluorobenzene	96	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797681	Batch#:	225639
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.2 U b	1.0	0.1
Chloromethane	0.4 U	1.0	0.3
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.4 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.3
Trichlorofluoromethane	0.4 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.2 U b	2.0	0.1
1,1-Dichloroethene	0.2 U	0.5	0.2
Methylene Chloride	0.2 U	10	0.2
Carbon Disulfide	0.2 U b	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.2
Vinyl Acetate	2.0 U b	10	1.1
1,1-Dichloroethane	0.2 U	0.5	0.2
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.2 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.2 U	0.5	0.1
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.2 U	0.5	0.1
1,2-Dichloroethane	0.2 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	1.0 U	10	0.7
cis-1,3-Dichloropropene	0.2 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.2 U	0.5	0.1
1,1,2-Trichloroethane	0.2 U	0.5	0.2
2-Hexanone	1.0 U	10	0.5
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.4 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.2
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797681	Batch#:	225639
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.1
Naphthalene	0.4 U	2.0	0.1
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	104	85-115
1,2-Dichloroethane-d4	115	70-120
Toluene-d8	98	85-120
Bromofluorobenzene	101	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Type: MS Lab ID: QC797770

Analyte	MSS Result	Spiked	Result	%REC	Limits
Freon 12	<0.5000	50.00	54.69 b	109	30-155
Chloromethane	<1.362	50.00	47.57	95	40-125
Vinyl Chloride	<0.5000	50.00	54.17	108	50-145
Bromomethane	<0.9149	50.00	21.52	43	30-145
Chloroethane	<1.337	50.00	50.48	101	60-135
Trichlorofluoromethane	<1.140	50.00	49.30	99	60-145
Acetone	<16.50	62.50	49.24	79	40-140
Freon 113	<0.6550	62.50	48.76 b	78	61-138
1,1-Dichloroethene	<0.7594	62.50	53.99	86	70-130
Methylene Chloride	<0.8785	62.50	66.13	106	55-140
Carbon Disulfide	0.8440	62.50	57.76 b	91	35-160
MTBE	<0.5594	62.50	66.91	107	65-125
trans-1,2-Dichloroethene	<0.7549	62.50	64.45	103	60-140
Vinyl Acetate	<5.726	62.50	104.8 b	168	60-194
1,1-Dichloroethane	<0.7936	62.50	67.33	108	70-135
2-Butanone	<2.500	62.50	61.58	99	30-150
cis-1,2-Dichloroethene	<0.6275	62.50	65.94	105	70-125
2,2-Dichloropropane	<0.7200	62.50	72.61	116	70-135
Chloroform	<0.5000	62.50	75.54	121	65-135
Bromochloromethane	<0.6862	62.50	60.26	96	65-130
1,1,1-Trichloroethane	<0.6305	62.50	73.64	118	65-130
1,1-Dichloropropene	<0.6495	62.50	66.70	107	75-130
Carbon Tetrachloride	<0.6154	62.50	72.56	116	65-140
1,2-Dichloroethane	<0.5353	62.50	79.32	127	70-130
Benzene	<0.5000	62.50	68.73	110	80-120
Trichloroethene	<0.5000	62.50	65.90	105	70-125
1,2-Dichloropropane	<0.6857	62.50	66.60	107	75-125
Bromodichloromethane	<0.6061	62.50	71.67	115	75-120
Dibromomethane	<0.7321	62.50	68.94	110	75-125
4-Methyl-2-Pentanone	<3.269	62.50	67.18	107	60-135
cis-1,3-Dichloropropene	<0.5273	62.50	67.08	107	70-130
Toluene	<0.5000	62.50	63.98	102	75-120
trans-1,3-Dichloropropene	<0.6962	62.50	61.92	99	55-140
1,1,2-Trichloroethane	<0.7697	62.50	67.89	109	75-125
2-Hexanone	<2.500	62.50	63.10	101	55-130
1,3-Dichloropropane	<0.7442	62.50	67.27	108	75-125
Tetrachloroethene	<0.5000	62.50	64.06	103	45-150
Dibromochloromethane	<0.7303	62.50	64.08	103	60-135
1,2-Dibromoethane	<0.6707	62.50	64.93	104	80-120
Chlorobenzene	10.86	62.50	78.31	108	80-120
1,1,1,2-Tetrachloroethane	<0.5227	62.50	70.71	113	80-130
Ethylbenzene	<0.5000	62.50	70.87	113	75-125
m,p-Xylenes	<0.7268	125.0	132.4	106	75-130
o-Xylene	<0.5000	62.50	69.78	112	80-120
Styrene	<0.5000	62.50	64.35	103	65-135
Bromoform	<0.7223	62.50	55.97	90	70-130
Isopropylbenzene	<0.5000	62.50	59.90	96	75-125
1,1,2,2-Tetrachloroethane	<0.5983	62.50	62.92	101	65-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,2,3-Trichloropropane	<0.7701	62.50	61.81	99	75-125
Propylbenzene	<0.5000	62.50	63.88	102	70-130
Bromobenzene	<0.5398	62.50	64.36	103	75-125
1,3,5-Trimethylbenzene	<0.5000	62.50	67.97	109	75-130
2-Chlorotoluene	<0.5000	62.50	67.92	109	75-125
4-Chlorotoluene	<0.5000	62.50	68.82	110	75-130
tert-Butylbenzene	<0.5000	62.50	60.94	98	70-130
1,2,4-Trimethylbenzene	<0.5000	62.50	65.61	105	75-130
sec-Butylbenzene	<0.5000	62.50	59.74	96	70-125
para-Isopropyl Toluene	<0.5000	62.50	59.91	96	75-130
1,3-Dichlorobenzene	1.458	62.50	65.58	103	75-125
1,4-Dichlorobenzene	7.140	62.50	69.92	100	75-125
n-Butylbenzene	<0.5000	62.50	62.89	101	70-135
1,2-Dichlorobenzene	0.6685	62.50	65.90	104	70-120
1,2-Dibromo-3-Chloropropane	<1.250	62.50	59.72	96	50-130
1,2,4-Trichlorobenzene	<0.6627	62.50	59.95	96	65-135
Hexachlorobutadiene	<0.6969	62.50	55.80	89	50-140
Naphthalene	<0.5322	62.50	53.24	85	55-140
1,2,3-Trichlorobenzene	<0.6978	62.50	63.19	101	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	110	85-115
1,2-Dichloroethane-d4	127 *	70-120
Toluene-d8	104	85-120
Bromofluorobenzene	101	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Type: MSD Lab ID: QC797771

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	50.00	51.71 b	103	30-155	6	30
Chloromethane	50.00	46.00	92	40-125	3	30
Vinyl Chloride	50.00	51.30	103	50-145	5	30
Bromomethane	50.00	25.25	51	30-145	16	30
Chloroethane	50.00	49.84	100	60-135	1	30
Trichlorofluoromethane	50.00	46.49	93	60-145	6	30
Acetone	62.50	44.44	71	40-140	10	30
Freon 113	62.50	47.40 b	76	61-138	3	30
1,1-Dichloroethene	62.50	51.43	82	70-130	5	30
Methylene Chloride	62.50	65.15	104	55-140	1	30
Carbon Disulfide	62.50	53.65 b	84	35-160	7	30
MTBE	62.50	61.48	98	65-125	8	30
trans-1,2-Dichloroethene	62.50	57.53	92	60-140	11	30
Vinyl Acetate	62.50	106.9 b	171	60-194	2	30
1,1-Dichloroethane	62.50	66.51	106	70-135	1	30
2-Butanone	62.50	59.31	95	30-150	4	30
cis-1,2-Dichloroethene	62.50	65.15	104	70-125	1	30
2,2-Dichloropropane	62.50	69.49	111	70-135	4	30
Chloroform	62.50	68.03	109	65-135	10	30
Bromochloromethane	62.50	59.33	95	65-130	2	30
1,1,1-Trichloroethane	62.50	64.82	104	65-130	13	30
1,1-Dichloropropene	62.50	60.58	97	75-130	10	30
Carbon Tetrachloride	62.50	64.17	103	65-140	12	30
1,2-Dichloroethane	62.50	69.93	112	70-130	13	30
Benzene	62.50	59.72	96	80-120	14	30
Trichloroethene	62.50	57.86	93	70-125	13	30
1,2-Dichloropropane	62.50	56.85	91	75-125	16	30
Bromodichloromethane	62.50	63.20	101	75-120	13	30
Dibromomethane	62.50	60.86	97	75-125	12	30
4-Methyl-2-Pentanone	62.50	57.73	92	60-135	15	30
cis-1,3-Dichloropropene	62.50	57.67	92	70-130	15	30
Toluene	62.50	58.31	93	75-120	9	30
trans-1,3-Dichloropropene	62.50	56.27	90	55-140	10	30
1,1,2-Trichloroethane	62.50	55.09	88	75-125	21	30
2-Hexanone	62.50	54.59	87	55-130	14	30
1,3-Dichloropropane	62.50	60.51	97	75-125	11	30
Tetrachloroethene	62.50	55.56	89	45-150	14	30
Dibromochloromethane	62.50	55.99	90	60-135	13	30
1,2-Dibromoethane	62.50	60.01	96	80-120	8	30
Chlorobenzene	62.50	73.00	99	80-120	7	30
1,1,1,2-Tetrachloroethane	62.50	61.02	98	80-130	15	30
Ethylbenzene	62.50	61.86	99	75-125	14	30
m,p-Xylenes	125.0	120.2	96	75-130	10	30
o-Xylene	62.50	61.26	98	80-120	13	30
Styrene	62.50	57.00	91	65-135	12	30
Bromoform	62.50	50.57	81	70-130	10	30
Isopropylbenzene	62.50	55.74	89	75-125	7	30
1,1,2,2-Tetrachloroethane	62.50	58.92	94	65-130	7	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,2,3-Trichloropropane	62.50	59.47	95	75-125	4	30
Propylbenzene	62.50	59.58	95	70-130	7	30
Bromobenzene	62.50	59.44	95	75-125	8	30
1,3,5-Trimethylbenzene	62.50	61.27	98	75-130	10	30
2-Chlorotoluene	62.50	58.76	94	75-125	14	30
4-Chlorotoluene	62.50	64.81	104	75-130	6	30
tert-Butylbenzene	62.50	57.46	92	70-130	6	30
1,2,4-Trimethylbenzene	62.50	57.92	93	75-130	12	30
sec-Butylbenzene	62.50	55.57	89	70-125	7	30
para-Isopropyl Toluene	62.50	57.61	92	75-130	4	30
1,3-Dichlorobenzene	62.50	61.14	95	75-125	7	30
1,4-Dichlorobenzene	62.50	68.16	98	75-125	3	30
n-Butylbenzene	62.50	54.72	88	70-135	14	30
1,2-Dichlorobenzene	62.50	59.36	94	70-120	10	30
1,2-Dibromo-3-Chloropropane	62.50	54.62	87	50-130	9	30
1,2,4-Trichlorobenzene	62.50	54.82	88	65-135	9	30
Hexachlorobutadiene	62.50	53.74	86	50-140	4	30
Naphthalene	62.50	48.70	78	55-140	9	30
1,2,3-Trichlorobenzene	62.50	56.31	90	55-140	12	30

Surrogate	%REC	Limits
Dibromofluoromethane	108	85-115
1,2-Dichloroethane-d4	118	70-120
Toluene-d8	99	85-120
Bromofluorobenzene	99	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225681
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797837

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	14.91 b	149	30-155
Chloromethane	10.00	11.75	118	40-125
Vinyl Chloride	10.00	12.86	129	50-145
Bromomethane	10.00	12.57 b	126	30-145
Chloroethane	10.00	11.92	119	60-135
Trichlorofluoromethane	10.00	12.15	121	60-145
Acetone	12.50	8.689	70	40-140
Freon 113	12.50	10.70 b	86	61-138
1,1-Dichloroethene	12.50	11.67	93	70-130
Methylene Chloride	12.50	13.26	106	55-140
Carbon Disulfide	12.50	12.64 b	101	35-160
MTBE	12.50	12.52	100	65-125
trans-1,2-Dichloroethene	12.50	13.02	104	60-140
Vinyl Acetate	12.50	20.80 b	166	60-194
1,1-Dichloroethane	12.50	13.78	110	70-135
2-Butanone	12.50	11.42	91	30-150
cis-1,2-Dichloroethene	12.50	13.25	106	70-125
2,2-Dichloropropane	12.50	17.36	139 *	70-135
Chloroform	12.50	14.91	119	65-135
Bromochloromethane	12.50	12.60	101	65-130
1,1,1-Trichloroethane	12.50	14.54	116	65-130
1,1-Dichloropropene	12.50	13.58	109	75-130
Carbon Tetrachloride	12.50	14.23	114	65-140
1,2-Dichloroethane	12.50	14.37	115	70-130
Benzene	12.50	13.03	104	80-120
Trichloroethene	12.50	13.07	105	70-125
1,2-Dichloropropane	12.50	12.44	100	75-125
Bromodichloromethane	12.50	13.28	106	75-120
Dibromomethane	12.50	12.30	98	75-125
4-Methyl-2-Pentanone	12.50	11.36	91	60-135
cis-1,3-Dichloropropene	12.50	12.56	101	70-130
Toluene	12.50	13.36	107	75-120
trans-1,3-Dichloropropene	12.50	12.21	98	55-140
1,1,2-Trichloroethane	12.50	12.18	97	75-125
2-Hexanone	12.50	11.33	91	55-130
1,3-Dichloropropane	12.50	12.34	99	75-125
Tetrachloroethene	12.50	12.80	102	45-150
Dibromochloromethane	12.50	11.75	94	60-135
1,2-Dibromoethane	12.50	11.98	96	80-120
Chlorobenzene	12.50	13.61	109	80-120
1,1,1,2-Tetrachloroethane	12.50	13.09	105	80-130
Ethylbenzene	12.50	14.34	115	75-125
m,p-Xylenes	25.00	26.30	105	75-130
o-Xylene	12.50	12.89	103	80-120
Styrene	12.50	13.07	105	65-135
Bromoform	12.50	10.72	86	70-130
Isopropylbenzene	12.50	12.55	100	75-125
1,1,2,2-Tetrachloroethane	12.50	11.57	93	65-130
1,2,3-Trichloropropane	12.50	12.06	96	75-125
Propylbenzene	12.50	13.64	109	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225681
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Bromobenzene	12.50	12.85	103	75-125
1,3,5-Trimethylbenzene	12.50	14.47	116	75-130
2-Chlorotoluene	12.50	14.26	114	75-125
4-Chlorotoluene	12.50	14.30	114	75-130
tert-Butylbenzene	12.50	13.69	109	70-130
1,2,4-Trimethylbenzene	12.50	13.79	110	75-130
sec-Butylbenzene	12.50	13.42	107	70-125
para-Isopropyl Toluene	12.50	13.82	111	75-130
1,3-Dichlorobenzene	12.50	12.86	103	75-125
1,4-Dichlorobenzene	12.50	12.78	102	75-125
n-Butylbenzene	12.50	14.35	115	70-135
1,2-Dichlorobenzene	12.50	13.38	107	70-120
1,2-Dibromo-3-Chloropropane	12.50	11.46	92	50-130
1,2,4-Trichlorobenzene	12.50	12.30	98	65-135
Hexachlorobutadiene	12.50	12.69	102	50-140
Naphthalene	12.50	10.17	81	55-140
1,2,3-Trichlorobenzene	12.50	12.26	98	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	107	85-115
1,2-Dichloroethane-d4	118	70-120
Toluene-d8	101	85-120
Bromofluorobenzene	103	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225681
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797838

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	13.36 b	134	30-155	11	30
Chloromethane	10.00	11.11	111	40-125	6	30
Vinyl Chloride	10.00	11.72	117	50-145	9	30
Bromomethane	10.00	11.51 b	115	30-145	9	30
Chloroethane	10.00	10.83	108	60-135	10	30
Trichlorofluoromethane	10.00	11.06	111	60-145	9	30
Acetone	12.50	8.568	69	40-140	1	30
Freon 113	12.50	10.22 b	82	61-138	5	30
1,1-Dichloroethene	12.50	11.27	90	70-130	4	30
Methylene Chloride	12.50	12.06	96	55-140	9	30
Carbon Disulfide	12.50	10.74 b	86	35-160	16	30
MTBE	12.50	12.14	97	65-125	3	30
trans-1,2-Dichloroethene	12.50	11.83	95	60-140	10	30
Vinyl Acetate	12.50	19.72 b	158	60-194	5	30
1,1-Dichloroethane	12.50	12.73	102	70-135	8	30
2-Butanone	12.50	10.89	87	30-150	5	30
cis-1,2-Dichloroethene	12.50	11.66	93	70-125	13	30
2,2-Dichloropropane	12.50	15.29	122	70-135	13	30
Chloroform	12.50	12.97	104	65-135	14	30
Bromochloromethane	12.50	11.78	94	65-130	7	30
1,1,1-Trichloroethane	12.50	13.66	109	65-130	6	30
1,1-Dichloropropene	12.50	13.03	104	75-130	4	30
Carbon Tetrachloride	12.50	13.73	110	65-140	4	30
1,2-Dichloroethane	12.50	14.15	113	70-130	2	30
Benzene	12.50	12.65	101	80-120	3	30
Trichloroethene	12.50	12.80	102	70-125	2	30
1,2-Dichloropropane	12.50	12.19	97	75-125	2	30
Bromodichloromethane	12.50	12.56	100	75-120	6	30
Dibromomethane	12.50	12.50	100	75-125	2	30
4-Methyl-2-Pentanone	12.50	11.48	92	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.58	101	70-130	0	30
Toluene	12.50	12.52	100	75-120	6	30
trans-1,3-Dichloropropene	12.50	11.73	94	55-140	4	30
1,1,2-Trichloroethane	12.50	11.39	91	75-125	7	30
2-Hexanone	12.50	11.55	92	55-130	2	30
1,3-Dichloropropane	12.50	12.84	103	75-125	4	30
Tetrachloroethene	12.50	11.90	95	45-150	7	30
Dibromochloromethane	12.50	11.62	93	60-135	1	30
1,2-Dibromoethane	12.50	11.98	96	80-120	0	30
Chlorobenzene	12.50	12.72	102	80-120	7	30
1,1,1,2-Tetrachloroethane	12.50	12.17	97	80-130	7	30
Ethylbenzene	12.50	13.41	107	75-125	7	30
m,p-Xylenes	25.00	25.52	102	75-130	3	30
o-Xylene	12.50	13.15	105	80-120	2	30
Styrene	12.50	13.52	108	65-135	3	30
Bromoform	12.50	10.37	83	70-130	3	30
Isopropylbenzene	12.50	12.90	103	75-125	3	30
1,1,2,2-Tetrachloroethane	12.50	12.52	100	65-130	8	30
1,2,3-Trichloropropane	12.50	11.07	89	75-125	9	30
Propylbenzene	12.50	13.20	106	70-130	3	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225681
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Bromobenzene	12.50	13.04	104	75-125	2	30
1,3,5-Trimethylbenzene	12.50	13.24	106	75-130	9	30
2-Chlorotoluene	12.50	13.20	106	75-125	8	30
4-Chlorotoluene	12.50	14.18	113	75-130	1	30
tert-Butylbenzene	12.50	12.69	102	70-130	8	30
1,2,4-Trimethylbenzene	12.50	13.19	105	75-130	4	30
sec-Butylbenzene	12.50	13.25	106	70-125	1	30
para-Isopropyl Toluene	12.50	12.99	104	75-130	6	30
1,3-Dichlorobenzene	12.50	12.86	103	75-125	0	30
1,4-Dichlorobenzene	12.50	13.07	105	75-125	2	30
n-Butylbenzene	12.50	14.25	114	70-135	1	30
1,2-Dichlorobenzene	12.50	12.60	101	70-120	6	30
1,2-Dibromo-3-Chloropropane	12.50	10.86	87	50-130	5	30
1,2,4-Trichlorobenzene	12.50	12.24	98	65-135	0	30
Hexachlorobutadiene	12.50	13.52	108	50-140	6	30
Naphthalene	12.50	10.56	84	55-140	4	30
1,2,3-Trichlorobenzene	12.50	12.28	98	55-140	0	30

Surrogate	%REC	Limits
Dibromofluoromethane	106	85-115
1,2-Dichloroethane-d4	119	70-120
Toluene-d8	101	85-120
Bromofluorobenzene	102	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797839	Batch#:	225681
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.2 U b	1.0	0.1
Chloromethane	0.4 U	1.0	0.3
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.4 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.3
Trichlorofluoromethane	0.4 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.2 U b	2.0	0.1
1,1-Dichloroethene	0.2 U	0.5	0.2
Methylene Chloride	0.2 U	10	0.2
Carbon Disulfide	0.2 U b	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.2
Vinyl Acetate	2.0 U b	10	1.1
1,1-Dichloroethane	0.2 U	0.5	0.2
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.2 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.2 U	0.5	0.1
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.2 U	0.5	0.1
1,2-Dichloroethane	0.2 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	1.0 U	10	0.7
cis-1,3-Dichloropropene	0.2 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.2 U	0.5	0.1
1,1,2-Trichloroethane	0.2 U	0.5	0.2
2-Hexanone	1.0 U	10	0.5
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.4 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.2
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797839	Batch#:	225681
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.1
Naphthalene	0.4 U	2.0	0.1
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	104	85-115
1,2-Dichloroethane-d4	122 *	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	101	75-120

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797874

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	9.046 b	90	30-155
Chloromethane	10.00	9.269	93	40-125
Vinyl Chloride	10.00	10.76	108	50-145
Bromomethane	10.00	11.83	118	30-145
Chloroethane	10.00	10.47	105	60-135
Trichlorofluoromethane	10.00	10.55	106	60-145
Acetone	12.50	13.65	109	40-140
Freon 113	12.50	11.11	89	61-138
1,1-Dichloroethene	12.50	12.17	97	70-130
Methylene Chloride	12.50	13.41	107	55-140
Carbon Disulfide	12.50	11.43	91	35-160
MTBE	12.50	13.47	108	65-125
trans-1,2-Dichloroethene	12.50	12.98	104	60-140
Vinyl Acetate	12.50	17.16 b	137	60-194
1,1-Dichloroethane	12.50	13.58	109	70-135
2-Butanone	12.50	14.56	116	30-150
cis-1,2-Dichloroethene	12.50	13.40	107	70-125
2,2-Dichloropropane	12.50	15.23	122	70-135
Chloroform	12.50	13.92	111	65-135
Bromochloromethane	12.50	13.03	104	65-130
1,1,1-Trichloroethane	12.50	13.94	112	65-130
1,1-Dichloropropene	12.50	11.54	92	75-130
Carbon Tetrachloride	12.50	12.61	101	65-140
1,2-Dichloroethane	12.50	12.51	100	70-130
Benzene	12.50	12.71	102	80-120
Trichloroethene	12.50	11.74	94	70-125
1,2-Dichloropropane	12.50	11.67	93	75-125
Bromodichloromethane	12.50	12.15	97	75-120
Dibromomethane	12.50	12.21	98	75-125
4-Methyl-2-Pentanone	12.50	12.75	102	60-135
cis-1,3-Dichloropropene	12.50	12.19	97	70-130
Toluene	12.50	11.53	92	75-120
trans-1,3-Dichloropropene	12.50	10.27	82	55-140
1,1,2-Trichloroethane	12.50	11.38	91	75-125
2-Hexanone	12.50	11.77	94	55-130
1,3-Dichloropropane	12.50	11.46	92	75-125
Tetrachloroethene	12.50	9.646 b	77	45-150
Dibromochloromethane	12.50	10.54	84	60-135
1,2-Dibromoethane	12.50	10.66	85	80-120
Chlorobenzene	12.50	10.93	87	80-120
1,1,1,2-Tetrachloroethane	12.50	10.55	84	80-130
Ethylbenzene	12.50	10.73	86	75-125
m,p-Xylenes	25.00	21.68	87	75-130
o-Xylene	12.50	10.67	85	80-120
Styrene	12.50	11.67	93	65-135
Bromoform	12.50	11.29	90	70-130
Isopropylbenzene	12.50	10.75	86	75-125
1,1,2,2-Tetrachloroethane	12.50	11.93	95	65-130
1,2,3-Trichloropropane	12.50	11.52	92	75-125
Propylbenzene	12.50	10.84	87	70-130
Bromobenzene	12.50	11.13	89	75-125

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
1,3,5-Trimethylbenzene	12.50	10.97	88	75-130
2-Chlorotoluene	12.50	11.55	92	75-125
4-Chlorotoluene	12.50	10.96	88	75-130
tert-Butylbenzene	12.50	9.785 b	78	70-130
1,2,4-Trimethylbenzene	12.50	10.39	83	75-130
sec-Butylbenzene	12.50	10.03 b	80	70-125
para-Isopropyl Toluene	12.50	9.908 b	79	75-130
1,3-Dichlorobenzene	12.50	11.11	89	75-125
1,4-Dichlorobenzene	12.50	11.13	89	75-125
n-Butylbenzene	12.50	9.657 b	77	70-135
1,2-Dichlorobenzene	12.50	11.25	90	70-120
1,2-Dibromo-3-Chloropropane	12.50	11.45	92	50-130
1,2,4-Trichlorobenzene	12.50	9.643 b	77	65-135
Hexachlorobutadiene	12.50	8.759 b	70	50-140
Naphthalene	12.50	8.628 b	69	55-140
1,2,3-Trichlorobenzene	12.50	9.097 b	73	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	113	85-115
1,2-Dichloroethane-d4	114	70-120
Toluene-d8	97	85-120
Bromofluorobenzene	104	75-120

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797875

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	8.298 b	83	30-155	9	30
Chloromethane	10.00	8.984	90	40-125	3	30
Vinyl Chloride	10.00	9.917	99	50-145	8	30
Bromomethane	10.00	11.19	112	30-145	6	30
Chloroethane	10.00	9.645	96	60-135	8	30
Trichlorofluoromethane	10.00	9.453	95	60-145	11	30
Acetone	12.50	12.66	101	40-140	8	30
Freon 113	12.50	11.34	91	61-138	2	30
1,1-Dichloroethene	12.50	11.73	94	70-130	4	30
Methylene Chloride	12.50	13.06	104	55-140	3	30
Carbon Disulfide	12.50	11.28	90	35-160	1	30
MTBE	12.50	13.32	107	65-125	1	30
trans-1,2-Dichloroethene	12.50	12.55	100	60-140	3	30
Vinyl Acetate	12.50	16.58 b	133	60-194	3	30
1,1-Dichloroethane	12.50	13.58	109	70-135	0	30
2-Butanone	12.50	14.32	115	30-150	2	30
cis-1,2-Dichloroethene	12.50	13.38	107	70-125	0	30
2,2-Dichloropropane	12.50	14.71	118	70-135	3	30
Chloroform	12.50	13.87	111	65-135	0	30
Bromochloromethane	12.50	12.76	102	65-130	2	30
1,1,1-Trichloroethane	12.50	13.46	108	65-130	3	30
1,1-Dichloropropene	12.50	11.47	92	75-130	1	30
Carbon Tetrachloride	12.50	12.33	99	65-140	2	30
1,2-Dichloroethane	12.50	12.72	102	70-130	2	30
Benzene	12.50	12.64	101	80-120	1	30
Trichloroethene	12.50	11.93	95	70-125	2	30
1,2-Dichloropropane	12.50	11.68	93	75-125	0	30
Bromodichloromethane	12.50	11.94	96	75-120	2	30
Dibromomethane	12.50	11.94	96	75-125	2	30
4-Methyl-2-Pentanone	12.50	12.62	101	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.00	96	70-130	2	30
Toluene	12.50	11.92	95	75-120	3	30
trans-1,3-Dichloropropene	12.50	10.36	83	55-140	1	30
1,1,2-Trichloroethane	12.50	11.32	91	75-125	0	30
2-Hexanone	12.50	11.56	92	55-130	2	30
1,3-Dichloropropane	12.50	11.35	91	75-125	1	30
Tetrachloroethene	12.50	10.30 b	82	45-150	7	30
Dibromochloromethane	12.50	10.71	86	60-135	2	30
1,2-Dibromoethane	12.50	10.72	86	80-120	1	30
Chlorobenzene	12.50	11.31	90	80-120	3	30
1,1,1,2-Tetrachloroethane	12.50	10.96	88	80-130	4	30
Ethylbenzene	12.50	11.49	92	75-125	7	30
m,p-Xylenes	25.00	23.23	93	75-130	7	30
o-Xylene	12.50	11.14	89	80-120	4	30
Styrene	12.50	11.97	96	65-135	3	30
Bromoform	12.50	11.13	89	70-130	1	30
Isopropylbenzene	12.50	11.28	90	75-125	5	30
1,1,2,2-Tetrachloroethane	12.50	11.66	93	65-130	2	30
1,2,3-Trichloropropane	12.50	11.67	93	75-125	1	30
Propylbenzene	12.50	11.54	92	70-130	6	30
Bromobenzene	12.50	11.36	91	75-125	2	30

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,3,5-Trimethylbenzene	12.50	11.87	95	75-130	8	30
2-Chlorotoluene	12.50	11.97	96	75-125	4	30
4-Chlorotoluene	12.50	11.54	92	75-130	5	30
tert-Butylbenzene	12.50	11.09 b	89	70-130	13	30
1,2,4-Trimethylbenzene	12.50	10.92	87	75-130	5	30
sec-Butylbenzene	12.50	10.83 b	87	70-125	8	30
para-Isopropyl Toluene	12.50	10.53 b	84	75-130	6	30
1,3-Dichlorobenzene	12.50	11.13	89	75-125	0	30
1,4-Dichlorobenzene	12.50	11.51	92	75-125	3	30
n-Butylbenzene	12.50	10.49 b	84	70-135	8	30
1,2-Dichlorobenzene	12.50	11.17	89	70-120	1	30
1,2-Dibromo-3-Chloropropane	12.50	10.59	85	50-130	8	30
1,2,4-Trichlorobenzene	12.50	9.568 b	77	65-135	1	30
Hexachlorobutadiene	12.50	9.742 b	78	50-140	11	30
Naphthalene	12.50	8.166 b	65	55-140	6	30
1,2,3-Trichlorobenzene	12.50	9.523 b	76	55-140	5	30

Surrogate	%REC	Limits
Dibromofluoromethane	111	85-115
1,2-Dichloroethane-d4	111	70-120
Toluene-d8	97	85-120
Bromofluorobenzene	102	75-120

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797876	Batch#:	225691
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.4 U b	1.0	0.2
Chloromethane	0.5 U	1.0	0.2
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.8 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.2
Trichlorofluoromethane	0.2 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.5 U	2.0	0.2
1,1-Dichloroethene	0.2 U	0.5	0.1
Methylene Chloride	0.2 U	10	0.1
Carbon Disulfide	0.4 U	0.5	0.1
MTBE	0.4 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.1
Vinyl Acetate	2.0 U	10	0.5
1,1-Dichloroethane	0.2 U	0.5	0.1
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.4 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.4 U	0.5	0.2
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.4 U	0.5	0.1
Carbon Tetrachloride	0.4 U	0.5	0.1
1,2-Dichloroethane	0.4 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.2
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.4 U	0.5	0.1
4-Methyl-2-Pentanone	0.5 U	10	0.2
cis-1,3-Dichloropropene	0.4 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.4 U	0.5	0.1
1,1,2-Trichloroethane	0.4 U	0.5	0.2
2-Hexanone	0.5 U	10	0.2
1,3-Dichloropropane	0.4 U	0.5	0.1
Tetrachloroethene	0.2 U b	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.2
m,p-Xylenes	0.2 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.5 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.4 U	0.5	0.1
1,2,3-Trichloropropane	0.5 U	0.5	0.1
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.4 U	0.5	0.1
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797876	Batch#:	225691
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.2
tert-Butylbenzene	0.2 U b	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.2
sec-Butylbenzene	0.2 U b	0.5	0.1
para-Isopropyl Toluene	0.2 U b	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.4 U b	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	0.8 U	2.0	0.2
1,2,4-Trichlorobenzene	0.5 U b	0.5	0.1
Hexachlorobutadiene	0.5 U b	2.0	0.1
Naphthalene	0.5 U b	2.0	0.1
1,2,3-Trichlorobenzene	0.5 U b	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	109	85-115
1,2-Dichloroethane-d4	112	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	107	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225767
Units:	ug/L	Analyzed:	08/04/15
Diln Fac:	1.000		

Type: BS Lab ID: QC798149

Analyte	Spiked	Result	%REC	Limits
Freon 12	20.00	18.70 b	94	30-155
Chloromethane	20.00	16.10 b	81	40-125
Vinyl Chloride	20.00	23.75	119	50-145
Bromomethane	20.00	18.71 b	94	30-145
Chloroethane	20.00	23.18	116	60-135
Trichlorofluoromethane	20.00	23.15	116	60-145
Acetone	25.00	23.31	93	40-140
Freon 113	25.00	28.95	116	61-138
1,1-Dichloroethene	25.00	26.86	107	70-130
Methylene Chloride	25.00	28.18	113	55-140
Carbon Disulfide	25.00	27.04	108	35-160
MTBE	25.00	24.93	100	65-125
trans-1,2-Dichloroethene	25.00	28.66	115	60-140
Vinyl Acetate	25.00	39.30 b	157	60-194
1,1-Dichloroethane	25.00	27.62	110	70-135
2-Butanone	25.00	26.70	107	30-150
cis-1,2-Dichloroethene	25.00	29.38	118	70-125
2,2-Dichloropropane		NA		
Chloroform	25.00	28.99	116	65-135
Bromochloromethane	25.00	29.29	117	65-130
1,1,1-Trichloroethane	25.00	29.38	118	65-130
1,1-Dichloropropene	25.00	26.85	107	75-130
Carbon Tetrachloride	25.00	28.63	115	65-140
1,2-Dichloroethane	25.00	25.60	102	70-130
Benzene	25.00	28.03	112	80-120
Trichloroethene	25.00	26.33	105	70-125
1,2-Dichloropropane	25.00	25.59	102	75-125
Bromodichloromethane	25.00	25.83	103	75-120
Dibromomethane	25.00	25.56	102	75-125
4-Methyl-2-Pentanone	25.00	23.46 b	94	60-135
cis-1,3-Dichloropropene	25.00	27.12	108	70-130
Toluene	25.00	28.97	116	75-120
trans-1,3-Dichloropropene	25.00	26.53	106	55-140
1,1,2-Trichloroethane	25.00	26.53	106	75-125
2-Hexanone	25.00	23.60	94	55-130
1,3-Dichloropropane	25.00	26.85	107	75-125
Tetrachloroethene	25.00	29.41	118	45-150
Dibromochloromethane	25.00	26.96	108	60-135
1,2-Dibromoethane	25.00	25.69	103	80-120
Chlorobenzene	25.00	28.66	115	80-120
1,1,1,2-Tetrachloroethane	25.00	27.32	109	80-130
Ethylbenzene	25.00	29.39	118	75-125
m,p-Xylenes	50.00	59.65	119	75-130
o-Xylene	25.00	28.95	116	80-120
Styrene	25.00	27.99	112	65-135
Bromoform	25.00	27.47	110	70-130
Isopropylbenzene	25.00	32.15	129 *	75-125
1,1,2,2-Tetrachloroethane	25.00	26.80	107	65-130
1,2,3-Trichloropropane	25.00	26.03	104	75-125

*= Value outside of QC limits; see narrative
b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225767
Units:	ug/L	Analyzed:	08/04/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Propylbenzene	25.00	32.06	128	70-130
Bromobenzene	25.00	28.96	116	75-125
1,3,5-Trimethylbenzene	25.00	32.67	131 *	75-130
2-Chlorotoluene	25.00	31.47	126 *	75-125
4-Chlorotoluene	25.00	31.07	124	75-130
tert-Butylbenzene	25.00	30.73	123	70-130
1,2,4-Trimethylbenzene	25.00	29.59	118	75-130
sec-Butylbenzene	25.00	32.71	131 *	70-125
para-Isopropyl Toluene	25.00	32.11	128	75-130
1,3-Dichlorobenzene	25.00	30.53	122	75-125
1,4-Dichlorobenzene	25.00	29.74	119	75-125
n-Butylbenzene	25.00	32.32	129	70-135
1,2-Dichlorobenzene	25.00	29.74	119	70-120
1,2-Dibromo-3-Chloropropane	25.00	21.34 b	85	50-130
1,2,4-Trichlorobenzene	25.00	27.03	108	65-135
Hexachlorobutadiene	25.00	32.53	130	50-140
Naphthalene	25.00	22.29 b	89	55-140
1,2,3-Trichlorobenzene	25.00	28.59	114	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	106	85-115
1,2-Dichloroethane-d4	100	70-120
Toluene-d8	101	85-120
Bromofluorobenzene	101	75-120

*= Value outside of QC limits; see narrative
b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225767
Units:	ug/L	Analyzed:	08/04/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC798150

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	20.00	16.69 b	83	30-155	11	30
Chloromethane	20.00	14.35 b	72	40-125	12	30
Vinyl Chloride	20.00	20.94	105	50-145	13	30
Bromomethane	20.00	17.07 b	85	30-145	9	30
Chloroethane	20.00	19.77	99	60-135	16	30
Trichlorofluoromethane	20.00	19.90	100	60-145	15	30
Acetone	25.00	20.37	81	40-140	13	30
Freon 113	25.00	25.24	101	61-138	14	30
1,1-Dichloroethene	25.00	23.53	94	70-130	13	30
Methylene Chloride	25.00	24.88	100	55-140	12	30
Carbon Disulfide	25.00	23.21	93	35-160	15	30
MTBE	25.00	22.24	89	65-125	11	30
trans-1,2-Dichloroethene	25.00	25.28	101	60-140	13	30
Vinyl Acetate	25.00	35.27 b	141	60-194	11	30
1,1-Dichloroethane	25.00	24.11	96	70-135	14	30
2-Butanone	25.00	23.65	95	30-150	12	30
cis-1,2-Dichloroethene	25.00	25.01	100	70-125	16	30
2,2-Dichloropropane		NA				
Chloroform	25.00	24.93	100	65-135	15	30
Bromochloromethane	25.00	26.37	105	65-130	11	30
1,1,1-Trichloroethane	25.00	25.45	102	65-130	14	30
1,1-Dichloropropene	25.00	23.49	94	75-130	13	30
Carbon Tetrachloride	25.00	24.85	99	65-140	14	30
1,2-Dichloroethane	25.00	23.52	94	70-130	8	30
Benzene	25.00	25.31	101	80-120	10	30
Trichloroethene	25.00	23.79	95	70-125	10	30
1,2-Dichloropropane	25.00	22.94	92	75-125	11	30
Bromodichloromethane	25.00	23.27	93	75-120	10	30
Dibromomethane	25.00	23.39	94	75-125	9	30
4-Methyl-2-Pentanone	25.00	21.64 b	87	60-135	8	30
cis-1,3-Dichloropropene	25.00	24.22	97	70-130	11	30
Toluene	25.00	25.92	104	75-120	11	30
trans-1,3-Dichloropropene	25.00	23.79	95	55-140	11	30
1,1,2-Trichloroethane	25.00	23.52	94	75-125	12	30
2-Hexanone	25.00	21.97	88	55-130	7	30
1,3-Dichloropropane	25.00	24.24	97	75-125	10	30
Tetrachloroethene	25.00	26.08	104	45-150	12	30
Dibromochloromethane	25.00	24.00	96	60-135	12	30
1,2-Dibromoethane	25.00	22.96	92	80-120	11	30
Chlorobenzene	25.00	25.73	103	80-120	11	30
1,1,1,2-Tetrachloroethane	25.00	23.96	96	80-130	13	30
Ethylbenzene	25.00	26.00	104	75-125	12	30
m,p-Xylenes	50.00	52.83	106	75-130	12	30
o-Xylene	25.00	25.09	100	80-120	14	30
Styrene	25.00	24.75	99	65-135	12	30
Bromoform	25.00	24.67	99	70-130	11	30
Isopropylbenzene	25.00	27.84	111	75-125	14	30
1,1,2,2-Tetrachloroethane	25.00	24.46	98	65-130	9	30
1,2,3-Trichloropropane	25.00	23.92	96	75-125	8	30

*= Value outside of QC limits; see narrative
b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225767
Units:	ug/L	Analyzed:	08/04/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Propylbenzene	25.00	27.71	111	70-130	15	30
Bromobenzene	25.00	26.09	104	75-125	10	30
1,3,5-Trimethylbenzene	25.00	28.58	114	75-130	13	30
2-Chlorotoluene	25.00	27.76	111	75-125	13	30
4-Chlorotoluene	25.00	27.60	110	75-130	12	30
tert-Butylbenzene	25.00	26.55	106	70-130	15	30
1,2,4-Trimethylbenzene	25.00	26.02	104	75-130	13	30
sec-Butylbenzene	25.00	28.61	114	70-125	13	30
para-Isopropyl Toluene	25.00	27.79	111	75-130	14	30
1,3-Dichlorobenzene	25.00	27.26	109	75-125	11	30
1,4-Dichlorobenzene	25.00	26.72	107	75-125	11	30
n-Butylbenzene	25.00	28.29	113	70-135	13	30
1,2-Dichlorobenzene	25.00	26.90	108	70-120	10	30
1,2-Dibromo-3-Chloropropane	25.00	19.71 b	79	50-130	8	30
1,2,4-Trichlorobenzene	25.00	24.44	98	65-135	10	30
Hexachlorobutadiene	25.00	28.14	113	50-140	14	30
Naphthalene	25.00	21.28 b	85	55-140	5	30
1,2,3-Trichlorobenzene	25.00	26.76	107	55-140	7	30

Surrogate	%REC	Limits
Dibromofluoromethane	104	85-115
1,2-Dichloroethane-d4	102	70-120
Toluene-d8	99	85-120
Bromofluorobenzene	103	75-120

*= Value outside of QC limits; see narrative
b= See narrative
NA= Not Analyzed
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC798151	Batch#:	225767
Matrix:	Water	Analyzed:	08/04/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.4 U b	1.0	0.1
Chloromethane	0.4 U b	1.0	0.1
Vinyl Chloride	0.4 U	0.5	0.1
Bromomethane	0.4 U b	1.0	0.2
Chloroethane	0.4 U	1.0	0.1
Trichlorofluoromethane	0.2 U	1.0	0.1
Acetone	5.0 U	10	3.3
Freon 113	0.4 U	2.0	0.1
1,1-Dichloroethene	0.4 U	0.5	0.1
Methylene Chloride	0.4 U	10	0.1
Carbon Disulfide	0.4 U	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.4 U	0.5	0.1
Vinyl Acetate	1.0 U	10	0.3
1,1-Dichloroethane	0.2 U	0.5	0.1
2-Butanone	1.0 U	10	0.3
cis-1,2-Dichloroethene	0.4 U	0.5	0.1
2,2-Dichloropropane	NA		
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.4 U	0.5	0.2
1,1,1-Trichloroethane	0.4 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.4 U	0.5	0.1
1,2-Dichloroethane	0.4 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	0.4 U b	10	0.2
cis-1,3-Dichloropropene	0.4 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.4 U	0.5	0.1
1,1,2-Trichloroethane	0.4 U	0.5	0.1
2-Hexanone	0.4 U	10	0.2
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.2 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.4 U	0.5	0.2
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.4 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.1
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
NA= Not Analyzed
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC798151	Batch#:	225767
Matrix:	Water	Analyzed:	08/04/15
Units:	ug/L		

Analyte	Result	LOQ	DL
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.4 U	0.5	0.1
1,4-Dichlorobenzene	0.4 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.4 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.8 U b	2.0	0.5
1,2,4-Trichlorobenzene	0.5 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.2
Naphthalene	1.0 U b	2.0	0.3
1,2,3-Trichlorobenzene	0.5 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	105	85-115
1,2-Dichloroethane-d4	94	70-120
Toluene-d8	101	85-120
Bromofluorobenzene	108	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
NA= Not Analyzed
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225842
Units:	ug/L	Analyzed:	08/06/15
Diln Fac:	1.000		

Type: BS Lab ID: QC798441

Analyte	Spiked	Result		%REC		Limits
Freon 12	10.00	13.91	b	139		30-155
Chloromethane	10.00	11.59		116		40-125
Vinyl Chloride	10.00	13.37		134		50-145
Bromomethane	10.00	10.39		104		30-145
Chloroethane	10.00	12.89		129		60-135
Trichlorofluoromethane	10.00	11.91	b	119		60-145
Acetone	12.50	10.87		87		40-140
Freon 113	12.50	11.25	b	90		61-138
1,1-Dichloroethene	12.50	12.04		96		70-130
Methylene Chloride	12.50	13.80		110		55-140
Carbon Disulfide	12.50	12.74	b	102		35-160
MTBE	12.50	13.37		107		65-125
trans-1,2-Dichloroethene	12.50	13.01		104		60-140
Vinyl Acetate	12.50	21.57	b	173		60-194
1,1-Dichloroethane	12.50	14.32		115		70-135
2-Butanone	12.50	13.03		104		30-150
cis-1,2-Dichloroethene	12.50	13.49		108		70-125
2,2-Dichloropropane	12.50	17.59	b	141	*	70-135
Chloroform	12.50	14.44		116		65-135
Bromochloromethane	12.50	12.65		101		65-130
1,1,1-Trichloroethane	12.50	14.67		117		65-130
1,1-Dichloropropene	12.50	13.57		109		75-130
Carbon Tetrachloride	12.50	14.27		114		65-140
1,2-Dichloroethane	12.50	14.75		118		70-130
Benzene	12.50	13.09		105		80-120
Trichloroethene	12.50	12.78		102		70-125
1,2-Dichloropropane	12.50	12.54		100		75-125
Bromodichloromethane	12.50	13.20		106		75-120
Dibromomethane	12.50	12.69		102		75-125
4-Methyl-2-Pentanone	12.50	12.25		98		60-135
cis-1,3-Dichloropropene	12.50	12.91		103		70-130
Toluene	12.50	13.20		106		75-120
trans-1,3-Dichloropropene	12.50	12.23		98		55-140
1,1,2-Trichloroethane	12.50	12.58		101		75-125
2-Hexanone	12.50	11.94		96		55-130
1,3-Dichloropropane	12.50	12.46		100		75-125
Tetrachloroethene	12.50	13.22		106		45-150
Dibromochloromethane	12.50	12.08		97		60-135
1,2-Dibromoethane	12.50	12.04		96		80-120
Chlorobenzene	12.50	13.07		105		80-120
1,1,1,2-Tetrachloroethane	12.50	13.15		105		80-130
Ethylbenzene	12.50	14.15		113		75-125
m,p-Xylenes	25.00	26.98		108		75-130
o-Xylene	12.50	14.12		113		80-120
Styrene	12.50	13.87		111		65-135
Bromoform	12.50	10.56		85		70-130
Isopropylbenzene	12.50	12.49		100		75-125
1,1,2,2-Tetrachloroethane	12.50	12.28		98		65-130
1,2,3-Trichloropropane	12.50	11.25		90		75-125
Propylbenzene	12.50	13.64		109		70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225842
Units:	ug/L	Analyzed:	08/06/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Bromobenzene	12.50	12.51	100	75-125
1,3,5-Trimethylbenzene	12.50	14.03	112	75-130
2-Chlorotoluene	12.50	13.84	111	75-125
4-Chlorotoluene	12.50	14.32	115	75-130
tert-Butylbenzene	12.50	12.97	104	70-130
1,2,4-Trimethylbenzene	12.50	13.28	106	75-130
sec-Butylbenzene	12.50	12.55	100	70-125
para-Isopropyl Toluene	12.50	13.28	106	75-130
1,3-Dichlorobenzene	12.50	13.33	107	75-125
1,4-Dichlorobenzene	12.50	12.52	100	75-125
n-Butylbenzene	12.50	14.52	116	70-135
1,2-Dichlorobenzene	12.50	12.72	102	70-120
1,2-Dibromo-3-Chloropropane	12.50	11.66	93	50-130
1,2,4-Trichlorobenzene	12.50	12.29	98	65-135
Hexachlorobutadiene	12.50	13.04	104	50-140
Naphthalene	12.50	10.26	82	55-140
1,2,3-Trichlorobenzene	12.50	12.02	96	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	110	85-115
1,2-Dichloroethane-d4	122 * b	70-120
Toluene-d8	101	85-120
Bromofluorobenzene	102	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225842
Units:	ug/L	Analyzed:	08/06/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC798442

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	12.82 b	128	30-155	8	30
Chloromethane	10.00	11.08	111	40-125	4	30
Vinyl Chloride	10.00	12.23	122	50-145	9	30
Bromomethane	10.00	8.522	85	30-145	20	30
Chloroethane	10.00	11.07	111	60-135	15	30
Trichlorofluoromethane	10.00	11.14 b	111	60-145	7	30
Acetone	12.50	8.833	71	40-140	21	30
Freon 113	12.50	10.38 b	83	61-138	8	30
1,1-Dichloroethene	12.50	11.61	93	70-130	4	30
Methylene Chloride	12.50	12.70	102	55-140	8	30
Carbon Disulfide	12.50	11.98 b	96	35-160	6	30
MTBE	12.50	12.44	99	65-125	7	30
trans-1,2-Dichloroethene	12.50	11.91	95	60-140	9	30
Vinyl Acetate	12.50	20.62 b	165	60-194	5	30
1,1-Dichloroethane	12.50	12.96	104	70-135	10	30
2-Butanone	12.50	11.39	91	30-150	13	30
cis-1,2-Dichloroethene	12.50	12.31	98	70-125	9	30
2,2-Dichloropropane	12.50	15.77 b	126	70-135	11	30
Chloroform	12.50	13.52	108	65-135	7	30
Bromochloromethane	12.50	12.15	97	65-130	4	30
1,1,1-Trichloroethane	12.50	13.66	109	65-130	7	30
1,1-Dichloropropene	12.50	12.59	101	75-130	8	30
Carbon Tetrachloride	12.50	13.59	109	65-140	5	30
1,2-Dichloroethane	12.50	14.26	114	70-130	3	30
Benzene	12.50	12.62	101	80-120	4	30
Trichloroethene	12.50	12.64	101	70-125	1	30
1,2-Dichloropropane	12.50	11.77	94	75-125	6	30
Bromodichloromethane	12.50	12.49	100	75-120	6	30
Dibromomethane	12.50	12.08	97	75-125	5	30
4-Methyl-2-Pentanone	12.50	11.80	94	60-135	4	30
cis-1,3-Dichloropropene	12.50	13.10	105	70-130	1	30
Toluene	12.50	13.20	106	75-120	0	30
trans-1,3-Dichloropropene	12.50	12.24	98	55-140	0	30
1,1,2-Trichloroethane	12.50	12.49	100	75-125	1	30
2-Hexanone	12.50	11.76	94	55-130	2	30
1,3-Dichloropropane	12.50	12.65	101	75-125	1	30
Tetrachloroethene	12.50	12.93	103	45-150	2	30
Dibromochloromethane	12.50	12.06	96	60-135	0	30
1,2-Dibromoethane	12.50	12.72	102	80-120	6	30
Chlorobenzene	12.50	12.87	103	80-120	2	30
1,1,1,2-Tetrachloroethane	12.50	12.72	102	80-130	3	30
Ethylbenzene	12.50	13.60	109	75-125	4	30
m,p-Xylenes	25.00	24.88	100	75-130	8	30
o-Xylene	12.50	12.50	100	80-120	12	30
Styrene	12.50	12.22	98	65-135	13	30
Bromoform	12.50	10.67	85	70-130	1	30
Isopropylbenzene	12.50	12.90	103	75-125	3	30
1,1,2,2-Tetrachloroethane	12.50	12.21	98	65-130	1	30
1,2,3-Trichloropropane	12.50	11.19	90	75-125	1	30
Propylbenzene	12.50	12.36	99	70-130	10	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225842
Units:	ug/L	Analyzed:	08/06/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Bromobenzene	12.50	12.18	97	75-125	3	30
1,3,5-Trimethylbenzene	12.50	13.59	109	75-130	3	30
2-Chlorotoluene	12.50	13.49	108	75-125	3	30
4-Chlorotoluene	12.50	13.93	111	75-130	3	30
tert-Butylbenzene	12.50	12.55	100	70-130	3	30
1,2,4-Trimethylbenzene	12.50	12.54	100	75-130	6	30
sec-Butylbenzene	12.50	12.56	100	70-125	0	30
para-Isopropyl Toluene	12.50	12.61	101	75-130	5	30
1,3-Dichlorobenzene	12.50	12.90	103	75-125	3	30
1,4-Dichlorobenzene	12.50	12.65	101	75-125	1	30
n-Butylbenzene	12.50	12.65	101	70-135	14	30
1,2-Dichlorobenzene	12.50	12.67	101	70-120	0	30
1,2-Dibromo-3-Chloropropane	12.50	11.43	91	50-130	2	30
1,2,4-Trichlorobenzene	12.50	11.85	95	65-135	4	30
Hexachlorobutadiene	12.50	12.57	101	50-140	4	30
Naphthalene	12.50	10.45	84	55-140	2	30
1,2,3-Trichlorobenzene	12.50	11.87	95	55-140	1	30

Surrogate	%REC	Limits
Dibromofluoromethane	106	85-115
1,2-Dichloroethane-d4	117 b	70-120
Toluene-d8	101	85-120
Bromofluorobenzene	100	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC798443	Batch#:	225842
Matrix:	Water	Analyzed:	08/06/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.2 U b	1.0	0.1
Chloromethane	0.4 U	1.0	0.3
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.4 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.3
Trichlorofluoromethane	0.4 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.2 U b	2.0	0.1
1,1-Dichloroethene	0.2 U	0.5	0.2
Methylene Chloride	0.2 U	10	0.2
Carbon Disulfide	0.2 U b	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.2
Vinyl Acetate	2.0 U b	10	1.1
1,1-Dichloroethane	0.2 U	0.5	0.2
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.2 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.2 U	0.5	0.1
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.2 U	0.5	0.1
1,2-Dichloroethane	0.2 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	1.0 U	10	0.7
cis-1,3-Dichloropropene	0.2 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.2 U	0.5	0.1
1,1,2-Trichloroethane	0.2 U	0.5	0.2
2-Hexanone	1.0 U	10	0.5
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.4 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.2
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC798443	Batch#:	225842
Matrix:	Water	Analyzed:	08/06/15
Units:	ug/L		

Analyte	Result	LOQ	DL
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.1
Naphthalene	0.4 U	2.0	0.1
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	108	85-115
1,2-Dichloroethane-d4	124 * b	70-120
Toluene-d8	100	85-120
Bromofluorobenzene	103	75-120

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Initial & Continuing Calibration Data

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475253923005 File : hfp05 Time : 25-JUN-2015 10:29

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	5962	25.78	
75	30% - 60% of mass 95	11251	48.65	
95		23128	100.00	
96	5% - 9% of mass 95	1708	7.38	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18311	79.17	
175	5% - 9% of mass 174	1349	7.37	
176	> 95% and < 101% of mass 174	18027	98.45	
177	5% - 9% of mass 176	1178	6.53	

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475304292006 File : hgu06 Time : 30-JUL-2015 10:16

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	9230	25.37	
75	30% - 60% of mass 95	18415	50.62	
95		36376	100.00	
96	5% - 9% of mass 95	2570	7.07	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	26269	72.22	
175	5% - 9% of mass 174	2139	8.14	
176	> 95% and < 101% of mass 174	25927	98.70	
177	5% - 9% of mass 176	1829	7.05	

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475305775003 File : hgv03 Time : 31-JUL-2015 09:18

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	8236	29.48	
75	30% - 60% of mass 95	15671	56.09	
95		27941	100.00	
96	5% - 9% of mass 95	2182	7.81	
173	< 2% of mass 174	169	0.81	
174	> 50% and < 100% of mass 95	20986	75.11	
175	5% - 9% of mass 174	1687	8.04	
176	> 95% and < 101% of mass 174	20242	96.45	
177	5% - 9% of mass 176	1392	6.88	

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475314337003 File : hh603 Time : 06-AUG-2015 08:42

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	7812	28.34	
75	30% - 60% of mass 95	15258	55.36	
95		27562	100.00	
96	5% - 9% of mass 95	1849	6.71	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	22408	81.30	
175	5% - 9% of mass 174	1714	7.65	
176	> 95% and < 101% of mass 174	22229	99.20	
177	5% - 9% of mass 176	1632	7.34	

Analyst: DJA Date: 08/06/15 Reviewer: LW Date: 08/06/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485271359002 File : ig702 Time : 07-JUL-2015 10:49

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	8478	30.49	
75	30% - 60% of mass 95	15441	55.53	
95		27808	100.00	
96	5% - 9% of mass 95	2013	7.24	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18113	65.14	
175	5% - 9% of mass 174	1377	7.60	
176	> 95% and < 101% of mass 174	18059	99.70	
177	5% - 9% of mass 176	1227	6.79	

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485305964003 File : igv03 Time : 31-JUL-2015 12:08

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	48674	33.84	
75	30% - 60% of mass 95	84784	58.95	
95		143818	100.00	
96	5% - 9% of mass 95	9854	6.85	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	91269	63.46	
175	5% - 9% of mass 174	6879	7.54	
176	> 95% and < 101% of mass 174	88248	96.69	
177	5% - 9% of mass 176	6075	6.88	

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/03/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA11 Run Name : BFB IDF : 1.0
Seqnum : 835169070009 File : kdr09 Time : 28-APR-2015 11:39

Standards: S26000

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	5015	23.01	
75	30% - 60% of mass 95	12019	55.14	
95		21797	100.00	
96	5% - 9% of mass 95	1451	6.66	
173	< 2% of mass 174	294	1.48	
174	> 50% and < 100% of mass 95	19869	91.15	
175	5% - 9% of mass 174	1571	7.91	
176	> 95% and < 101% of mass 174	18904	95.14	
177	5% - 9% of mass 176	1500	7.93	

Analyst: DAR Date: 04/29/15 Reviewer: LW Date: 05/01/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA11 Run Name : BFB IDF : 1.0
Seqnum : 835304280003 File : kgu03 Time : 30-JUL-2015 08:35

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	3928	21.37	
75	30% - 60% of mass 95	10458	56.89	
95		18384	100.00	
96	5% - 9% of mass 95	1322	7.19	
173	< 2% of mass 174	346	1.98	
174	> 50% and < 100% of mass 95	17472	95.04	
175	5% - 9% of mass 174	1276	7.30	
176	> 95% and < 101% of mass 174	17142	98.11	
177	5% - 9% of mass 176	1120	6.53	

Analyst: KKM Date: 07/30/15 Reviewer: LW Date: 07/30/15

CURTIS & TOMPKINS BFB TUNE FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA11 Run Name : BFB IDF : 1.0
Seqnum : 835311450003 File : kh403 Time : 04-AUG-2015 09:47

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	3656	22.53	
75	30% - 60% of mass 95	9578	59.02	
95		16229	100.00	
96	5% - 9% of mass 95	1054	6.49	
173	< 2% of mass 174	270	1.69	
174	> 50% and < 100% of mass 95	15957	98.32	
175	5% - 9% of mass 174	1332	8.35	
176	> 95% and < 101% of mass 174	15834	99.23	
177	5% - 9% of mass 176	1045	6.60	

Analyst: DJA Date: 08/05/15 Reviewer: LW Date: 08/05/15

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 MSVOA Water: EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Date : 25-JUN-2015 12:00 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	hfp08	475253923008		25-JUN-2015 12:00	S26360 (2000000X), S27172 (2000000X), S27416 (2000000X), S26220 (1000000X), S27244 (5000X)
L2	hfp09	475253923009		25-JUN-2015 12:34	S26360 (1000000X), S27172 (1000000X), S27416 (1000000X), S26220 (500000X), S27244 (5000X)
L3	hfp10	475253923010		25-JUN-2015 13:07	S26360 (500000X), S27172 (250000X), S27416 (250000X), S26220 (250000X), S27244 (5000X)
L4	hfp11	475253923011		25-JUN-2015 13:41	S26360 (200000X), S27172 (100000X), S27416 (100000X), S26220 (100000X), S27244 (5000X)
L5	hfp12	475253923012		25-JUN-2015 14:15	S26360 (100000X), S27172 (50000X), S27416 (50000X), S26220 (50000X), S27244 (5000X)
L6	hfp13	475253923013		25-JUN-2015 14:49	S26360 (50000X), S27172 (25000X), S27416 (25000X), S26220 (25000X), S27244 (5000X)
L7	hfp14	475253923014		25-JUN-2015 15:23	S26360 (20000X), S27172 (10000X), S27416 (10000X), S26220 (10000X), S27244 (5000X)
L8	hfp15	475253923015		25-JUN-2015 15:57	S26360 (13330X), S27172 (6667X), S27416 (6667X), S26220 (6667X), S27244 (5000X)
L9	hfp16	475253923016		25-JUN-2015 16:31	S26360 (10000X), S27172 (5000X), S27416 (5000X), S26220 (5000X), S27244 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.5422	0.5172	0.5083	0.3399	0.5062	0.4539	0.4517	0.4336	AVRG		2.13169		0.4691	14	15	0.100	0.99	
Chloromethane	0.8987	0.8619	0.8323	0.8605	0.8171	0.8121	0.7349	0.6966	0.6720	AVRG		1.25243		0.7984	10	15	0.100	0.99	
Vinyl Chloride	0.7472	0.7394	0.6855	0.7044	0.6029	0.6727	0.6189	0.6110	0.5959	AVRG		1.50556		0.6642	9	15	0.100	0.99	
Bromomethane		0.3169	0.3400	0.3409	0.3341	0.3597	0.3811	0.3912	0.3914	AVRG		2.80181		0.3569	8	15	0.100	0.99	
Chloroethane		0.5190	0.5062	0.5263	0.4961	0.4834	0.4365	0.4526	0.4115	AVRG		2.08793		0.4789	9	15	0.100	0.99	
Trichlorofluoromethane		0.8599	0.7998	0.8228	0.6661	0.7911	0.7085	0.6839	0.6666	AVRG		1.33363		0.7498	10	15	0.100	0.99	
Acetone			0.2098m	0.1934	0.1755	0.1674	0.1604	0.1621	0.1653	AVRG		5.67351		0.1763	11	15	0.100	0.99	
Freon 113		0.4643	0.4016	0.4799	0.4479	0.4213	0.4307	0.4330	0.4250	AVRG		2.28335		0.4380	6	15	0.100	0.99	
1,1-Dichloroethene		0.5416	0.4651	0.4820	0.4663	0.4663	0.4287	0.4455	0.4262	AVRG		2.14956		0.4652	8	15	0.100	0.99	
Methylene Chloride		0.6436	0.6139	0.6102	0.6145	0.6035	0.5455	0.5371	0.5385	AVRG		1.69968		0.5883	7	15	0.100	0.99	
Carbon Disulfide		2.2300	2.0330	2.0278	1.9431	1.9496	1.7400	1.6979	1.7361	AVRG		0.52091		1.9197	10	15	0.100	0.99	
MTBE		1.3888	1.3144	1.3297	1.3535	1.3915	1.2257	1.2301	1.2454	AVRG		0.76343		1.3099	5	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5812	0.5351	0.5851	0.5296	0.5331	0.5010	0.4983	0.4690	AVRG		1.89017		0.5291	8	15	0.100	0.99	
Vinyl Acetate			0.7359	0.6400	0.8340	0.8982	0.8688	0.8276	0.8511	AVRG		1.23772		0.8079	11	15	0.05	0.99	
1,1-Dichloroethane		1.3753	1.2376	1.2462	1.1611	1.1683	1.1000	1.0691	1.0659	AVRG		0.84893		1.1779	9	15	0.200	0.99	
2-Butanone			0.2614	0.2269	0.2295	0.2269	0.2145	0.2088	0.2028	AVRG		4.45653		0.2244	9	15	0.100	0.99	
2,2-Dichloropropane		0.7852	0.7823	0.7849	0.7152	0.7194	0.7163	0.7042	0.6535	AVRG		1.36494		0.7326	6	15	0.05	0.99	
cis-1,2-Dichloroethene		0.6590	0.6388	0.5839	0.6112	0.6097	0.5601	0.5469	0.5340	AVRG		1.68645		0.5930	7	15	0.100	0.99	
Chloroform		1.1317	1.0698	1.0659	1.0149	1.0293	0.9363	0.8979	0.9156	AVRG		0.99240		1.0077	8	15	0.200	0.99	
Bromochloromethane		0.2644	0.3006	0.3029	0.2793	0.2925	0.2695	0.2638	0.2543	AVRG		3.59193		0.2784	7	15	0.05	0.99	
1,1,1-Trichloroethane		0.8707	0.7206	0.7798	0.6962	0.7108	0.6643	0.6648	0.6634	AVRG		1.38632		0.7213	10	15	0.100	0.99	
1,1-Dichloropropene		0.5538	0.5096	0.5468	0.4778	0.5060	0.4532	0.4734	0.4523	AVRG		2.01368		0.4966	8	15	0.05	0.99	
Carbon Tetrachloride		0.3917	0.3751	0.4286	0.3784	0.3849	0.3630	0.3799	0.3699	AVRG		2.60469		0.3839	5	15	0.100	0.99	
1,2-Dichloroethane		0.5047	0.4779	0.4911	0.4735	0.5064	0.4484	0.4529	0.4442	AVRG		2.10581		0.4749	5	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.5632	1.5167	1.4824	1.4720	1.4606	1.3102	1.2779	1.2083	AVRG		0.70851		1.4114	9	15	0.500	0.99	
Trichloroethene		0.3870	0.3602	0.3743	0.3418	0.3531	0.3047	0.3260	0.3134	AVRG		2.89807		0.3451	8	15	0.200	0.99	
1,2-Dichloropropane		0.5174	0.4563	0.4633	0.4413	0.4534	0.4028	0.3963	0.3705	AVRG		2.28492		0.4377	11	15	0.100	0.99	
Bromodichloromethane		0.4992	0.4895	0.5068	0.4887	0.5016	0.4669	0.4680	0.4549	AVRG		2.06416		0.4845	4	15	0.200	0.99	
Dibromomethane		0.2078	0.2173	0.2173	0.2140	0.2242	0.1945	0.2075	0.2007	AVRG		4.75265		0.2104	5	15	0.05	0.99	
4-Methyl-2-Pentanone			0.3218	0.3344	0.3197	0.3439	0.3090	0.3173	0.3148	AVRG		3.09607		0.3230	4	15	0.100	0.99	
cis-1,3-Dichloropropene		0.6154	0.5989	0.6159	0.5977	0.6234	0.5411	0.5759	0.5448	AVRG		1.69741		0.5891	5	15	0.200	0.99	
Toluene		1.0224	0.9429	0.9938	0.9723	0.9383	0.8279	0.8469	0.8207	AVRG		1.08620		0.9206	9	15	0.400	0.99	
trans-1,3-Dichloropropene		0.5650	0.5537	0.5999	0.5693	0.6022	0.5310	0.5293	0.5139	AVRG		1.79198		0.5580	6	15	0.100	0.99	
1,1,2-Trichloroethane		0.1716	0.1666	0.1737	0.1855	0.1759	0.1653	0.1615	0.1629	AVRG		5.87006		0.1704	5	15	0.100	0.99	
2-Hexanone			0.2465	0.2714	0.2872	0.2906	0.2446	0.2504	0.2370	AVRG		3.82982		0.2611	8	15	0.100	0.99	
1,3-Dichloropropane		0.5966	0.5576	0.5777	0.5933	0.6025	0.5081	0.5297	0.5060	AVRG		1.78910		0.5589	7	15	0.05	0.99	
Tetrachloroethene		0.4077	0.3511	0.3912	0.3619	0.3609	0.3465	0.3444	0.3411	AVRG		2.75402		0.3631	7	15	0.200	0.99	
Dibromochloromethane		0.4205	0.3824	0.4068	0.3951	0.4081	0.3771	0.3798	0.3640	AVRG		2.55272		0.3917	5	15	0.100	0.99	
1,2-Dibromoethane		0.3051	0.2983	0.3170	0.3311	0.3331	0.2974	0.3034	0.2978	AVRG		3.22162		0.3104	5	15	0.100	0.99	
Chlorobenzene		1.1487	1.0740	1.0830	1.1014	1.0667	0.9835	0.9232	0.8924	AVRG		0.96701		1.0341	9	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3898	0.3841	0.3962	0.3912	0.3937	0.3630	0.3546	0.3447	AVRG		2.65153		0.3771	5	15	0.05	0.99	
Ethylbenzene		2.1020	1.8039	1.8765	1.8615	1.8090	1.6155	1.4887	1.4229	AVRG		0.57224		1.7475	13	15	0.100	0.99	
m,p-Xylenes	0.7721	0.7192	0.6722	0.6843	0.6504	0.6350	0.5744	0.5242	0.5393	AVRG		1.55950		0.6412	13	15	0.100	0.99	
o-Xylene		0.7054	0.6630	0.7309	0.6989	0.6587	0.6158	0.6096	0.5461	AVRG		1.53011		0.6535	9	15	0.300	0.99	
Styrene		1.1980	1.1097	1.1508	1.1944	1.1394	0.9943	0.9919	0.9282	AVRG		0.91884		1.0883	9	15	0.300	0.99	
Bromoform		0.2468	0.2178	0.2419	0.2501	0.2488	0.2334	0.2326	0.2319	AVRG		4.20356		0.2379	5	15	0.100	0.99	
Isopropylbenzene		3.4974	3.0271	3.4716	3.0495	3.2300	2.9020	2.8573	2.7311	AVRG		0.32302		3.0957	9	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.7011	0.6579	0.6731	0.7109	0.7192	0.6823	0.6676	0.6484	AVRG		1.46510		0.6825	4	15	0.300	0.99	
1,2,3-Trichloropropane		0.1542	0.1480	0.1597	0.1614	0.1664	0.1588	0.1530	0.1581	AVRG		6.35096		0.1575	4	15	0.05	0.99	
Propylbenzene		4.3941	3.7295	4.2665	3.7562	3.7654	3.2979	3.2519	3.1380	AVRG		0.27027		3.6999	12	15	0.05	0.99	
Bromobenzene		0.9120	0.8565	0.9502	0.8781	0.8905	0.7964	0.8080	0.7921	AVRG		1.16213		0.8605	7	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.7860	2.4893	2.7158	2.5052	2.5559	2.3980	2.2380	2.1413	AVRG		0.40344		2.4787	9	15	0.05	0.99	
2-Chlorotoluene		2.9848	2.6126	2.8160	2.5401	2.6568	2.3990	2.2559	2.1947	AVRG		0.39101		2.5575	11	15	0.05	0.99	
4-Chlorotoluene		2.5557	2.3392	2.5925	2.2163	2.4050	2.1946	2.0120	2.0184	AVRG		0.43636		2.2917	10	15	0.05	0.99	
tert-Butylbenzene		2.6516	2.2627	2.4891	2.2054	2.2931	2.1491	2.0971	1.9869	AVRG		0.44114		2.2669	9	15	0.05	0.99	
1,2,4-Trimethylbenzene		2.7768	2.6016	2.8543	2.6590	2.6498	2.4846	2.2838	2.2427	AVRG		0.38924		2.5691	9	15	0.05	0.99	
sec-Butylbenzene		4.0142	3.2043	3.8608	3.2315	3.3984	3.0471	3.0080	2.9162	AVRG		0.29984		3.3351	12	15	0.05	0.99	
para-Isopropyl Toluene		3.0247	2.5007	3.0671	2.6166	2.6063	2.4679	2.4005	2.3250	AVRG		0.38079		2.6261	11	15	0.05	0.99	
1,3-Dichlorobenzene		1.6852	1.6196	1.7181	1.4987	1.5268	1.4843	1.3826	1.3330	AVRG		0.65316		1.5310	9	15	0.600	0.99	
1,4-Dichlorobenzene		1.7753	1.4944	1.6634	1.5229	1.5577	1.4016	1.3890	1.3364	AVRG		0.65894		1.5176	10	15	0.500	0.99	
n-Butylbenzene		2.8244	2.2910	2.5993	2.3256	2.3830	2.0953	2.1596	1.9830	AVRG		0.42869		2.3327	12	15	0.05	0.99	
1,2-Dichlorobenzene		1.5589	1.4915	1.6288	1.4351	1.5716	1.3607	1.3855	1.3116	AVRG		0.68121		1.4680	8	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane		0.0894	0.1025	0.1176	0.1156	0.1145	0.1095	0.1151	0.1112	AVRG		9.13983		0.1094	9	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.8337	0.8172	0.9044	0.8459	0.8707	0.8161	0.8507	0.8089	AVRG		1.18562		0.8434	4	15	0.200	0.99	
Hexachlorobutadiene		0.4130	0.3469	0.4456	0.3995	0.4029	0.4009	0.4175	0.4024	AVRG		2.47771		0.4036	7	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		1.5902	1.4888	1.7739	1.7189	1.8194	1.7103	1.7313	1.6843	AVRG		0.59185		1.6896	6	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.7379	0.6874	0.8280	0.7628	0.7913	0.7594	0.7912	0.7401	AVRG		1.31189		0.7623	6	15	0.05	0.99	
Dibromofluoromethane	0.5486	0.5583	0.5453	0.5389	0.5478	0.5395	0.5306	0.5368	0.5402	AVRG		1.84192		0.5429	1	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3674	0.3486	0.3555	0.3377	0.3602	0.3507	0.3383	0.3410	0.3245	AVRG		2.88100		0.3471	4	15	0.05	0.99	
Toluene-d8	1.2273	1.2367	1.2015	1.2252	1.2397	1.2262	1.1762	1.2035	1.2258	AVRG		0.82100		1.2180	2	15	0.05	0.99	
Bromofluorobenzene	1.0100	0.9928	0.9628	0.9688	0.9553	0.9718	0.9400	0.9874	1.0124	AVRG		1.02257		0.9779	3	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	16	2.0000	10	5.0000	8	10.000	**-28**	20.000	8	50.000	-3	75.000	-4	100.00	-8
Chloromethane	0.5000	13	1.0000	8	2.0000	4	5.0000	8	10.000	2	20.000	2	50.000	-8	75.000	-13	100.00	-16
Vinyl Chloride	0.5000	12	1.0000	11	2.0000	3	5.0000	6	10.000	-9	20.000	1	50.000	-7	75.000	-8	100.00	-10
Bromomethane			1.0000	-11	2.0000	-5	5.0000	-4	10.000	-6	20.000	1	50.000	7	75.000	10	100.00	10
Chloroethane			1.0000	8	2.0000	6	5.0000	10	10.000	4	20.000	1	50.000	-9	75.000	-6	100.00	-14
Trichlorofluoromethane			1.0000	15	2.0000	7	5.0000	10	10.000	-11	20.000	6	50.000	-6	75.000	-9	100.00	-11
Acetone					2.0000	19	5.0000	10	10.000	0	20.000	-5	50.000	-9	75.000	-8	100.00	-6
Freon 113			0.5000	6	2.0000	-8	5.0000	10	10.000	2	20.000	-4	50.000	-2	75.000	-1	100.00	-3
1,1-Dichloroethene			0.5000	16	2.0000	0	5.0000	4	10.000	0	20.000	0	50.000	-8	75.000	-4	100.00	-8
Methylene Chloride			0.5000	9	2.0000	4	5.0000	4	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-8
Carbon Disulfide			0.5000	16	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-9	75.000	-12	100.00	-10
MTBE			0.5000	6	2.0000	0	5.0000	2	10.000	3	20.000	6	50.000	-6	75.000	-6	100.00	-5
trans-1,2-Dichloroethene			0.5000	10	2.0000	1	5.0000	11	10.000	0	20.000	1	50.000	-5	75.000	-6	100.00	-11
Vinyl Acetate					2.0000	-9	5.0000	**-21**	10.000	3	20.000	11	50.000	8	75.000	2	100.00	5
1,1-Dichloroethane			0.5000	17	2.0000	5	5.0000	6	10.000	-1	20.000	-1	50.000	-7	75.000	-9	100.00	-10
2-Butanone					2.0000	16	5.0000	1	10.000	2	20.000	1	50.000	-4	75.000	-7	100.00	-10
2,2-Dichloropropane			0.5000	7	2.0000	7	5.0000	7	10.000	-2	20.000	-2	50.000	-2	75.000	-4	100.00	-11
cis-1,2-Dichloroethene			0.5000	11	2.0000	8	5.0000	-2	10.000	3	20.000	3	50.000	-6	75.000	-8	100.00	-10
Chloroform			0.5000	12	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-7	75.000	-11	100.00	-9
Bromochloromethane			0.5000	-5	2.0000	8	5.0000	9	10.000	0	20.000	5	50.000	-3	75.000	-5	100.00	-9
1,1,1-Trichloroethane			0.5000	**21**	2.0000	0	5.0000	8	10.000	-3	20.000	-1	50.000	-8	75.000	-8	100.00	-8
1,1-Dichloropropene			0.5000	12	2.0000	3	5.0000	10	10.000	-4	20.000	2	50.000	-9	75.000	-5	100.00	-9
Carbon Tetrachloride			0.5000	2	2.0000	-2	5.0000	12	10.000	-1	20.000	0	50.000	-5	75.000	-1	100.00	-4
1,2-Dichloroethane			0.5000	6	2.0000	1	5.0000	3	10.000	0	20.000	7	50.000	-6	75.000	-5	100.00	-6
Benzene			0.5000	11	2.0000	7	5.0000	5	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-14
Trichloroethene			0.5000	12	2.0000	4	5.0000	8	10.000	-1	20.000	2	50.000	-12	75.000	-6	100.00	-9
1,2-Dichloropropane			0.5000	18	2.0000	4	5.0000	6	10.000	1	20.000	4	50.000	-8	75.000	-9	100.00	-15
Bromodichloromethane			0.5000	3	2.0000	1	5.0000	5	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-6
Dibromomethane			0.5000	-1	2.0000	3	5.0000	3	10.000	2	20.000	7	50.000	-8	75.000	-1	100.00	-5
4-Methyl-2-Pentanone					2.0000	0	5.0000	4	10.000	-1	20.000	6	50.000	-4	75.000	-2	100.00	-3
cis-1,3-Dichloropropene			0.5000	4	2.0000	2	5.0000	5	10.000	1	20.000	6	50.000	-8	75.000	-2	100.00	-8
Toluene			0.5000	11	2.0000	2	5.0000	8	10.000	6	20.000	2	50.000	-10	75.000	-8	100.00	-11
trans-1,3-Dichloropropene			0.5000	1	2.0000	-1	5.0000	7	10.000	2	20.000	8	50.000	-5	75.000	-5	100.00	-8
1,1,2-Trichloroethane			0.5000	1	2.0000	-2	5.0000	2	10.000	9	20.000	3	50.000	-3	75.000	-5	100.00	-4
2-Hexanone					2.0000	-6	5.0000	4	10.000	10	20.000	11	50.000	-6	75.000	-4	100.00	-9
1,3-Dichloropropane			0.5000	7	2.0000	0	5.0000	3	10.000	6	20.000	8	50.000	-9	75.000	-5	100.00	-9
Tetrachloroethene			0.5000	12	2.0000	-3	5.0000	8	10.000	0	20.000	-1	50.000	-5	75.000	-5	100.00	-6
Dibromochloromethane			0.5000	7	2.0000	-2	5.0000	4	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-7
1,2-Dibromoethane			0.5000	-2	2.0000	-4	5.0000	2	10.000	7	20.000	7	50.000	-4	75.000	-2	100.00	-4
Chlorobenzene			0.5000	11	2.0000	4	5.0000	5	10.000	7	20.000	3	50.000	-5	75.000	-11	100.00	-14
1,1,1,2-Tetrachloroethane			0.5000	3	2.0000	2	5.0000	5	10.000	4	20.000	4	50.000	-4	75.000	-6	100.00	-9
Ethylbenzene			0.5000	20	2.0000	3	5.0000	7	10.000	7	20.000	4	50.000	-8	75.000	-15	100.00	-19

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	20	1.0000	12	4.0000	5	10.000	7	20.000	1	40.000	-1	100.00	-10	150.00	-18	200.00	-16
o-Xylene			0.5000	8	2.0000	1	5.0000	12	10.000	7	20.000	1	50.000	-6	75.000	-7	100.00	-16
Styrene			0.5000	10	2.0000	2	5.0000	6	10.000	10	20.000	5	50.000	-9	75.000	-9	100.00	-15
Bromoform			0.5000	4	2.0000	-8	5.0000	2	10.000	5	20.000	5	50.000	-2	75.000	-2	100.00	-3
Isopropylbenzene			0.5000	13	2.0000	-2	5.0000	12	10.000	-1	20.000	4	50.000	-6	75.000	-8	100.00	-12
1,1,2,2-Tetrachloroethane			0.5000	3	2.0000	-4	5.0000	-1	10.000	4	20.000	5	50.000	0	75.000	-2	100.00	-5
1,2,3-Trichloropropane			0.5000	-2	2.0000	-6	5.0000	1	10.000	3	20.000	6	50.000	1	75.000	-3	100.00	0
Propylbenzene			0.5000	19	2.0000	1	5.0000	15	10.000	2	20.000	2	50.000	-11	75.000	-12	100.00	-15
Bromobenzene			0.5000	6	2.0000	0	5.0000	10	10.000	2	20.000	3	50.000	-7	75.000	-6	100.00	-8
1,3,5-Trimethylbenzene			0.5000	12	2.0000	0	5.0000	10	10.000	1	20.000	3	50.000	-3	75.000	-10	100.00	-14
2-Chlorotoluene			0.5000	17	2.0000	2	5.0000	10	10.000	-1	20.000	4	50.000	-6	75.000	-12	100.00	-14
4-Chlorotoluene			0.5000	12	2.0000	2	5.0000	13	10.000	-3	20.000	5	50.000	-4	75.000	-12	100.00	-12
tert-Butylbenzene			0.5000	17	2.0000	0	5.0000	10	10.000	-3	20.000	1	50.000	-5	75.000	-7	100.00	-12
1,2,4-Trimethylbenzene			0.5000	8	2.0000	1	5.0000	11	10.000	3	20.000	3	50.000	-3	75.000	-11	100.00	-13
sec-Butylbenzene			0.5000	20	2.0000	-4	5.0000	16	10.000	-3	20.000	2	50.000	-9	75.000	-10	100.00	-13
para-Isopropyl Toluene			0.5000	15	2.0000	-5	5.0000	17	10.000	0	20.000	-1	50.000	-6	75.000	-9	100.00	-11
1,3-Dichlorobenzene			0.5000	10	2.0000	6	5.0000	12	10.000	-2	20.000	0	50.000	-3	75.000	-10	100.00	-13
1,4-Dichlorobenzene			0.5000	17	2.0000	-2	5.0000	10	10.000	0	20.000	3	50.000	-8	75.000	-8	100.00	-12
n-Butylbenzene			0.5000	**21**	2.0000	-2	5.0000	11	10.000	0	20.000	2	50.000	-10	75.000	-7	100.00	-15
1,2-Dichlorobenzene			0.5000	6	2.0000	2	5.0000	11	10.000	-2	20.000	7	50.000	-7	75.000	-6	100.00	-11
1,2-Dibromo-3-Chloropropane			0.5000	-18	2.0000	-6	5.0000	7	10.000	6	20.000	5	50.000	0	75.000	5	100.00	2
1,2,4-Trichlorobenzene			0.5000	-1	2.0000	-3	5.0000	7	10.000	0	20.000	3	50.000	-3	75.000	1	100.00	-4
Hexachlorobutadiene			0.5000	2	2.0000	-14	5.0000	10	10.000	-1	20.000	0	50.000	-1	75.000	3	100.00	0
Naphthalene			0.5000	-6	2.0000	-12	5.0000	5	10.000	2	20.000	8	50.000	1	75.000	2	100.00	0
1,2,3-Trichlorobenzene			0.5000	-3	2.0000	-10	5.0000	9	10.000	0	20.000	4	50.000	0	75.000	4	100.00	-3
Dibromofluoromethane	50.000	1	50.000	3	50.000	0	50.000	-1	50.000	1	50.000	-1	50.000	-2	50.000	-1	50.000	-1
1,2-Dichloroethane-d4	50.000	6	50.000	0	50.000	2	50.000	-3	50.000	4	50.000	1	50.000	-3	50.000	-2	50.000	-7
Toluene-d8	50.000	1	50.000	2	50.000	-1	50.000	1	50.000	2	50.000	1	50.000	-3	50.000	-1	50.000	1
Bromofluorobenzene	50.000	3	50.000	2	50.000	-2	50.000	-1	50.000	-2	50.000	-1	50.000	-4	50.000	1	50.000	4

DJA 06/26/15 [Ethanol]: Corrected fronting or tailing peak integration in multiple levels.

DJA 06/26/15 [Acetone]: Corrected fronting or tailing peak integration in (hfp10).

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Cal Date : 25-JUN-2015 Type : WATER

ICV 475253923017 (hfp17 25-JUN-2015) stds: S26064 (10000X), S27244 (5000X)
ICV 475253923018 (hfp18 25-JUN-2015) stds: S27331 (10000X), S27404 (10000X), S27533 (10000X), S27244 (5000X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	475253923017	20.00	25.38	ug/L	**27**	20	v+ ***
Chloromethane	475253923017	20.00	19.54	ug/L	-2	20	
Vinyl Chloride	475253923017	20.00	20.18	ug/L	1	20	
Bromomethane	475253923017	20.00	19.54	ug/L	-2	20	
Chloroethane	475253923017	20.00	18.42	ug/L	-8	20	
Trichlorofluoromethane	475253923017	20.00	20.66	ug/L	3	20	
Acetone	475253923018	25.00	20.00	ug/L	-20	20	
Freon 113	475253923018	25.00	19.09	ug/L	**-24**	20	v- ***
1,1-Dichloroethene	475253923018	25.00	21.38	ug/L	-14	20	
Methylene Chloride	475253923018	25.00	23.31	ug/L	-7	20	
Carbon Disulfide	475253923018	25.00	18.77	ug/L	**-25**	20	v- ***
MTBE	475253923018	25.00	24.72	ug/L	-1	20	
trans-1,2-Dichloroethene	475253923018	25.00	22.57	ug/L	-10	20	
Vinyl Acetate	475253923018	25.00	32.45	ug/L	**30**	20	v+ ***
1,1-Dichloroethane	475253923018	25.00	22.75	ug/L	-9	20	
2-Butanone	475253923018	25.00	23.98	ug/L	-4	20	
2,2-Dichloropropane	475253923018	25.00	22.60	ug/L	-10	20	
cis-1,2-Dichloroethene	475253923018	25.00	24.30	ug/L	-3	20	
Chloroform	475253923018	25.00	23.92	ug/L	-4	20	
Bromochloromethane	475253923018	25.00	24.42	ug/L	-2	20	
1,1,1-Trichloroethane	475253923018	25.00	24.02	ug/L	-4	20	
1,1-Dichloropropene	475253923018	25.00	22.74	ug/L	-9	20	
Carbon Tetrachloride	475253923018	25.00	24.08	ug/L	-4	20	
1,2-Dichloroethane	475253923018	25.00	23.25	ug/L	-7	20	
Benzene	475253923018	25.00	23.36	ug/L	-7	20	
Trichloroethene	475253923018	25.00	22.70	ug/L	-9	20	
1,2-Dichloropropane	475253923018	25.00	22.01	ug/L	-12	20	
Bromodichloromethane	475253923018	25.00	22.78	ug/L	-9	20	
Dibromomethane	475253923018	25.00	23.64	ug/L	-5	20	
4-Methyl-2-Pentanone	475253923018	25.00	23.16	ug/L	-7	20	
cis-1,3-Dichloropropene	475253923018	25.00	23.42	ug/L	-6	20	
Toluene	475253923018	25.00	24.30	ug/L	-3	20	
trans-1,3-Dichloropropene	475253923018	25.00	22.10	ug/L	-12	20	
1,1,2-Trichloroethane	475253923018	25.00	24.93	ug/L	0	20	
2-Hexanone	475253923018	25.00	25.36	ug/L	1	20	
1,3-Dichloropropane	475253923018	25.00	24.96	ug/L	0	20	
Tetrachloroethene	475253923018	25.00	24.15	ug/L	-3	20	
Dibromochloromethane	475253923018	25.00	24.48	ug/L	-2	20	
1,2-Dibromoethane	475253923018	25.00	24.67	ug/L	-1	20	
Chlorobenzene	475253923018	25.00	23.11	ug/L	-8	20	
1,1,1,2-Tetrachloroethane	475253923018	25.00	23.85	ug/L	-5	20	
Ethylbenzene	475253923018	25.00	23.76	ug/L	-5	20	
m,p-Xylenes	475253923018	50.00	48.45	ug/L	-3	20	
o-Xylene	475253923018	25.00	24.72	ug/L	-1	20	
Styrene	475253923018	25.00	25.11	ug/L	0	20	
Bromoform	475253923018	25.00	24.91	ug/L	0	20	
Isopropylbenzene	475253923018	25.00	24.38	ug/L	-2	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	475253923018	25.00	26.77	ug/L	7	20	
1,2,3-Trichloropropane	475253923018	25.00	25.78	ug/L	3	20	
Propylbenzene	475253923018	25.00	24.98	ug/L	0	20	
Bromobenzene	475253923018	25.00	25.71	ug/L	3	20	
1,3,5-Trimethylbenzene	475253923018	25.00	25.45	ug/L	2	20	
2-Chlorotoluene	475253923018	25.00	24.35	ug/L	-3	20	
4-Chlorotoluene	475253923018	25.00	25.97	ug/L	4	20	
tert-Butylbenzene	475253923018	25.00	25.13	ug/L	1	20	
1,2,4-Trimethylbenzene	475253923018	25.00	24.23	ug/L	-3	20	
sec-Butylbenzene	475253923018	25.00	24.65	ug/L	-1	20	
para-Isopropyl Toluene	475253923018	25.00	25.08	ug/L	0	20	
1,3-Dichlorobenzene	475253923018	25.00	25.51	ug/L	2	20	
1,4-Dichlorobenzene	475253923018	25.00	24.94	ug/L	0	20	
n-Butylbenzene	475253923018	25.00	24.68	ug/L	-1	20	
1,2-Dichlorobenzene	475253923018	25.00	25.91	ug/L	4	20	
1,2-Dibromo-3-Chloropropane	475253923018	25.00	25.00	ug/L	0	20	
1,2,4-Trichlorobenzene	475253923018	25.00	25.19	ug/L	1	20	
Hexachlorobutadiene	475253923018	25.00	24.66	ug/L	-1	20	
Naphthalene	475253923018	25.00	24.72	ug/L	-1	20	
1,2,3-Trichlorobenzene	475253923018	25.00	26.69	ug/L	7	20	

475253923017: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15
475253923018: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

+=high bias -=low bias v=ICV

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 MSVOA Water: EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Date : 07-JUL-2015 13:45 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	ig707	485271359007	.25/.5PPB	07-JUL-2015 13:45	S26360 (2000000X), S27559 (2000000X), S27416 (2000000X), S26220 (1000000X), S27403 (5000X)
L2	ig708	485271359008	.5/1PPB	07-JUL-2015 14:19	S27403 (5000X), S26360 (1000000X), S27559 (1000000X), S27416 (1000000X), S26220 (500000X)
L3	ig709	485271359009	2PPB	07-JUL-2015 14:54	S26360 (500000X), S27559 (250000X), S27416 (250000X), S26220 (250000X), S27403 (5000X)
L4	ig710	485271359010	5PPB	07-JUL-2015 15:28	S27403 (5000X), S26360 (200000X), S27559 (100000X), S27416 (100000X), S26220 (100000X)
L5	ig711	485271359011	10PPB	07-JUL-2015 16:03	S27403 (5000X), S26360 (100000X), S27559 (50000X), S27416 (50000X), S26220 (50000X)
L6	ig712	485271359012	20PPB	07-JUL-2015 16:37	S27403 (5000X), S26360 (50000X), S27559 (25000X), S27416 (25000X), S26220 (25000X)
L7	ig713	485271359013	50PPB	07-JUL-2015 17:12	S27403 (5000X), S26360 (20000X), S27559 (10000X), S27416 (10000X), S26220 (10000X)
L8	ig714	485271359014	75PPB	07-JUL-2015 17:46	S27403 (5000X), S26360 (13330X), S27559 (6667X), S27416 (6667X), S26220 (6667X)
L9	ig715	485271359015	100PPB	07-JUL-2015 18:21	S27403 (5000X), S26360 (10000X), S27559 (5000X), S27416 (5000X), S26220 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.8295	0.7813	0.8144	0.6552	0.7846	0.6493	0.6678	0.6451	AVRG		1.37286		0.7284	11	15	0.100	0.99	
Chloromethane	1.4221	1.2354	1.2133	1.1468	1.1031	1.0288	0.8902	0.8250		QUAD	-0.1818	0.87534	0.005523	1.1081	1.000	15	0.100	0.99	
Vinyl Chloride	0.9594	0.8834	0.9021	0.8573	0.8247	0.8347	0.7011	0.6584	0.6550	AVRG		1.23693		0.8085	14	15	0.100	0.99	
Bromomethane	0.3703	0.3463	0.3273	0.3389	0.3913	0.4129	0.4326	0.4392	0.4531	AVRG		2.56273		0.3902	12	15	0.100	0.99	
Chloroethane		0.5011	0.5101	0.4605	0.4740	0.4547	0.4197	0.4025	0.4115	AVRG		2.20135		0.4543	9	15	0.100	0.99	
Trichlorofluoromethane		0.9266	0.8918	0.8934	0.7925	0.8509	0.7560	0.7660	0.7547	AVRG		1.20628		0.8290	8	15	0.100	0.99	
Acetone					0.1253	0.1173	0.1009	0.0988	0.0912	AVRG		9.37147		0.1067	13	15	0.100	0.99	
Freon 113		0.4516	0.4408	0.3838	0.3133	0.3629	0.3697	0.3676	0.3779	AVRG		2.60781		0.3835	12	15	0.100	0.99	
1,1-Dichloroethene		0.4474	0.4412	0.3831	0.3641	0.3812	0.3783	0.3744	0.3850	AVRG		2.53584		0.3943	8	15	0.100	0.99	
Methylene Chloride		0.5494	0.5419	0.5096	0.5224	0.5092	0.4725	0.4693	0.4867	AVRG		1.96998		0.5076	6	15	0.100	0.99	
Carbon Disulfide		1.9206	1.8268	1.6855	1.5744	1.6561	1.6287	1.5930	1.6540	AVRG		0.59088		1.6924	7	15	0.100	0.99	
MTBE		1.0283	0.9704	0.9057	0.9460	0.9147	0.8685	0.8049	0.8488	AVRG		1.09780		0.9109	8	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5061	0.4780	0.4547	0.4449	0.4560	0.4366	0.4309	0.4498	AVRG		2.18771		0.4571	5	15	0.100	0.99	
Vinyl Acetate			0.9013	0.8434	0.8447m	0.8124	0.8086	0.7391	0.7099	AVRG		1.23685		0.8085	8	15	0.05	0.99	
1,1-Dichloroethane		1.1778	1.1309	1.0599	1.0637	1.0344	0.9859	0.9304	0.9196	AVRG		0.96354		1.0378	9	15	0.200	0.99	
2-Butanone				0.1789m	0.1844m	0.1720	0.1528	0.1441	0.1430	AVRG		6.15295		0.1625	11	15	0.100	0.99	
2,2-Dichloropropane		0.8777	0.8404	0.7520	0.7256	0.7140	0.6927	0.6436	0.6415	AVRG		1.35883		0.7359	12	15	0.05	0.99	
cis-1,2-Dichloroethene		0.5377	0.5208	0.4903	0.5051	0.5124	0.4938	0.4903	0.4998	AVRG		1.97523		0.5063	3	15	0.100	0.99	
Chloroform		1.0887	1.0251	0.9871	0.9904	0.9670	0.9210	0.8761	0.8819	AVRG		1.03394		0.9672	7	15	0.200	0.99	
Bromochloromethane		0.2495	0.2350	0.2228	0.2367	0.2303	0.2308	0.2306	0.2362	AVRG		4.27375		0.2340	3	15	0.05	0.99	
1,1,1-Trichloroethane		0.9251	0.8694	0.7549	0.7266	0.7538	0.7030	0.6554	0.6447	AVRG		1.32609		0.7541	13	15	0.100	0.99	
1,1-Dichloropropene		0.5433	0.4687	0.4309	0.4143	0.4334	0.4352	0.4324	0.4234	AVRG		2.23364		0.4477	9	15	0.05	0.99	
Carbon Tetrachloride		0.4543	0.4462	0.3967	0.3820	0.4058	0.4043	0.3907	0.4003	AVRG		2.43872		0.4101	6	15	0.100	0.99	
1,2-Dichloroethane		0.4570	0.4412	0.4005	0.4380	0.4223	0.3959	0.3688	0.3572	AVRG		2.43833		0.4101	9	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.2719	1.1909	1.1415	1.1618	1.1768	1.1616	1.1345	1.1345	AVRG		0.85347		1.1717	4	15	0.500	0.99	
Trichloroethene		0.3438	0.3238	0.3025	0.2899	0.3037	0.2998	0.3034	0.3086	AVRG		3.23179		0.3094	5	15	0.200	0.99	
1,2-Dichloropropane		0.4042	0.3727	0.3520	0.3678	0.3647	0.3575	0.3448	0.3469	AVRG		2.74868		0.3638	5	15	0.100	0.99	
Bromodichloromethane		0.4517	0.4301	0.4195	0.4485	0.4405	0.4356	0.4114	0.4210	AVRG		2.31329		0.4323	3	15	0.200	0.99	
Dibromomethane		0.1828	0.1777	0.1761	0.1830	0.1781	0.1774	0.1713	0.1713	AVRG		5.64265		0.1772	2	15	0.05	0.99	
4-Methyl-2-Pentanone				0.2363	0.2522	0.2397	0.2329	0.2180	0.2203	AVRG		4.28742		0.2332	5	15	0.100	0.99	
cis-1,3-Dichloropropene		0.4907	0.4789	0.4503	0.4869	0.4865	0.4935	0.4771	0.4633	AVRG		2.09036		0.4784	3	15	0.200	0.99	
Toluene		0.7808	0.7551	0.7291	0.7092	0.7357	0.7898	0.7038	0.6966	AVRG		1.35591		0.7375	5	15	0.400	0.99	
trans-1,3-Dichloropropene		0.4597	0.4333	0.4395	0.4494	0.4452	0.4546	0.4309	0.4297	AVRG		2.25839		0.4428	3	15	0.100	0.99	
1,1,2-Trichloroethane		0.1161	0.1189	0.1260	0.1325	0.1270	0.1282	0.1278	0.1301	AVRG		7.94672		0.1258	4	15	0.100	0.99	
2-Hexanone				0.1896	0.2000	0.1928	0.1863	0.1825	0.1756	AVRG		5.32480		0.1878	4	15	0.100	0.99	
1,3-Dichloropropane		0.4358	0.4038	0.3887	0.4103	0.3997	0.4115	0.4038	0.3983	AVRG		2.46008		0.4065	3	15	0.05	0.99	
Tetrachloroethene		0.3060	0.2788	0.2574	0.2532	0.2703	0.2900	0.3042	0.3181	AVRG		3.51202		0.2847	8	15	0.200	0.99	
Dibromochloromethane		0.2617	0.2811	0.2852	0.2973	0.3028	0.3129	0.3166	0.3233	AVRG		3.36012		0.2976	7	15	0.100	0.99	
1,2-Dibromoethane		0.2322	0.2216	0.2167	0.2330	0.2274	0.2308	0.2312	0.2365	AVRG		4.37318		0.2287	3	15	0.100	0.99	
Chlorobenzene		0.8902	0.8061	0.7658	0.8022	0.8092	0.8475	0.7970	0.8509	AVRG		1.21786		0.8211	5	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3005	0.2887	0.2885	0.3093	0.3073	0.3322	0.3303	0.3314	AVRG		3.21520		0.3110	6	15	0.05	0.99	
Ethylbenzene		1.5424	1.4178	1.3655	1.3606	1.4054	1.5201	1.4634	1.4252	AVRG		0.69563		1.4375	5	15	0.100	0.99	
m,p-Xylenes	0.5300	0.4926	0.4844	0.4759	0.4728	0.5243	0.5442	0.5198	0.4742	AVRG		1.99190		0.5020	5	15	0.100	0.99	
o-Xylene		0.4862	0.4758	0.4691	0.4611	0.4912	0.5411	0.5121	0.5130	AVRG		2.02550		0.4937	5	15	0.300	0.99	
Styrene		0.7481	0.7797	0.7989	0.8092	0.8820	0.8714	0.7329	0.7298	AVRG		1.25946		0.7940	7	15	0.300	0.99	
Bromoform		0.1202	0.1277	0.1346	0.1510	0.1604	0.1722			AVRG		6.92676		0.1444	14	15	0.100	0.99	
Isopropylbenzene		2.6387	2.5460	2.3177	2.2775	2.4711	2.5384	2.4757	2.3593	AVRG		0.40765		2.4531	5	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.5434	0.4928	0.4839	0.4921	0.4869	0.4694	0.4740	0.4692	AVRG		2.04512		0.4890	5	15	0.300	0.99	
1,2,3-Trichloropropane		0.1113	0.1097	0.1143	0.1161	0.1151	0.1174	0.1193	0.1102	AVRG		8.75751		0.1142	3	15	0.05	0.99	
Propylbenzene		3.4780	3.1989	2.9912	2.6888	3.0160	3.0118	2.8107	2.6131	AVRG		0.33601		2.9761	9	15	0.05	0.99	
Bromobenzene		0.6356	0.6028	0.6117	0.6139	0.6471	0.6995	0.6873	0.6497	AVRG		1.55413		0.6434	5	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.1558	2.0613	1.9250	1.9030	1.9268	1.9589	1.9008	1.7172	AVRG		0.51451		1.9436	7	15	0.05	0.99	
2-Chlorotoluene		2.3248	2.2157	2.0843	2.0248	2.0289	1.9443	1.8629	1.6931	AVRG		0.49448		2.0223	10	15	0.05	0.99	
4-Chlorotoluene		2.0603	1.9210	1.8486	1.7922	1.7785	1.9025	1.7886	1.7498	AVRG		0.53903		1.8552	6	15	0.05	0.99	
tert-Butylbenzene		1.7452	1.7453	1.5931	1.5102	1.6336	1.7629	1.7935	1.7091	AVRG		0.59291		1.6866	6	15	0.05	0.99	
1,2,4-Trimethylbenzene		1.9650	2.0111	1.8972	1.8755	1.8802	2.0229	1.8894	1.8653	AVRG		0.51925		1.9258	3	15	0.05	0.99	
sec-Butylbenzene		2.6336	2.5834	2.4127	2.2117	2.4269	2.6807	2.6479	2.5521	AVRG		0.39704		2.5186	6	15	0.05	0.99	
para-Isopropyl Toluene		1.9652	1.9373	1.8083	1.6544	1.8685	2.0534	1.9723	1.9666	AVRG		0.52542		1.9032	7	15	0.05	0.99	
1,3-Dichlorobenzene		1.0908	1.0254	0.9804	1.0120	1.0442	1.1274	1.1969	1.1821	AVRG		0.92387		1.0824	7	15	0.600	0.99	
1,4-Dichlorobenzene		1.2126	1.1003	1.0731	1.0813	1.1114	1.1291	1.1544	1.1496	AVRG		0.88773		1.1265	4	15	0.500	0.99	
n-Butylbenzene		2.0226	1.8854	1.6866	1.5564	1.6771	1.7684	1.8237	1.6974	AVRG		0.56667		1.7647	8	15	0.05	0.99	
1,2-Dichlorobenzene		1.0183	0.9661	0.9315	0.9287	0.9089	0.9959	1.0485	1.0610	AVRG		1.01796		0.9824	6	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane			0.0720	0.0759	0.0760	0.0797	0.0754	0.0753	0.0730	AVRG		13.2772		0.0753	3	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.5224	0.4755	0.4535	0.4367	0.4725	0.4796	0.5037	0.5299	AVRG		2.06517		0.4842	7	15	0.200	0.99	
Hexachlorobutadiene		0.2693	0.2630	0.2204	0.2103	0.2332	0.2440	0.2642	0.2691	AVRG		4.05386		0.2467	9	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		0.8151	0.7628	0.7478	0.7542	0.7943	0.7789	0.8153	0.8463	AVRG		1.26688		0.7893	4	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.4428	0.4119	0.3943	0.3982	0.4187	0.4258	0.4441	0.4612	AVRG		2.35501		0.4246	6	15	0.05	0.99	
Dibromofluoromethane	0.6868	0.6789	0.6843	0.6726	0.6651	0.6678	0.6353	0.6092	0.6036	AVRG		1.52449		0.6560	5	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3951	0.3944	0.3953	0.3913	0.3786	0.3828	0.3381	0.3084	0.2890	AVRG		2.74978		0.3637	11	15	0.05	0.99	
Toluene-d8	1.3774	1.4049	1.3863	1.3636	1.3956	1.3798	1.3651	1.3614	1.3608	AVRG		0.72611		1.3772	1	15	0.05	0.99	
Bromofluorobenzene	1.0471	1.0449	1.0348	1.0110	0.9983	0.9760	0.9224	0.9355	0.9218	AVRG		1.01217		0.9880	5	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	14	2.0000	7	5.0000	12	10.000	-10	20.000	8	50.000	-11	75.000	-8	100.00	-11
Chloromethane	0.5000	-11	1.0000	-9	2.0000	-1	5.0000	0	10.000	1	20.000	1	50.000	-1	75.000	0		
Vinyl Chloride	0.5000	19	1.0000	9	2.0000	12	5.0000	6	10.000	2	20.000	3	50.000	-13	75.000	-19	100.00	-19
Bromomethane	0.5000	-5	1.0000	-11	2.0000	-16	5.0000	-13	10.000	0	20.000	6	50.000	11	75.000	13	100.00	16
Chloroethane			1.0000	10	2.0000	12	5.0000	1	10.000	4	20.000	0	50.000	-8	75.000	-11	100.00	-9
Trichlorofluoromethane			1.0000	12	2.0000	8	5.0000	8	10.000	-4	20.000	3	50.000	-9	75.000	-8	100.00	-9
Acetone									10.000	17	20.000	10	50.000	-5	75.000	-7	100.00	-15
Freon 113			0.5000	18	2.0000	15	5.0000	0	10.000	-18	20.000	-5	50.000	-4	75.000	-4	100.00	-1
1,1-Dichloroethene			0.5000	13	2.0000	12	5.0000	-3	10.000	-8	20.000	-3	50.000	-4	75.000	-5	100.00	-2
Methylene Chloride			0.5000	8	2.0000	7	5.0000	0	10.000	3	20.000	0	50.000	-7	75.000	-8	100.00	-4
Carbon Disulfide			0.5000	13	2.0000	8	5.0000	0	10.000	-7	20.000	-2	50.000	-4	75.000	-6	100.00	-2
MTBE			0.5000	13	2.0000	7	5.0000	-1	10.000	4	20.000	0	50.000	-5	75.000	-12	100.00	-7
trans-1,2-Dichloroethene			0.5000	11	2.0000	5	5.0000	-1	10.000	-3	20.000	0	50.000	-4	75.000	-6	100.00	-2
Vinyl Acetate					2.0000	11	5.0000	4	10.000	4	20.000	0	50.000	0	75.000	-9	100.00	-12
1,1-Dichloroethane			0.5000	13	2.0000	9	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-10	100.00	-11
2-Butanone							5.0000	10	10.000	13	20.000	6	50.000	-6	75.000	-11	100.00	-12
2,2-Dichloropropane			0.5000	19	2.0000	14	5.0000	2	10.000	-1	20.000	-3	50.000	-6	75.000	-13	100.00	-13
cis-1,2-Dichloroethene			0.5000	6	2.0000	3	5.0000	-3	10.000	0	20.000	1	50.000	-2	75.000	-3	100.00	-1
Chloroform			0.5000	13	2.0000	6	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-9	100.00	-9
Bromochloromethane			0.5000	7	2.0000	0	5.0000	-5	10.000	1	20.000	-2	50.000	-1	75.000	-1	100.00	1
1,1,1-Trichloroethane			0.5000	**23**	2.0000	15	5.0000	0	10.000	-4	20.000	0	50.000	-7	75.000	-13	100.00	-15
1,1-Dichloropropene			0.5000	**21**	2.0000	5	5.0000	-4	10.000	-7	20.000	-3	50.000	-3	75.000	-3	100.00	-5
Carbon Tetrachloride			0.5000	11	2.0000	9	5.0000	-3	10.000	-7	20.000	-1	50.000	-1	75.000	-5	100.00	-2
1,2-Dichloroethane			0.5000	11	2.0000	8	5.0000	-2	10.000	7	20.000	3	50.000	-3	75.000	-10	100.00	-13
Benzene			0.5000	9	2.0000	2	5.0000	-3	10.000	-1	20.000	0	50.000	-1	75.000	-3	100.00	-3
Trichloroethene			0.5000	11	2.0000	5	5.0000	-2	10.000	-6	20.000	-2	50.000	-3	75.000	-2	100.00	0
1,2-Dichloropropane			0.5000	11	2.0000	2	5.0000	-3	10.000	1	20.000	0	50.000	-2	75.000	-5	100.00	-5
Bromodichloromethane			0.5000	4	2.0000	-1	5.0000	-3	10.000	4	20.000	2	50.000	1	75.000	-5	100.00	-3
Dibromomethane			0.5000	3	2.0000	0	5.0000	-1	10.000	3	20.000	0	50.000	0	75.000	-3	100.00	-3
4-Methyl-2-Pentanone							5.0000	1	10.000	8	20.000	3	50.000	0	75.000	-7	100.00	-6
cis-1,3-Dichloropropene			0.5000	3	2.0000	0	5.0000	-6	10.000	2	20.000	2	50.000	3	75.000	0	100.00	-3
Toluene			0.5000	6	2.0000	2	5.0000	-1	10.000	-4	20.000	0	50.000	7	75.000	-5	100.00	-6
trans-1,3-Dichloropropene			0.5000	4	2.0000	-2	5.0000	-1	10.000	1	20.000	1	50.000	3	75.000	-3	100.00	-3
1,1,2-Trichloroethane			0.5000	-8	2.0000	-5	5.0000	0	10.000	5	20.000	1	50.000	2	75.000	2	100.00	3
2-Hexanone							5.0000	1	10.000	6	20.000	3	50.000	-1	75.000	-3	100.00	-7
1,3-Dichloropropane			0.5000	7	2.0000	-1	5.0000	-4	10.000	1	20.000	-2	50.000	1	75.000	-1	100.00	-2
Tetrachloroethene			0.5000	7	2.0000	-2	5.0000	-10	10.000	-11	20.000	-5	50.000	2	75.000	7	100.00	12
Dibromochloromethane			0.5000	-12	2.0000	-6	5.0000	-4	10.000	0	20.000	2	50.000	5	75.000	6	100.00	9
1,2-Dibromoethane			0.5000	2	2.0000	-3	5.0000	-5	10.000	2	20.000	-1	50.000	1	75.000	1	100.00	3
Chlorobenzene			0.5000	8	2.0000	-2	5.0000	-7	10.000	-2	20.000	-1	50.000	3	75.000	-3	100.00	4
1,1,1,2-Tetrachloroethane			0.5000	-3	2.0000	-7	5.0000	-7	10.000	-1	20.000	-1	50.000	7	75.000	6	100.00	7
Ethylbenzene			0.5000	7	2.0000	-1	5.0000	-5	10.000	-5	20.000	-2	50.000	6	75.000	2	100.00	-1

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	6	1.0000	-2	4.0000	-4	10.000	-5	20.000	-6	40.000	4	100.00	8	150.00	4	200.00	-6
o-Xylene			0.5000	-2	2.0000	-4	5.0000	-5	10.000	-7	20.000	-1	50.000	10	75.000	4	100.00	4
Styrene			0.5000	-6	2.0000	-2	5.0000	1	10.000	2	20.000	11	50.000	10	75.000	-8	100.00	-8
Bromoform			0.5000	-17	2.0000	-12	5.0000	-7	10.000	5	20.000	11	50.000	19				
Isopropylbenzene			0.5000	8	2.0000	4	5.0000	-6	10.000	-7	20.000	1	50.000	3	75.000	1	100.00	-4
1,1,2,2-Tetrachloroethane			0.5000	11	2.0000	1	5.0000	-1	10.000	1	20.000	0	50.000	-4	75.000	-3	100.00	-4
1,2,3-Trichloropropane			0.5000	-3	2.0000	-4	5.0000	0	10.000	2	20.000	1	50.000	3	75.000	5	100.00	-3
Propylbenzene			0.5000	17	2.0000	7	5.0000	1	10.000	-10	20.000	1	50.000	1	75.000	-6	100.00	-12
Bromobenzene			0.5000	-1	2.0000	-6	5.0000	-5	10.000	-5	20.000	1	50.000	9	75.000	7	100.00	1
1,3,5-Trimethylbenzene			0.5000	11	2.0000	6	5.0000	-1	10.000	-2	20.000	-1	50.000	1	75.000	-2	100.00	-12
2-Chlorotoluene			0.5000	15	2.0000	10	5.0000	3	10.000	0	20.000	0	50.000	-4	75.000	-8	100.00	-16
4-Chlorotoluene			0.5000	11	2.0000	4	5.0000	0	10.000	-3	20.000	-4	50.000	3	75.000	-4	100.00	-6
tert-Butylbenzene			0.5000	3	2.0000	3	5.0000	-6	10.000	-10	20.000	-3	50.000	5	75.000	6	100.00	1
1,2,4-Trimethylbenzene			0.5000	2	2.0000	4	5.0000	-1	10.000	-3	20.000	-2	50.000	5	75.000	-2	100.00	-3
sec-Butylbenzene			0.5000	5	2.0000	3	5.0000	-4	10.000	-12	20.000	-4	50.000	6	75.000	5	100.00	1
para-Isopropyl Toluene			0.5000	3	2.0000	2	5.0000	-5	10.000	-13	20.000	-2	50.000	8	75.000	4	100.00	3
1,3-Dichlorobenzene			0.5000	1	2.0000	-5	5.0000	-9	10.000	-7	20.000	-4	50.000	4	75.000	11	100.00	9
1,4-Dichlorobenzene			0.5000	8	2.0000	-2	5.0000	-5	10.000	-4	20.000	-1	50.000	0	75.000	2	100.00	2
n-Butylbenzene			0.5000	15	2.0000	7	5.0000	-4	10.000	-12	20.000	-5	50.000	0	75.000	3	100.00	-4
1,2-Dichlorobenzene			0.5000	4	2.0000	-2	5.0000	-5	10.000	-5	20.000	-7	50.000	1	75.000	7	100.00	8
1,2-Dibromo-3-Chloropropane					2.0000	-4	5.0000	1	10.000	1	20.000	6	50.000	0	75.000	0	100.00	-3
1,2,4-Trichlorobenzene			0.5000	8	2.0000	-2	5.0000	-6	10.000	-10	20.000	-2	50.000	-1	75.000	4	100.00	9
Hexachlorobutadiene			0.5000	9	2.0000	7	5.0000	-11	10.000	-15	20.000	-5	50.000	-1	75.000	7	100.00	9
Naphthalene			0.5000	3	2.0000	-3	5.0000	-5	10.000	-4	20.000	1	50.000	-1	75.000	3	100.00	7
1,2,3-Trichlorobenzene			0.5000	4	2.0000	-3	5.0000	-7	10.000	-6	20.000	-1	50.000	0	75.000	5	100.00	9
Dibromofluoromethane	50.000	5	50.000	3	50.000	4	50.000	3	50.000	1	50.000	2	50.000	-3	50.000	-7	50.000	-8
1,2-Dichloroethane-d4	50.000	9	50.000	8	50.000	9	50.000	8	50.000	4	50.000	5	50.000	-7	50.000	-15	50.000	**-21**
Toluene-d8	50.000	0	50.000	2	50.000	1	50.000	-1	50.000	1	50.000	0	50.000	-1	50.000	-1	50.000	-1
Bromofluorobenzene	50.000	6	50.000	6	50.000	5	50.000	2	50.000	1	50.000	-1	50.000	-7	50.000	-5	50.000	-7

DAR 07/08/15 [Vinyl Acetate]: Combined split peak in 10PPB (ig711).

DAR 07/08/15 [2-Butanone]: Combined split peak in multiple levels.

Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; QUAD=Quadratic regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Cal Date : 07-JUL-2015 Type : WATER

ICV 485271359016 (ig716 07-JUL-2015) stds: S26358 (10000X), S27403 (5000X)
ICV 485271359017 (ig717 07-JUL-2015) stds: S27558 (10000X), S27556 (10000X), S27533 (10000X), S27403 (5000X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	485271359016	20.00	14.29	ug/L	**-29**	20	v- ***
Chloromethane	485271359016	20.00	16.82	ug/L	-16	20	
Vinyl Chloride	485271359016	20.00	16.27	ug/L	-19	20	
Bromomethane	485271359016	20.00	17.31	ug/L	-13	20	
Chloroethane	485271359016	20.00	18.80	ug/L	-6	20	
Trichlorofluoromethane	485271359016	20.00	17.41	ug/L	-13	20	
Acetone	485271359017	25.00	22.76	ug/L	-9	20	
Freon 113	485271359017	25.00	21.56	ug/L	-14	20	
1,1-Dichloroethene	485271359017	25.00	23.34	ug/L	-7	20	
Methylene Chloride	485271359017	25.00	23.47	ug/L	-6	20	
Carbon Disulfide	485271359017	25.00	21.03	ug/L	-16	20	
MTBE	485271359017	25.00	22.99	ug/L	-8	20	
trans-1,2-Dichloroethene	485271359017	25.00	24.14	ug/L	-3	20	
Vinyl Acetate	485271359017	25.00	26.60	ug/L	6	20	
1,1-Dichloroethane	485271359017	25.00	22.68	ug/L	-9	20	
2-Butanone	485271359017	25.00	22.78	ug/L	-9	20	
2,2-Dichloropropane	485271359017	25.00	22.39	ug/L	-10	20	
cis-1,2-Dichloroethene	485271359017	25.00	24.75	ug/L	-1	20	
Chloroform	485271359017	25.00	23.52	ug/L	-6	20	
Bromochloromethane	485271359017	25.00	24.56	ug/L	-2	20	
1,1,1-Trichloroethane	485271359017	25.00	23.24	ug/L	-7	20	
1,1-Dichloropropene	485271359017	25.00	23.49	ug/L	-6	20	
Carbon Tetrachloride	485271359017	25.00	24.64	ug/L	-1	20	
1,2-Dichloroethane	485271359017	25.00	23.61	ug/L	-6	20	
Benzene	485271359017	25.00	24.51	ug/L	-2	20	
Trichloroethene	485271359017	25.00	24.18	ug/L	-3	20	
1,2-Dichloropropane	485271359017	25.00	22.46	ug/L	-10	20	
Bromodichloromethane	485271359017	25.00	23.36	ug/L	-7	20	
Dibromomethane	485271359017	25.00	24.06	ug/L	-4	20	
4-Methyl-2-Pentanone	485271359017	25.00	23.54	ug/L	-6	20	
cis-1,3-Dichloropropene	485271359017	25.00	23.93	ug/L	-4	20	
Toluene	485271359017	25.00	26.13	ug/L	5	20	
trans-1,3-Dichloropropene	485271359017	25.00	22.36	ug/L	-11	20	
1,1,2-Trichloroethane	485271359017	25.00	24.68	ug/L	-1	20	
2-Hexanone	485271359017	25.00	24.97	ug/L	0	20	
1,3-Dichloropropane	485271359017	25.00	25.33	ug/L	1	20	
Tetrachloroethene	485271359017	25.00	26.39	ug/L	6	20	
Dibromochloromethane	485271359017	25.00	25.02	ug/L	0	20	
1,2-Dibromoethane	485271359017	25.00	24.56	ug/L	-2	20	
Chlorobenzene	485271359017	25.00	25.69	ug/L	3	20	
1,1,1,2-Tetrachloroethane	485271359017	25.00	24.85	ug/L	-1	20	
Ethylbenzene	485271359017	25.00	25.96	ug/L	4	20	
m,p-Xylenes	485271359017	50.00	54.43	ug/L	9	20	
o-Xylene	485271359017	25.00	26.06	ug/L	4	20	
Styrene	485271359017	25.00	28.24	ug/L	13	20	
Bromoform	485271359017	25.00	27.85	ug/L	11	20	
Isopropylbenzene	485271359017	25.00	26.53	ug/L	6	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	485271359017	25.00	24.86	ug/L	-1	20	
1,2,3-Trichloropropane	485271359017	25.00	25.68	ug/L	3	20	
Propylbenzene	485271359017	25.00	26.48	ug/L	6	20	
Bromobenzene	485271359017	25.00	26.98	ug/L	8	20	
1,3,5-Trimethylbenzene	485271359017	25.00	28.15	ug/L	13	20	
2-Chlorotoluene	485271359017	25.00	26.64	ug/L	7	20	
4-Chlorotoluene	485271359017	25.00	25.74	ug/L	3	20	
tert-Butylbenzene	485271359017	25.00	26.83	ug/L	7	20	
1,2,4-Trimethylbenzene	485271359017	25.00	27.02	ug/L	8	20	
sec-Butylbenzene	485271359017	25.00	25.87	ug/L	3	20	
para-Isopropyl Toluene	485271359017	25.00	26.43	ug/L	6	20	
1,3-Dichlorobenzene	485271359017	25.00	26.43	ug/L	6	20	
1,4-Dichlorobenzene	485271359017	25.00	26.16	ug/L	5	20	
n-Butylbenzene	485271359017	25.00	25.97	ug/L	4	20	
1,2-Dichlorobenzene	485271359017	25.00	26.50	ug/L	6	20	
1,2-Dibromo-3-Chloropropane	485271359017	25.00	24.31	ug/L	-3	20	
1,2,4-Trichlorobenzene	485271359017	25.00	26.13	ug/L	5	20	
Hexachlorobutadiene	485271359017	25.00	26.11	ug/L	4	20	
Naphthalene	485271359017	25.00	23.59	ug/L	-6	20	
1,2,3-Trichlorobenzene	485271359017	25.00	26.60	ug/L	6	20	

485271359016: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15
485271359017: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

-=low bias v=ICV

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 MSVOA Water: EPA 8260C

Inst : MSVOA11 Name : 8260GX11
Calnum : 835169070002 Date : 28-APR-2015 15:17 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	kdr13	835169070013	.25/5PPB	28-APR-2015 15:17	S25695 (2000000X), S26948 (2000000X), S27151 (2000000X), S26957 (1000000X), S26882 (2500X)
L2	kdr14	835169070014	.5/1PPB	28-APR-2015 15:45	S25695 (1000000X), S26948 (1000000X), S27151 (1000000X), S26957 (500000X), S26882 (2500X)
L3	kdr15	835169070015	2PPB	28-APR-2015 16:12	S25695 (500000X), S26948 (250000X), S27151 (250000X), S26957 (250000X), S26882 (2500X)
L4	kdr16	835169070016	5PPB	28-APR-2015 16:40	S25695 (200000X), S26948 (100000X), S27151 (100000X), S26957 (100000X), S26882 (2500X)
L5	kdr17	835169070017	10PPB	28-APR-2015 17:08	S25695 (100000X), S26948 (50000X), S27151 (50000X), S26957 (50000X), S26882 (2500X)
L6	kdr18	835169070018	20PPB	28-APR-2015 17:36	S25695 (50000X), S26948 (25000X), S27151 (25000X), S26957 (25000X), S26882 (2500X)
L7	kdr19	835169070019	50PPB	28-APR-2015 18:04	S25695 (20000X), S26948 (10000X), S27151 (10000X), S26957 (10000X), S26882 (2500X)
L8	kdr20	835169070020	75PPB	28-APR-2015 18:31	S25695 (13330X), S26948 (6667X), S27151 (6667X), S26957 (6667X), S26882 (2500X)
L9	kdr21	835169070021	100PPB	28-APR-2015 18:59	S25695 (10000X), S26948 (5000X), S27151 (5000X), S26957 (5000X), S26882 (2500X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.5410m	0.5069m	0.5832m	0.5492m	0.5593	0.5161	0.5512	0.5428m	AVRG		1.83925		0.5437	4	15	0.100	0.99	
Chloromethane	0.7173	0.6821	0.6732	0.6491	0.6526	0.6089	0.5580	0.5441	0.5286	AVRG		1.60316		0.6238	11	15	0.100	0.99	
Vinyl Chloride	0.5829	0.6361	0.5792	0.6074	0.6078	0.5742	0.5437	0.5434	0.5353	AVRG		1.72749		0.5789	6	15	0.100	0.99	
Bromomethane		0.3040	0.3577	0.3333	0.3463	0.3182	0.2988	0.2847	0.3030	AVRG		3.14222		0.3182	8	15	0.100	0.99	
Chloroethane		0.3371	0.3035	0.3128	0.3295	0.3011	0.2851	0.2868	0.2860	AVRG		3.27625		0.3052	7	15	0.100	0.99	
Trichlorofluoromethane		0.7697	0.6969	0.7466	0.7412	0.7454	0.6724	0.7104	0.7171	AVRG		1.37941		0.7250	4	15	0.100	0.99	
Acetone			0.1731m	0.1543m	0.1533	0.1527m	0.1366	0.1299	0.1325	AVRG		6.77987		0.1475	10	15	0.100	0.99	
Freon 113			0.3577	0.3922	0.3303	0.3624	0.3672	0.3706	0.3830	AVRG		2.73053		0.3662	5	15	0.100	0.99	
1,1-Dichloroethene		0.4494	0.4181	0.4141	0.3829	0.3793	0.3649	0.3676	0.3704	AVRG		2.54231		0.3933	8	15	0.100	0.99	
Methylene Chloride		0.4938	0.4803	0.4729	0.4929	0.4662	0.4575	0.4565	0.4632	AVRG		2.11452		0.4729	3	15	0.100	0.99	
Carbon Disulfide		1.4826	1.3715	1.4068	1.3310	1.3273	1.3026	1.2980	1.3048	AVRG		0.73906		1.3531	5	15	0.100	0.99	
MTBE		1.5135	1.4723	1.4306	1.4587	1.4284	1.4280	1.4343	1.4521	AVRG		0.68859		1.4522	2	15	0.100	0.99	
trans-1,2-Dichloroethene		0.4912	0.4603	0.4510	0.4397	0.4272	0.4241	0.4252	0.4325	AVRG		2.25272		0.4439	5	15	0.100	0.99	
Vinyl Acetate			0.5970	0.7156	0.7417	0.7028	0.7767	0.7962	0.7609	AVRG		1.37501		0.7273	9	15	0.05	0.99	
1,1-Dichloroethane		0.8596	0.8660	0.8664	0.8589	0.8427	0.8365	0.8460	0.8652	AVRG		1.16937		0.8552	1	15	0.200	0.99	
2-Butanone			0.2225	0.2274m	0.2309m	0.2098	0.2178	0.2158	0.2133	AVRG		4.55257		0.2197	3	15	0.100	0.99	
2,2-Dichloropropane		0.4544	0.4401	0.4524	0.4364	0.4356	0.4337	0.4373	0.4440	AVRG		2.26375		0.4417	2	15	0.05	0.99	
cis-1,2-Dichloroethene		0.5333	0.5289	0.5205	0.5053	0.4885	0.4904	0.4946	0.5066	AVRG		1.96657		0.5085	3	15	0.100	0.99	
Chloroform		0.9497	0.8514	0.8502	0.8485	0.8385	0.8575	0.8572	0.8696	AVRG		1.15562		0.8653	4	15	0.200	0.99	
Bromochloromethane		0.2573	0.2653	0.2598	0.2561	0.2601	0.2584	0.2592	0.2609	AVRG		3.85123		0.2597	1	15	0.05	0.99	
1,1,1-Trichloroethane		0.7074	0.7243	0.7318	0.6975	0.6997	0.7288	0.7387	0.7602	AVRG		1.38206		0.7236	3	15	0.100	0.99	
1,1-Dichloropropene		0.4315	0.4178	0.4264	0.3970	0.3976	0.4149	0.4207	0.4739	AVRG		2.36696		0.4225	6	15	0.05	0.99	
Carbon Tetrachloride		0.4136	0.3821	0.3955	0.3656	0.3786	0.4042	0.4171	0.4751	AVRG		2.47533		0.4040	8	15	0.100	0.99	
1,2-Dichloroethane		0.4866	0.4703	0.4581	0.4858	0.4599	0.4685	0.4678	0.5193	AVRG		2.09630		0.4770	4	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.3304	1.2970	1.2933	1.2803	1.2601	1.2812	1.2949	1.4672	AVRG		0.76159		1.3130	5	15	0.500	0.99	
Trichloroethene		0.3368	0.3520	0.3302	0.3123	0.3121	0.3141	0.3145	0.3579	AVRG		3.04180		0.3288	6	15	0.200	0.99	
1,2-Dichloropropane		0.3587	0.3365	0.3277	0.3399	0.3201	0.3246	0.3226	0.3658	AVRG		2.96734		0.3370	5	15	0.100	0.99	
Bromodichloromethane		0.4268	0.4335	0.4291	0.4393	0.4327	0.4322	0.4370	0.4947	AVRG		2.26935		0.4407	5	15	0.200	0.99	
Dibromomethane		0.2205	0.2151	0.2167	0.2233	0.2090	0.2127	0.2130	0.2411	AVRG		4.56762		0.2189	5	15	0.05	0.99	
4-Methyl-2-Pentanone			0.3208	0.3091	0.3343	0.3161	0.3182	0.3245	0.3520	AVRG		3.07671		0.3250	4	15	0.100	0.99	
cis-1,3-Dichloropropene		0.5255	0.4757	0.4961	0.5016	0.4850	0.5069	0.5150	0.5806	AVRG		1.95770		0.5108	6	15	0.200	0.99	
Toluene		0.9854	0.9574	0.9539	0.9187	0.8832	0.9012	0.9124	0.9411	AVRG		1.07335		0.9317	4	15	0.400	0.99	
trans-1,3-Dichloropropene		0.5435	0.5295	0.5321	0.5469	0.5175	0.5413	0.5317	0.5409	AVRG		1.86764		0.5354	2	15	0.100	0.99	
1,1,2-Trichloroethane		0.1870	0.1982	0.1938	0.2011	0.1824	0.1845	0.1839	0.1829	AVRG		5.28462		0.1892	4	15	0.100	0.99	
2-Hexanone			0.2681	0.2606	0.2722	0.2557	0.2531	0.2470	0.2431	AVRG		3.88936		0.2571	4	15	0.100	0.99	
1,3-Dichloropropane		0.6241	0.5855	0.5764	0.6050	0.5673	0.5727	0.5514	0.5642	AVRG		1.72170		0.5808	4	15	0.05	0.99	
Tetrachloroethene		0.3669	0.3541	0.3655	0.3238	0.3269	0.3527	0.3500	0.3650	AVRG		2.85208		0.3506	5	15	0.200	0.99	
Dibromochloromethane		0.3881	0.3784	0.3696	0.4002	0.3821	0.3921	0.3875	0.3924	AVRG		2.58874		0.3863	2	15	0.100	0.99	
1,2-Dibromoethane		0.3846	0.3654	0.3486	0.3644	0.3450	0.3439	0.3385	0.3408	AVRG		2.82554		0.3539	5	15	0.100	0.99	
Chlorobenzene		1.1372	1.0586	1.0527	1.0400	1.0080	1.0566	1.0430	1.0926	AVRG		0.94244		1.0611	4	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3504	0.3208	0.3422	0.3580	0.3466	0.3736	0.3837	0.4975	AVRG		2.69098		0.3716	15	15	0.05	0.99	
Ethylbenzene		1.9064	1.7655	1.7902	1.6918	1.6827	1.8219	1.8276	2.1146	AVRG		0.54792		1.8251	8	15	0.100	0.99	
m,p-Xylenes	0.6969	0.6841	0.6468	0.6769	0.6471	0.6539	0.7346	0.8713		AVRG		1.42560		0.7015	11	15	0.100	0.99	
o-Xylene		0.6969	0.6526	0.6440	0.6299	0.6266	0.6841	0.7299		AVRG		1.50088		0.6663	6	15	0.300	0.99	
Styrene		1.1934	1.1065	1.1241	1.1258	1.1340	1.2709	1.5682		AVRG		0.82132		1.2176	14	15	0.300	0.99	
Bromoform		0.2430	0.2385	0.2423	0.2627	0.2605	0.2939	0.3469		AVRG		3.70788		0.2697	14	15	0.100	0.99	
Isopropylbenzene		3.6350	3.3259	3.4635	3.0050	3.0915	3.3083	2.5364	2.9994	AVRG		0.31540		3.1706	11	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.9274	0.8575	0.8282	0.8665	0.7799	0.7644			AVRG		1.19433		0.8373	7	15	0.300	0.99	
1,2,3-Trichloropropane	0.8739	1.0648	0.8883	0.8543	0.8513	0.8000	0.7935	0.6004		AVRG		1.18931		0.8408	15	15	0.05	0.99	
Propylbenzene	4.3546	4.3926	3.8923	4.1062	3.5111	3.6369	3.8315	2.5846		AVRG		0.26394		3.7887	15	15	0.05	0.99	
Bromobenzene		0.9671	0.9272	0.9233	0.8817	0.8696	0.8739	0.6889	0.9131	AVRG		1.13559		0.8806	10	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.9856	2.7466	2.8905	2.5155	2.6256	2.8170	2.3530	2.6853	AVRG		0.37004		2.7024	8	15	0.05	0.99	
2-Chlorotoluene		2.9335	2.6191	2.6968	2.4180	2.5119	2.6273	2.3792	2.4184	AVRG		0.38827		2.5755	7	15	0.05	0.99	
4-Chlorotoluene		2.7504	2.3382	2.4376	2.2101	2.2491	2.4249	2.2059	2.2444	AVRG		0.42417		2.3576	8	15	0.05	0.99	
tert-Butylbenzene		2.6241	2.4452	2.5289	2.1487	2.2421	2.4419	2.1775	2.4107	AVRG		0.42063		2.3774	7	15	0.05	0.99	
1,2,4-Trimethylbenzene		3.1733	2.9060	2.9411	2.6612	2.7576	3.0097	2.8361	2.5405	AVRG		0.35049		2.8532	7	15	0.05	0.99	
sec-Butylbenzene		3.6601	3.3608	3.6717	3.0122	3.2843	3.7332	3.3830	3.3211	AVRG		0.29169		3.4283	7	15	0.05	0.99	
para-Isopropyl Toluene		2.9859	2.7754	2.9400	2.5054	2.7409	3.1751	2.9533	2.8261	AVRG		0.34931		2.8628	7	15	0.05	0.99	
1,3-Dichlorobenzene		1.6472	1.5497	1.5293	1.4518	1.4509	1.5348	1.4846	1.5333	AVRG		0.65673		1.5227	4	15	0.600	0.99	
1,4-Dichlorobenzene		1.8581	1.6838	1.6556	1.5586	1.5469	1.6267	1.5906	1.5723	AVRG		0.61103		1.6366	6	15	0.500	0.99	
n-Butylbenzene		2.9667	2.5644	2.7113	2.2265	2.3907	2.6247	2.1945	2.2545	AVRG		0.40134		2.4916	11	15	0.05	0.99	
1,2-Dichlorobenzene		1.6164	1.4313	1.4333	1.3876	1.3448	1.3544	1.0508	1.2071	AVRG		0.73898		1.3532	12	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane			0.1439	0.1243	0.1339	0.1225	0.1094			AVRG		7.88590		0.1268	10	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.5541	0.4697	0.4806	0.4190	0.4054	0.3663			AVRG		2.22627		0.4492	15	15	0.200	0.99	
Hexachlorobutadiene		0.2802	0.2924	0.3284	0.2573	0.2699	0.2652			AVRG		3.54318		0.2822	9	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		0.9475	0.7576	0.7904	0.7437	0.7093	0.6038			AVRG		1.31802		0.7587	15	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.2045	0.2134	0.2159	0.1955	0.1938	0.1590			AVRG		5.07598		0.1970	11	15	0.05	0.99	
Dibromofluoromethane	0.4545	0.4479	0.4524	0.4549	0.4530	0.4607	0.4708	0.4665	0.4796	AVRG		2.17375		0.4600	2	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3828	0.3874	0.3902	0.3948	0.3979	0.4022	0.4217	0.4187	0.4739	AVRG		2.45250		0.4077	7	15	0.05	0.99	
Toluene-d8	1.4929	1.5129	1.4954	1.4926	1.4927	1.4717	1.4679	1.4387	1.4194	AVRG		0.67750		1.4760	2	15	0.05	0.99	
Bromofluorobenzene	0.9130	0.9406	0.9247	0.9054	0.9051	0.9057	0.8636	0.5774	0.6848	AVRG		1.18107		0.8467	15	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	0	2.0000	-7	5.0000	7	10.000	1	20.000	3	50.000	-5	75.000	1	100.00	0
Chloromethane	0.5000	15	1.0000	9	2.0000	8	5.0000	4	10.000	5	20.000	-2	50.000	-11	75.000	-13	100.00	-15
Vinyl Chloride	0.5000	1	1.0000	10	2.0000	0	5.0000	5	10.000	5	20.000	-1	50.000	-6	75.000	-6	100.00	-8
Bromomethane			1.0000	-4	2.0000	12	5.0000	5	10.000	9	20.000	0	50.000	-6	75.000	-11	100.00	-5
Chloroethane			1.0000	10	2.0000	-1	5.0000	2	10.000	8	20.000	-1	50.000	-7	75.000	-6	100.00	-6
Trichlorofluoromethane			1.0000	6	2.0000	-4	5.0000	3	10.000	2	20.000	3	50.000	-7	75.000	-2	100.00	-1
Acetone					2.0000	17	5.0000	5	10.000	4	20.000	4	50.000	-7	75.000	-12	100.00	-10
Freon 113					2.0000	-2	5.0000	7	10.000	-10	20.000	-1	50.000	0	75.000	1	100.00	5
1,1-Dichloroethene			0.5000	14	2.0000	6	5.0000	5	10.000	-3	20.000	-4	50.000	-7	75.000	-7	100.00	-6
Methylene Chloride			0.5000	4	2.0000	2	5.0000	0	10.000	4	20.000	-1	50.000	-3	75.000	-3	100.00	-2
Carbon Disulfide			0.5000	10	2.0000	1	5.0000	4	10.000	-2	20.000	-2	50.000	-4	75.000	-4	100.00	-4
MTBE			0.5000	4	2.0000	1	5.0000	-1	10.000	0	20.000	-2	50.000	-2	75.000	-1	100.00	0
trans-1,2-Dichloroethene			0.5000	11	2.0000	4	5.0000	2	10.000	-1	20.000	-4	50.000	-4	75.000	-4	100.00	-3
Vinyl Acetate					2.0000	-18	5.0000	-2	10.000	2	20.000	-3	50.000	7	75.000	9	100.00	5
1,1-Dichloroethane			0.5000	1	2.0000	1	5.0000	1	10.000	0	20.000	-1	50.000	-2	75.000	-1	100.00	1
2-Butanone					2.0000	1	5.0000	4	10.000	5	20.000	-4	50.000	-1	75.000	-2	100.00	-3
2,2-Dichloropropane			0.5000	3	2.0000	0	5.0000	2	10.000	-1	20.000	-1	50.000	-2	75.000	-1	100.00	1
cis-1,2-Dichloroethene			0.5000	5	2.0000	4	5.0000	2	10.000	-1	20.000	-4	50.000	-4	75.000	-3	100.00	0
Chloroform			0.5000	10	2.0000	-2	5.0000	-2	10.000	-2	20.000	-3	50.000	-1	75.000	-1	100.00	0
Bromochloromethane			0.5000	-1	2.0000	2	5.0000	0	10.000	-1	20.000	0	50.000	0	75.000	0	100.00	0
1,1,1-Trichloroethane			0.5000	-2	2.0000	0	5.0000	1	10.000	-4	20.000	-3	50.000	1	75.000	2	100.00	5
1,1-Dichloropropene			0.5000	2	2.0000	-1	5.0000	1	10.000	-6	20.000	-6	50.000	-2	75.000	0	100.00	12
Carbon Tetrachloride			0.5000	2	2.0000	-5	5.0000	-2	10.000	-9	20.000	-6	50.000	0	75.000	3	100.00	18
1,2-Dichloroethane			0.5000	2	2.0000	-1	5.0000	-4	10.000	2	20.000	-4	50.000	-2	75.000	-2	100.00	9
Benzene			0.5000	1	2.0000	-1	5.0000	-2	10.000	-2	20.000	-4	50.000	-2	75.000	-1	100.00	12
Trichloroethene			0.5000	2	2.0000	7	5.0000	0	10.000	-5	20.000	-5	50.000	-4	75.000	-4	100.00	9
1,2-Dichloropropane			0.5000	6	2.0000	0	5.0000	-3	10.000	1	20.000	-5	50.000	-4	75.000	-4	100.00	9
Bromodichloromethane			0.5000	-3	2.0000	-2	5.0000	-3	10.000	0	20.000	-2	50.000	-2	75.000	-1	100.00	12
Dibromomethane			0.5000	1	2.0000	-2	5.0000	-1	10.000	2	20.000	-5	50.000	-3	75.000	-3	100.00	10
4-Methyl-2-Pentanone					2.0000	-1	5.0000	-5	10.000	3	20.000	-3	50.000	-2	75.000	0	100.00	8
cis-1,3-Dichloropropene			0.5000	3	2.0000	-7	5.0000	-3	10.000	-2	20.000	-5	50.000	-1	75.000	1	100.00	14
Toluene			0.5000	6	2.0000	3	5.0000	2	10.000	-1	20.000	-5	50.000	-3	75.000	-2	100.00	1
trans-1,3-Dichloropropene			0.5000	2	2.0000	-1	5.0000	-1	10.000	2	20.000	-3	50.000	1	75.000	-1	100.00	1
1,1,2-Trichloroethane			0.5000	-1	2.0000	5	5.0000	2	10.000	6	20.000	-4	50.000	-2	75.000	-3	100.00	-3
2-Hexanone					2.0000	4	5.0000	1	10.000	6	20.000	-1	50.000	-2	75.000	-4	100.00	-5
1,3-Dichloropropane			0.5000	7	2.0000	1	5.0000	-1	10.000	4	20.000	-2	50.000	-1	75.000	-5	100.00	-3
Tetrachloroethene			0.5000	5	2.0000	1	5.0000	4	10.000	-8	20.000	-7	50.000	1	75.000	0	100.00	4
Dibromochloromethane			0.5000	0	2.0000	-2	5.0000	-4	10.000	4	20.000	-1	50.000	1	75.000	0	100.00	2
1,2-Dibromoethane			0.5000	9	2.0000	3	5.0000	-1	10.000	3	20.000	-3	50.000	-3	75.000	-4	100.00	-4
Chlorobenzene			0.5000	7	2.0000	0	5.0000	-1	10.000	-2	20.000	-5	50.000	0	75.000	-2	100.00	3
1,1,1,2-Tetrachloroethane			0.5000	-6	2.0000	-14	5.0000	-8	10.000	-4	20.000	-7	50.000	1	75.000	3	100.00	**34**
Ethylbenzene			0.5000	4	2.0000	-3	5.0000	-2	10.000	-7	20.000	-8	50.000	0	75.000	0	100.00	16

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	-1	1.0000	-2	4.0000	-8	10.000	-3	20.000	-8	40.000	-7	100.00	5	150.00	**24**		
o-Xylene			0.5000	5	2.0000	-2	5.0000	-3	10.000	-5	20.000	-6	50.000	3	75.000	10		
Styrene			0.5000	-2	2.0000	-9	5.0000	-8	10.000	-8	20.000	-7	50.000	4	75.000	**29**		
Bromoform			0.5000	-10	2.0000	-12	5.0000	-10	10.000	-3	20.000	-3	50.000	9	75.000	**29**		
Isopropylbenzene			0.5000	15	2.0000	5	5.0000	9	10.000	-5	20.000	-2	50.000	4	75.000	-20	100.00	-5
1,1,2,2-Tetrachloroethane			0.5000	11	2.0000	2	5.0000	-1	10.000	3	20.000	-7	50.000	-9				
1,2,3-Trichloropropane	0.2500	4	0.5000	**27**	2.0000	6	5.0000	2	10.000	1	20.000	-5	50.000	-6	75.000	**-29**		
Propylbenzene	0.2500	15	0.5000	16	2.0000	3	5.0000	8	10.000	-7	20.000	-4	50.000	1	75.000	**-32**		
Bromobenzene			0.5000	10	2.0000	5	5.0000	5	10.000	0	20.000	-1	50.000	-1	75.000	**-22**	100.00	4
1,3,5-Trimethylbenzene			0.5000	10	2.0000	2	5.0000	7	10.000	-7	20.000	-3	50.000	4	75.000	-13	100.00	-1
2-Chlorotoluene			0.5000	14	2.0000	2	5.0000	5	10.000	-6	20.000	-2	50.000	2	75.000	-8	100.00	-6
4-Chlorotoluene			0.5000	17	2.0000	-1	5.0000	3	10.000	-6	20.000	-5	50.000	3	75.000	-6	100.00	-5
tert-Butylbenzene			0.5000	10	2.0000	3	5.0000	6	10.000	-10	20.000	-6	50.000	3	75.000	-8	100.00	1
1,2,4-Trimethylbenzene			0.5000	11	2.0000	2	5.0000	3	10.000	-7	20.000	-3	50.000	5	75.000	-1	100.00	-11
sec-Butylbenzene			0.5000	7	2.0000	-2	5.0000	7	10.000	-12	20.000	-4	50.000	9	75.000	-1	100.00	-3
para-Isopropyl Toluene			0.5000	4	2.0000	-3	5.0000	3	10.000	-12	20.000	-4	50.000	11	75.000	3	100.00	-1
1,3-Dichlorobenzene			0.5000	8	2.0000	2	5.0000	0	10.000	-5	20.000	-5	50.000	1	75.000	-3	100.00	1
1,4-Dichlorobenzene			0.5000	14	2.0000	3	5.0000	1	10.000	-5	20.000	-5	50.000	-1	75.000	-3	100.00	-4
n-Butylbenzene			0.5000	19	2.0000	3	5.0000	9	10.000	-11	20.000	-4	50.000	5	75.000	-12	100.00	-10
1,2-Dichlorobenzene			0.5000	19	2.0000	6	5.0000	6	10.000	3	20.000	-1	50.000	0	75.000	**-22**	100.00	-11
1,2-Dibromo-3-Chloropropane					2.0000	13	5.0000	-2	10.000	6	20.000	-3	50.000	-14				
1,2,4-Trichlorobenzene			0.5000	**23**	2.0000	5	5.0000	7	10.000	-7	20.000	-10	50.000	-18				
Hexachlorobutadiene			0.5000	-1	2.0000	4	5.0000	16	10.000	-9	20.000	-4	50.000	-6				
Naphthalene			0.5000	**25**	2.0000	0	5.0000	4	10.000	-2	20.000	-7	50.000	-20				
1,2,3-Trichlorobenzene			0.5000	4	2.0000	8	5.0000	10	10.000	-1	20.000	-2	50.000	-19				
Dibromofluoromethane	50.000	-1	50.000	-3	50.000	-2	50.000	-1	50.000	-2	50.000	0	50.000	2	50.000	1	50.000	4
1,2-Dichloroethane-d4	50.000	-6	50.000	-5	50.000	-4	50.000	-3	50.000	-2	50.000	-1	50.000	3	50.000	3	50.000	16
Toluene-d8	50.000	1	50.000	2	50.000	1	50.000	1	50.000	1	50.000	0	50.000	-1	50.000	-3	50.000	-4
Bromofluorobenzene	50.000	8	50.000	11	50.000	9	50.000	7	50.000	7	50.000	7	50.000	2	50.000	**-32**	50.000	-19

DAR 04/29/15 [Freon 12]: Combined split peak in multiple levels.

DAR 04/29/15 [Acetone]: Corrected fronting or tailing peak integration in multiple levels.

DAR 04/29/15 [2-Butanone]: Combined split peak in multiple levels.

DAR 04/29/15 [Ethanol]: Combined split peak in multiple levels.

DAR 04/29/15 : multiple high points dropped, do not spike above 40 ppb

Analyst: DAR Date: 04/29/15 Reviewer: LW Date: 05/01/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

835169070002

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA11 Name : 8260GX11
Calnum : 835169070002 Cal Date : 28-APR-2015 Type : WATER

ICV 835169070022 (kdr22 28-APR-2015) stds: S26358 (10000X), S26882 (2500X)
ICV 835169070023 (kdr23 28-APR-2015) stds: S26876 (10000X), S27022 (10000X), S26759 (10000X), S26882 (2500X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	835169070022	20.00	18.14	ug/L	-9	20	m
Chloromethane	835169070022	20.00	18.06	ug/L	-10	20	
Vinyl Chloride	835169070022	20.00	19.64	ug/L	-2	20	
Bromomethane	835169070022	20.00	13.97	ug/L	**-30**	20	v- ***
Chloroethane	835169070022	20.00	18.41	ug/L	-8	20	
Trichlorofluoromethane	835169070022	20.00	19.17	ug/L	-4	20	
Acetone	835169070023	25.00	23.46	ug/L	-6	20	
Freon 113	835169070023	25.00	21.32	ug/L	-15	20	
1,1-Dichloroethene	835169070023	25.00	22.01	ug/L	-12	20	
Methylene Chloride	835169070023	25.00	23.99	ug/L	-4	20	
Carbon Disulfide	835169070023	25.00	22.96	ug/L	-8	20	
MTBE	835169070023	25.00	21.76	ug/L	-13	20	
trans-1,2-Dichloroethene	835169070023	25.00	23.50	ug/L	-6	20	
Vinyl Acetate	835169070023	25.00	25.67	ug/L	3	20	
1,1-Dichloroethane	835169070023	25.00	23.37	ug/L	-7	20	
2-Butanone	835169070023	25.00	23.24	ug/L	-7	20	
2,2-Dichloropropane	835169070023	25.00	23.51	ug/L	-6	20	
cis-1,2-Dichloroethene	835169070023	25.00	24.01	ug/L	-4	20	
Chloroform	835169070023	25.00	24.09	ug/L	-4	20	
Bromochloromethane	835169070023	25.00	24.74	ug/L	-1	20	
1,1,1-Trichloroethane	835169070023	25.00	25.41	ug/L	2	20	
1,1-Dichloropropene	835169070023	25.00	23.29	ug/L	-7	20	
Carbon Tetrachloride	835169070023	25.00	24.75	ug/L	-1	20	
1,2-Dichloroethane	835169070023	25.00	23.57	ug/L	-6	20	
Benzene	835169070023	25.00	24.23	ug/L	-3	20	
Trichloroethene	835169070023	25.00	24.56	ug/L	-2	20	
1,2-Dichloropropane	835169070023	25.00	23.84	ug/L	-5	20	
Bromodichloromethane	835169070023	25.00	23.57	ug/L	-6	20	
Dibromomethane	835169070023	25.00	23.75	ug/L	-5	20	
4-Methyl-2-Pentanone	835169070023	25.00	23.36	ug/L	-7	20	
cis-1,3-Dichloropropene	835169070023	25.00	22.89	ug/L	-8	20	
Toluene	835169070023	25.00	24.71	ug/L	-1	20	
trans-1,3-Dichloropropene	835169070023	25.00	22.73	ug/L	-9	20	
1,1,2-Trichloroethane	835169070023	25.00	23.82	ug/L	-5	20	
2-Hexanone	835169070023	25.00	24.23	ug/L	-3	20	
1,3-Dichloropropane	835169070023	25.00	24.78	ug/L	-1	20	
Tetrachloroethene	835169070023	25.00	25.28	ug/L	1	20	
Dibromochloromethane	835169070023	25.00	24.22	ug/L	-3	20	
1,2-Dibromoethane	835169070023	25.00	24.06	ug/L	-4	20	
Chlorobenzene	835169070023	25.00	24.79	ug/L	-1	20	
1,1,1,2-Tetrachloroethane	835169070023	25.00	24.01	ug/L	-4	20	
Ethylbenzene	835169070023	25.00	24.86	ug/L	-1	20	
m,p-Xylenes	835169070023	50.00	51.05	ug/L	2	20	
o-Xylene	835169070023	25.00	25.13	ug/L	1	20	
Styrene	835169070023	25.00	24.52	ug/L	-2	20	
Bromoform	835169070023	25.00	24.37	ug/L	-3	20	
Isopropylbenzene	835169070023	25.00	26.86	ug/L	7	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	835169070023	25.00	22.80	ug/L	-9	20	
1,2,3-Trichloropropane	835169070023	25.00	23.72	ug/L	-5	20	
Propylbenzene	835169070023	25.00	26.12	ug/L	4	20	
Bromobenzene	835169070023	25.00	25.61	ug/L	2	20	
1,3,5-Trimethylbenzene	835169070023	25.00	27.74	ug/L	11	20	
2-Chlorotoluene	835169070023	25.00	26.59	ug/L	6	20	
4-Chlorotoluene	835169070023	25.00	26.48	ug/L	6	20	
tert-Butylbenzene	835169070023	25.00	26.53	ug/L	6	20	
1,2,4-Trimethylbenzene	835169070023	25.00	25.76	ug/L	3	20	
sec-Butylbenzene	835169070023	25.00	26.71	ug/L	7	20	
para-Isopropyl Toluene	835169070023	25.00	26.44	ug/L	6	20	
1,3-Dichlorobenzene	835169070023	25.00	25.43	ug/L	2	20	
1,4-Dichlorobenzene	835169070023	25.00	24.98	ug/L	0	20	
n-Butylbenzene	835169070023	25.00	26.58	ug/L	6	20	
1,2-Dichlorobenzene	835169070023	25.00	25.71	ug/L	3	20	
1,2-Dibromo-3-Chloropropane	835169070023	25.00	19.80	ug/L	**-21**	20	v- ***
1,2,4-Trichlorobenzene	835169070023	25.00	20.81	ug/L	-17	20	
Hexachlorobutadiene	835169070023	25.00	24.95	ug/L	0	20	
Naphthalene	835169070023	25.00	18.16	ug/L	**-27**	20	v- ***
1,2,3-Trichlorobenzene	835169070023	25.00	21.10	ug/L	-16	20	

835169070022: Analyst: DAR Date: 04/29/15 Reviewer: LW Date: 05/01/15
835169070023: Analyst: DAR Date: 04/29/15 Reviewer: LW Date: 05/01/15

-=low bias m=manual integration v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 IDF : 1.0
Seqnum : 475304292008.1 File : hgu08 Time : 30-JUL-2015 12:08
Cal : 475253923002 Caldate : 25-JUN-2015 Caltype : WATER
Standards: S26360 (25000X), S27559 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.4691	0.4400	20.00	18.76	ug/L	-6	20	0.1000	v+ ***
Chloromethane	0.7984	0.8754	20.00	21.93	ug/L	10	20	0.1000	
Vinyl Chloride	0.6642	0.6927	20.00	20.86	ug/L	4	20	0.1000	
Bromomethane	0.3569	0.3455	20.00	19.36	ug/L	-3	20	0.1000	
Chloroethane	0.4789	0.4292	20.00	17.92	ug/L	-10	20	0.1000	
Trichlorofluoromethane	0.7498	0.6491	20.00	17.31	ug/L	-13	20	0.1000	
Acetone	0.1763	0.1451	20.00	16.47	ug/L	-18	20	0.1000	
Freon 113	0.4380	0.3372	20.00	15.40	ug/L	**-23**	20	0.1000	c- v- ***
1,1-Dichloroethene	0.4652	0.3766	20.00	16.19	ug/L	-19	20	0.1000	
Methylene Chloride	0.5883	0.5293	20.00	17.99	ug/L	-10	20	0.1000	
Carbon Disulfide	1.9197	1.6308	20.00	16.99	ug/L	-15	20	0.1000	v- ***
MTBE	1.3099	1.1843	20.00	18.08	ug/L	-10	20	0.1000	
trans-1,2-Dichloroethene	0.5291	0.4729	20.00	17.88	ug/L	-11	20	0.1000	
Vinyl Acetate	0.8079	0.9759	20.00	24.16	ug/L	**21**	20	0.0500	c+ v+ ***
1,1-Dichloroethane	1.1779	1.1074	20.00	18.80	ug/L	-6	20	0.2000	
2-Butanone	0.2244	0.1986	20.00	17.70	ug/L	-11	20	0.1000	
2,2-Dichloropropane	0.7326	0.8278	20.00	22.60	ug/L	13	20	0.0500	
cis-1,2-Dichloroethene	0.5930	0.5452	20.00	18.39	ug/L	-8	20	0.1000	
Chloroform	1.0077	0.9423	20.00	18.70	ug/L	-6	20	0.2000	
Bromochloromethane	0.2784	0.2457	20.00	17.65	ug/L	-12	20	0.0500	
1,1,1-Trichloroethane	0.7213	0.6762	20.00	18.75	ug/L	-6	20	0.1000	
1,1-Dichloropropene	0.4966	0.4689	20.00	18.88	ug/L	-6	20	0.0500	
Carbon Tetrachloride	0.3839	0.3606	20.00	18.79	ug/L	-6	20	0.1000	
1,2-Dichloroethane	0.4749	0.4858	20.00	20.46	ug/L	2	20	0.1000	
Benzene	1.4114	1.2808	20.00	18.15	ug/L	-9	20	0.5000	
Trichloroethene	0.3451	0.3101	20.00	17.98	ug/L	-10	20	0.2000	
1,2-Dichloropropane	0.4377	0.4182	20.00	19.11	ug/L	-4	20	0.1000	
Bromodichloromethane	0.4845	0.4739	20.00	19.57	ug/L	-2	20	0.2000	
Dibromomethane	0.2104	0.1916	20.00	18.21	ug/L	-9	20	0.0500	
4-Methyl-2-Pentanone	0.3230	0.2656	20.00	16.45	ug/L	-18	20	0.1000	
cis-1,3-Dichloropropene	0.5891	0.5685	20.00	19.30	ug/L	-4	20	0.2000	
Toluene	0.9206	0.8179	20.00	17.77	ug/L	-11	20	0.4000	
trans-1,3-Dichloropropene	0.5580	0.5136	20.00	18.41	ug/L	-8	20	0.1000	
1,1,2-Trichloroethane	0.1704	0.1501	20.00	17.62	ug/L	-12	20	0.1000	
2-Hexanone	0.2611	0.2213	20.00	16.95	ug/L	-15	20	0.1000	
1,3-Dichloropropane	0.5589	0.5009	20.00	17.92	ug/L	-10	20	0.0500	
Tetrachloroethene	0.3631	0.3357	20.00	18.49	ug/L	-8	20	0.2000	
Dibromochloromethane	0.3917	0.3546	20.00	18.11	ug/L	-9	20	0.1000	
1,2-Dibromoethane	0.3104	0.2743	20.00	17.67	ug/L	-12	20	0.1000	
Chlorobenzene	1.0341	0.9907	20.00	19.16	ug/L	-4	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3771	0.3492	20.00	18.52	ug/L	-7	20	0.0500	
Ethylbenzene	1.7475	1.7009	20.00	19.47	ug/L	-3	20	0.1000	
m,p-Xylenes	0.6412	0.6184	40.00	38.58	ug/L	-4	20	0.1000	
o-Xylene	0.6535	0.6184	20.00	18.92	ug/L	-5	20	0.3000	
Styrene	1.0883	1.0447	20.00	19.20	ug/L	-4	20	0.3000	
Bromoform	0.2379	0.1923	20.00	16.17	ug/L	-19	20	0.1000	
Isopropylbenzene	3.0957	2.9717	20.00	19.20	ug/L	-4	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.6825	0.6128	20.00	17.96	ug/L	-10	20	0.3000	
1,2,3-Trichloropropane	0.1575	0.1366	20.00	17.35	ug/L	-13	20	0.0500	
Propylbenzene	3.6999	3.7466	20.00	20.25	ug/L	1	20	0.0500	
Bromobenzene	0.8605	0.8484	20.00	19.72	ug/L	-1	20	0.0500	
1,3,5-Trimethylbenzene	2.4787	2.4397	20.00	19.69	ug/L	-2	20	0.0500	
2-Chlorotoluene	2.5575	2.5850	20.00	20.22	ug/L	1	20	0.0500	
4-Chlorotoluene	2.2917	2.3107	20.00	20.17	ug/L	1	20	0.0500	
tert-Butylbenzene	2.2669	2.0980	20.00	18.51	ug/L	-7	20	0.0500	
1,2,4-Trimethylbenzene	2.5691	2.5780	20.00	20.07	ug/L	0	20	0.0500	
sec-Butylbenzene	3.3351	3.1672	20.00	18.99	ug/L	-5	20	0.0500	
para-Isopropyl Toluene	2.6261	2.6049	20.00	19.84	ug/L	-1	20	0.0500	
1,3-Dichlorobenzene	1.5310	1.4604	20.00	19.08	ug/L	-5	20	0.6000	
1,4-Dichlorobenzene	1.5176	1.4631	20.00	19.28	ug/L	-4	20	0.5000	
n-Butylbenzene	2.3327	2.3951	20.00	20.54	ug/L	3	20	0.0500	
1,2-Dichlorobenzene	1.4680	1.4040	20.00	19.13	ug/L	-4	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1094	0.0979	20.00	17.89	ug/L	-11	20	0.0500	
1,2,4-Trichlorobenzene	0.8434	0.7768	20.00	18.42	ug/L	-8	20	0.2000	
Hexachlorobutadiene	0.4036	0.4006	20.00	19.85	ug/L	-1	20	0.0500	
Naphthalene	1.6896	1.5104	20.00	17.88	ug/L	-11	20	0.0500	
1,2,3-Trichlorobenzene	0.7623	0.6858	20.00	17.99	ug/L	-10	20	0.0500	
Dibromofluoromethane	0.5429	0.5689	50.00	52.39	ug/L	5	20	0.0500	
1,2-Dichloroethane-d4	0.3471	0.3758	50.00	54.14	ug/L	8	20	0.0500	
Toluene-d8	1.2180	1.2181	50.00	50.00	ug/L	0	20	0.0500	
Bromofluorobenzene	0.9779	1.0037	50.00	51.32	ug/L	3	20	0.0500	

ISTD (ICAL hfp14)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	1032422	1602604	55.23	10.06	10.04	-0.02
1,4-Difluorobenzene	1647573	2511787	52.45	11.26	11.24	-0.02
Chlorobenzene-d5	1426621	2143831	50.27	15.76	15.74	-0.02
1,4-Dichlorobenzene-d4	722873	1112721	53.93	18.61	18.59	-0.02

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 IDF : 1.0
Seqnum : 475305775004.1 File : hgv04 Time : 31-JUL-2015 09:45
Cal : 475253923002 Caldate : 25-JUN-2015 Caltype : WATER
Standards: S26360 (25000X), S27559 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.4691	0.6596	20.00	28.12	ug/L	**41**	20	0.1000	c+ v+ ***
Chloromethane	0.7984	0.8577	20.00	21.48	ug/L	7	20	0.1000	
Vinyl Chloride	0.6642	0.7275	20.00	21.91	ug/L	10	20	0.1000	
Bromomethane	0.3569	0.4564	20.00	25.58	ug/L	**28**	20	0.1000	c+ ***
Chloroethane	0.4789	0.5158	20.00	21.54	ug/L	8	20	0.1000	
Trichlorofluoromethane	0.7498	0.8687	20.00	23.17	ug/L	16	20	0.1000	
Acetone	0.1763	0.1491	20.00	16.92	ug/L	-15	20	0.1000	
Freon 113	0.4380	0.3593	20.00	16.41	ug/L	-18	20	0.1000	v- ***
1,1-Dichloroethene	0.4652	0.4082	20.00	17.55	ug/L	-12	20	0.1000	
Methylene Chloride	0.5883	0.5522	20.00	18.77	ug/L	-6	20	0.1000	
Carbon Disulfide	1.9197	1.8162	20.00	18.92	ug/L	-5	20	0.1000	v- ***
MTBE	1.3099	1.1758	20.00	17.95	ug/L	-10	20	0.1000	
trans-1,2-Dichloroethene	0.5291	0.4901	20.00	18.53	ug/L	-7	20	0.1000	
Vinyl Acetate	0.8079	1.2591	20.00	31.17	ug/L	**56**	20	0.0500	c+ v+ ***
1,1-Dichloroethane	1.1779	1.1831	20.00	20.09	ug/L	0	20	0.2000	
2-Butanone	0.2244	0.2001	20.00	17.84	ug/L	-11	20	0.1000	
2,2-Dichloropropane	0.7326	0.8748	20.00	23.88	ug/L	19	20	0.0500	
cis-1,2-Dichloroethene	0.5930	0.5667	20.00	19.12	ug/L	-4	20	0.1000	
Chloroform	1.0077	1.0580	20.00	21.00	ug/L	5	20	0.2000	
Bromochloromethane	0.2784	0.2538	20.00	18.24	ug/L	-9	20	0.0500	
1,1,1-Trichloroethane	0.7213	0.7423	20.00	20.58	ug/L	3	20	0.1000	
1,1-Dichloropropene	0.4966	0.4588	20.00	18.48	ug/L	-8	20	0.0500	
Carbon Tetrachloride	0.3839	0.3682	20.00	19.18	ug/L	-4	20	0.1000	
1,2-Dichloroethane	0.4749	0.5006	20.00	21.09	ug/L	5	20	0.1000	
Benzene	1.4114	1.2459	20.00	17.66	ug/L	-12	20	0.5000	
Trichloroethene	0.3451	0.3153	20.00	18.27	ug/L	-9	20	0.2000	
1,2-Dichloropropane	0.4377	0.4100	20.00	18.73	ug/L	-6	20	0.1000	
Bromodichloromethane	0.4845	0.4892	20.00	20.20	ug/L	1	20	0.2000	
Dibromomethane	0.2104	0.1959	20.00	18.62	ug/L	-7	20	0.0500	
4-Methyl-2-Pentanone	0.3230	0.2631	20.00	16.29	ug/L	-19	20	0.1000	
cis-1,3-Dichloropropene	0.5891	0.5486	20.00	18.63	ug/L	-7	20	0.2000	
Toluene	0.9206	0.8548	20.00	18.57	ug/L	-7	20	0.4000	
trans-1,3-Dichloropropene	0.5580	0.5641	20.00	20.22	ug/L	1	20	0.1000	
1,1,2-Trichloroethane	0.1704	0.1527	20.00	17.93	ug/L	-10	20	0.1000	
2-Hexanone	0.2611	0.2302	20.00	17.63	ug/L	-12	20	0.1000	
1,3-Dichloropropane	0.5589	0.5091	20.00	18.22	ug/L	-9	20	0.0500	
Tetrachloroethene	0.3631	0.3142	20.00	17.31	ug/L	-13	20	0.2000	
Dibromochloromethane	0.3917	0.3457	20.00	17.65	ug/L	-12	20	0.1000	
1,2-Dibromoethane	0.3104	0.2758	20.00	17.77	ug/L	-11	20	0.1000	
Chlorobenzene	1.0341	0.9684	20.00	18.73	ug/L	-6	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3771	0.3557	20.00	18.86	ug/L	-6	20	0.0500	
Ethylbenzene	1.7475	1.6370	20.00	18.74	ug/L	-6	20	0.1000	
m,p-Xylenes	0.6412	0.6146	40.00	38.34	ug/L	-4	20	0.1000	
o-Xylene	0.6535	0.6013	20.00	18.40	ug/L	-8	20	0.3000	
Styrene	1.0883	1.0683	20.00	19.63	ug/L	-2	20	0.3000	
Bromoform	0.2379	0.1908	20.00	16.04	ug/L	-20	20	0.1000	
Isopropylbenzene	3.0957	2.8513	20.00	18.42	ug/L	-8	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.6825	0.5774	20.00	16.92	ug/L	-15	20	0.3000	
1,2,3-Trichloropropane	0.1575	0.1377	20.00	17.50	ug/L	-13	20	0.0500	
Propylbenzene	3.6999	3.4192	20.00	18.48	ug/L	-8	20	0.0500	
Bromobenzene	0.8605	0.7416	20.00	17.24	ug/L	-14	20	0.0500	
1,3,5-Trimethylbenzene	2.4787	2.3249	20.00	18.76	ug/L	-6	20	0.0500	
2-Chlorotoluene	2.5575	2.5052	20.00	19.59	ug/L	-2	20	0.0500	
4-Chlorotoluene	2.2917	2.3883	20.00	20.84	ug/L	4	20	0.0500	
tert-Butylbenzene	2.2669	2.0511	20.00	18.10	ug/L	-10	20	0.0500	
1,2,4-Trimethylbenzene	2.5691	2.4454	20.00	19.04	ug/L	-5	20	0.0500	
sec-Butylbenzene	3.3351	3.0701	20.00	18.41	ug/L	-8	20	0.0500	
para-Isopropyl Toluene	2.6261	2.5127	20.00	19.14	ug/L	-4	20	0.0500	
1,3-Dichlorobenzene	1.5310	1.4212	20.00	18.57	ug/L	-7	20	0.6000	
1,4-Dichlorobenzene	1.5176	1.4242	20.00	18.77	ug/L	-6	20	0.5000	
n-Butylbenzene	2.3327	2.2890	20.00	19.63	ug/L	-2	20	0.0500	
1,2-Dichlorobenzene	1.4680	1.3599	20.00	18.53	ug/L	-7	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1094	0.0914	20.00	16.71	ug/L	-16	20	0.0500	
1,2,4-Trichlorobenzene	0.8434	0.7281	20.00	17.26	ug/L	-14	20	0.2000	
Hexachlorobutadiene	0.4036	0.3592	20.00	17.80	ug/L	-11	20	0.0500	
Naphthalene	1.6896	1.3775	20.00	16.31	ug/L	-18	20	0.0500	
1,2,3-Trichlorobenzene	0.7623	0.6363	20.00	16.70	ug/L	-17	20	0.0500	
Dibromofluoromethane	0.5429	0.5901	50.00	54.34	ug/L	9	20	0.0500	
1,2-Dichloroethane-d4	0.3471	0.4058	50.00	58.45	ug/L	17	20	0.0500	
Toluene-d8	1.2180	1.2698	50.00	52.13	ug/L	4	20	0.0500	
Bromofluorobenzene	0.9779	1.0101	50.00	51.65	ug/L	3	20	0.0500	

ISTD (ICAL hfp14)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	1032422	1262507	22.29	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	2081396	26.33	11.26	11.24	-0.02
Chlorobenzene-d5	1426621	1753682	22.93	15.76	15.75	-0.01
1,4-Dichlorobenzene-d4	722873	975878	35.00	18.61	18.60	-0.01

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA08 IDF : 1.0
Seqnum : 475314337004.1 File : hh604 Time : 06-AUG-2015 09:08
Cal : 475253923002 Caldate : 25-JUN-2015 Caltype : WATER
Standards: S26360 (25000X), S27823 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.4691	0.6742	20.00	28.74	ug/L	**44**	20	0.1000	c+ v+ ***
Chloromethane	0.7984	0.7619	20.00	19.08	ug/L	-5	20	0.1000	
Vinyl Chloride	0.6642	0.7517	20.00	22.64	ug/L	13	20	0.1000	
Bromomethane	0.3569	0.3501	20.00	19.62	ug/L	-2	20	0.1000	
Chloroethane	0.4789	0.5091	20.00	21.26	ug/L	6	20	0.1000	
Trichlorofluoromethane	0.7498	0.9538	20.00	25.44	ug/L	**27**	20	0.1000	c+ ***
Acetone	0.1763	0.1682	20.00	19.08	ug/L	-5	20	0.1000	
Freon 113	0.4380	0.3006	20.00	13.73	ug/L	**-31**	20	0.1000	c- v- ***
1,1-Dichloroethene	0.4652	0.3957	20.00	17.01	ug/L	-15	20	0.1000	
Methylene Chloride	0.5883	0.5635	20.00	19.16	ug/L	-4	20	0.1000	
Carbon Disulfide	1.9197	1.7496	20.00	18.23	ug/L	-9	20	0.1000	v- ***
MTBE	1.3099	1.3148	20.00	20.08	ug/L	0	20	0.1000	
trans-1,2-Dichloroethene	0.5291	0.4822	20.00	18.23	ug/L	-9	20	0.1000	
Vinyl Acetate	0.8079	1.4081	20.00	34.86	ug/L	**74**	20	0.0500	c+ v+ ***
1,1-Dichloroethane	1.1779	1.2687	20.00	21.54	ug/L	8	20	0.2000	
2-Butanone	0.2244	0.2354	20.00	20.98	ug/L	5	20	0.1000	
2,2-Dichloropropane	0.7326	0.9739	20.00	26.59	ug/L	**33**	20	0.0500	c+ ***
cis-1,2-Dichloroethene	0.5930	0.5943	20.00	20.04	ug/L	0	20	0.1000	
Chloroform	1.0077	1.1377	20.00	22.58	ug/L	13	20	0.2000	
Bromochloromethane	0.2784	0.2523	20.00	18.13	ug/L	-9	20	0.0500	
1,1,1-Trichloroethane	0.7213	0.7697	20.00	21.34	ug/L	7	20	0.1000	
1,1-Dichloropropene	0.4966	0.4697	20.00	18.92	ug/L	-5	20	0.0500	
Carbon Tetrachloride	0.3839	0.3768	20.00	19.63	ug/L	-2	20	0.1000	
1,2-Dichloroethane	0.4749	0.5701	20.00	24.01	ug/L	20	20	0.1000	
Benzene	1.4114	1.3483	20.00	19.11	ug/L	-4	20	0.5000	
Trichloroethene	0.3451	0.3476	20.00	20.15	ug/L	1	20	0.2000	
1,2-Dichloropropane	0.4377	0.4429	20.00	20.24	ug/L	1	20	0.1000	
Bromodichloromethane	0.4845	0.5249	20.00	21.67	ug/L	8	20	0.2000	
Dibromomethane	0.2104	0.2087	20.00	19.83	ug/L	-1	20	0.0500	
4-Methyl-2-Pentanone	0.3230	0.3142	20.00	19.45	ug/L	-3	20	0.1000	
cis-1,3-Dichloropropene	0.5891	0.6410	20.00	21.76	ug/L	9	20	0.2000	
Toluene	0.9206	0.8936	20.00	19.41	ug/L	-3	20	0.4000	
trans-1,3-Dichloropropene	0.5580	0.5970	20.00	21.39	ug/L	7	20	0.1000	
1,1,2-Trichloroethane	0.1704	0.1673	20.00	19.64	ug/L	-2	20	0.1000	
2-Hexanone	0.2611	0.2550	20.00	19.54	ug/L	-2	20	0.1000	
1,3-Dichloropropane	0.5589	0.5543	20.00	19.83	ug/L	-1	20	0.0500	
Tetrachloroethene	0.3631	0.3142	20.00	17.30	ug/L	-13	20	0.2000	
Dibromochloromethane	0.3917	0.3845	20.00	19.63	ug/L	-2	20	0.1000	
1,2-Dibromoethane	0.3104	0.3064	20.00	19.74	ug/L	-1	20	0.1000	
Chlorobenzene	1.0341	1.0183	20.00	19.69	ug/L	-2	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3771	0.3837	20.00	20.35	ug/L	2	20	0.0500	
Ethylbenzene	1.7475	1.8335	20.00	20.98	ug/L	5	20	0.1000	
m,p-Xylenes	0.6412	0.6375	40.00	39.77	ug/L	-1	20	0.1000	
o-Xylene	0.6535	0.6696	20.00	20.49	ug/L	2	20	0.3000	
Styrene	1.0883	1.1591	20.00	21.30	ug/L	7	20	0.3000	
Bromoform	0.2379	0.2111	20.00	17.74	ug/L	-11	20	0.1000	
Isopropylbenzene	3.0957	2.7232	20.00	17.59	ug/L	-12	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.6825	0.6576	20.00	19.27	ug/L	-4	20	0.3000	
1,2,3-Trichloropropane	0.1575	0.1502	20.00	19.08	ug/L	-5	20	0.0500	
Propylbenzene	3.6999	3.6086	20.00	19.51	ug/L	-2	20	0.0500	
Bromobenzene	0.8605	0.8334	20.00	19.37	ug/L	-3	20	0.0500	
1,3,5-Trimethylbenzene	2.4787	2.3915	20.00	19.30	ug/L	-4	20	0.0500	
2-Chlorotoluene	2.5575	2.5732	20.00	20.12	ug/L	1	20	0.0500	
4-Chlorotoluene	2.2917	2.4705	20.00	21.56	ug/L	8	20	0.0500	
tert-Butylbenzene	2.2669	1.9927	20.00	17.58	ug/L	-12	20	0.0500	
1,2,4-Trimethylbenzene	2.5691	2.5305	20.00	19.70	ug/L	-2	20	0.0500	
sec-Butylbenzene	3.3351	2.6825	20.00	16.09	ug/L	-20	20	0.0500	
para-Isopropyl Toluene	2.6261	2.3882	20.00	18.19	ug/L	-9	20	0.0500	
1,3-Dichlorobenzene	1.5310	1.4588	20.00	19.06	ug/L	-5	20	0.6000	
1,4-Dichlorobenzene	1.5176	1.4463	20.00	19.06	ug/L	-5	20	0.5000	
n-Butylbenzene	2.3327	2.1363	20.00	18.32	ug/L	-8	20	0.0500	
1,2-Dichlorobenzene	1.4680	1.3895	20.00	18.93	ug/L	-5	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1094	0.1107	20.00	20.23	ug/L	1	20	0.0500	
1,2,4-Trichlorobenzene	0.8434	0.7673	20.00	18.19	ug/L	-9	20	0.2000	
Hexachlorobutadiene	0.4036	0.3327	20.00	16.48	ug/L	-18	20	0.0500	
Naphthalene	1.6896	1.4863	20.00	17.59	ug/L	-12	20	0.0500	
1,2,3-Trichlorobenzene	0.7623	0.6867	20.00	18.02	ug/L	-10	20	0.0500	
Dibromofluoromethane	0.5429	0.6044	50.00	55.66	ug/L	11	20	0.0500	
1,2-Dichloroethane-d4	0.3471	0.4315	50.00	62.16	ug/L	**24**	20	0.0500	c+ ***
Toluene-d8	1.2180	1.2304	50.00	50.51	ug/L	1	20	0.0500	
Bromofluorobenzene	0.9779	1.0424	50.00	53.30	ug/L	7	20	0.0500	

ISTD (ICAL hfp14)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	1032422	1177731	14.07	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	1875344	13.82	11.26	11.26	0.00
Chlorobenzene-d5	1426621	1603812	12.42	15.76	15.75	-0.01
1,4-Dichlorobenzene-d4	722873	904961	25.19	18.61	18.60	-0.01

Analyst: KKM Date: 08/07/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : 20PPB IDF : 1.0
Seqnum : 485305964004.1 File : igv04 Time : 31-JUL-2015 12:35
Cal : 485271359002 Caldate : 07-JUL-2015 Caltype : WATER
Standards: S26360 (25000X), S27823 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.7284	0.7796	20.00	21.41	ug/L	7	20	0.1000	v- ***
Chloromethane	1.1081	1.1009	20.00	21.77	ug/L	9	20	0.1000	
Vinyl Chloride	0.8085	0.8720	20.00	21.57	ug/L	8	20	0.1000	
Bromomethane	0.3902	0.4069	20.00	20.86	ug/L	4	20	0.1000	
Chloroethane	0.4543	0.4776	20.00	21.03	ug/L	5	20	0.1000	
Trichlorofluoromethane	0.8290	0.8434	20.00	20.35	ug/L	2	20	0.1000	
Acetone	0.1067	0.1221	20.00	22.88	ug/L	14	20	0.1000	
Freon 113	0.3835	0.3650	20.00	19.03	ug/L	-5	20	0.1000	
1,1-Dichloroethene	0.3943	0.3947	20.00	20.02	ug/L	0	20	0.1000	
Methylene Chloride	0.5076	0.5219	20.00	20.56	ug/L	3	20	0.1000	
Carbon Disulfide	1.6924	1.6734	20.00	19.78	ug/L	-1	20	0.1000	
MTBE	0.9109	0.9355	20.00	20.54	ug/L	3	20	0.1000	
trans-1,2-Dichloroethene	0.4571	0.4646	20.00	20.33	ug/L	2	20	0.1000	
Vinyl Acetate	0.8085	1.0786	20.00	26.68	ug/L	**33**	20	0.0500	c+ ***
1,1-Dichloroethane	1.0378	1.1518	20.00	22.20	ug/L	11	20	0.2000	
2-Butanone	0.1625	0.1803	20.00	22.19	ug/L	11	20	0.1000	
2,2-Dichloropropane	0.7359	0.8599	20.00	23.37	ug/L	17	20	0.0500	
cis-1,2-Dichloroethene	0.5063	0.5354	20.00	21.15	ug/L	6	20	0.1000	
Chloroform	0.9672	1.0563	20.00	21.84	ug/L	9	20	0.2000	
Bromochloromethane	0.2340	0.2350	20.00	20.09	ug/L	0	20	0.0500	
1,1,1-Trichloroethane	0.7541	0.8352	20.00	22.15	ug/L	11	20	0.1000	
1,1-Dichloropropene	0.4477	0.4121	20.00	18.41	ug/L	-8	20	0.0500	
Carbon Tetrachloride	0.4101	0.3966	20.00	19.35	ug/L	-3	20	0.1000	
1,2-Dichloroethane	0.4101	0.4071	20.00	19.85	ug/L	-1	20	0.1000	
Benzene	1.1717	1.1500	20.00	19.63	ug/L	-2	20	0.5000	
Trichloroethene	0.3094	0.2819	20.00	18.22	ug/L	-9	20	0.2000	
1,2-Dichloropropane	0.3638	0.3571	20.00	19.63	ug/L	-2	20	0.1000	
Bromodichloromethane	0.4323	0.4245	20.00	19.64	ug/L	-2	20	0.2000	
Dibromomethane	0.1772	0.1688	20.00	19.05	ug/L	-5	20	0.0500	
4-Methyl-2-Pentanone	0.2332	0.2271	20.00	19.47	ug/L	-3	20	0.1000	
cis-1,3-Dichloropropene	0.4784	0.4707	20.00	19.68	ug/L	-2	20	0.2000	
Toluene	0.7375	0.6647	20.00	18.02	ug/L	-10	20	0.4000	
trans-1,3-Dichloropropene	0.4428	0.3940	20.00	17.79	ug/L	-11	20	0.1000	
1,1,2-Trichloroethane	0.1258	0.1128	20.00	17.93	ug/L	-10	20	0.1000	
2-Hexanone	0.1878	0.1654	20.00	17.62	ug/L	-12	20	0.1000	
1,3-Dichloropropane	0.4065	0.3516	20.00	17.30	ug/L	-14	20	0.0500	
Tetrachloroethene	0.2847	0.2108	20.00	14.80	ug/L	**-26**	20	0.2000	c- ***
Dibromochloromethane	0.2976	0.2620	20.00	17.60	ug/L	-12	20	0.1000	
1,2-Dibromoethane	0.2287	0.1933	20.00	16.91	ug/L	-15	20	0.1000	
Chlorobenzene	0.8211	0.7064	20.00	17.21	ug/L	-14	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3110	0.2498	20.00	16.06	ug/L	-20	20	0.0500	
Ethylbenzene	1.4375	1.2121	20.00	16.86	ug/L	-16	20	0.1000	
m,p-Xylenes	0.5020	0.4476	40.00	35.67	ug/L	-11	20	0.1000	
o-Xylene	0.4937	0.4224	20.00	17.11	ug/L	-14	20	0.3000	
Styrene	0.7940	0.7454	20.00	18.78	ug/L	-6	20	0.3000	
Bromoform	0.1444	0.1317	20.00	18.25	ug/L	-9	20	0.1000	
Isopropylbenzene	2.4531	1.9756	20.00	16.11	ug/L	-19	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.4890	0.4297	20.00	17.58	ug/L	-12	20	0.3000	
1,2,3-Trichloropropane	0.1142	0.0984	20.00	17.24	ug/L	-14	20	0.0500	
Propylbenzene	2.9761	2.4140	20.00	16.22	ug/L	-19	20	0.0500	
Bromobenzene	0.6434	0.5537	20.00	17.21	ug/L	-14	20	0.0500	
1,3,5-Trimethylbenzene	1.9436	1.5641	20.00	16.09	ug/L	-20	20	0.0500	
2-Chlorotoluene	2.0223	1.7476	20.00	17.28	ug/L	-14	20	0.0500	
4-Chlorotoluene	1.8552	1.5561	20.00	16.78	ug/L	-16	20	0.0500	
tert-Butylbenzene	1.6866	1.2426	20.00	14.73	ug/L	**-26**	20	0.0500	c- ***
1,2,4-Trimethylbenzene	1.9258	1.5528	20.00	16.13	ug/L	-19	20	0.0500	
sec-Butylbenzene	2.5186	1.8402	20.00	14.61	ug/L	**-27**	20	0.0500	c- ***
para-Isopropyl Toluene	1.9032	1.3630	20.00	14.32	ug/L	**-28**	20	0.0500	c- ***
1,3-Dichlorobenzene	1.0824	0.8903	20.00	16.45	ug/L	-18	20	0.6000	
1,4-Dichlorobenzene	1.1265	0.9781	20.00	17.37	ug/L	-13	20	0.5000	
n-Butylbenzene	1.7647	1.2454	20.00	14.11	ug/L	**-29**	20	0.0500	c- ***
1,2-Dichlorobenzene	0.9824	0.8372	20.00	17.04	ug/L	-15	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.0753	0.0648	20.00	17.22	ug/L	-14	20	0.0500	
1,2,4-Trichlorobenzene	0.4842	0.3455	20.00	14.27	ug/L	**-29**	20	0.2000	c- ***
Hexachlorobutadiene	0.2467	0.1603	20.00	12.99	ug/L	**-35**	20	0.0500	c- ***
Naphthalene	0.7893	0.5369	20.00	13.60	ug/L	**-32**	20	0.0500	c- ***
1,2,3-Trichlorobenzene	0.4246	0.3064	20.00	14.43	ug/L	**-28**	20	0.0500	c- ***
Dibromofluoromethane	0.6560	0.7598	50.00	57.92	ug/L	16	20	0.0500	
1,2-Dichloroethane-d4	0.3637	0.4146	50.00	57.01	ug/L	14	20	0.0500	
Toluene-d8	1.3772	1.3423	50.00	48.73	ug/L	-3	20	0.0500	
Bromofluorobenzene	0.9880	0.9827	50.00	49.73	ug/L	-1	20	0.0500	

ISTD (ICAL ig713)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	987439	1158431	17.32	11.04	11.00	-0.04
1,4-Difluorobenzene	1506110	2022004	34.25	12.30	12.27	-0.03
Chlorobenzene-d5	1326780	1944148	46.53	16.67	16.64	-0.03
1,4-Dichlorobenzene-d4	740445	1008685	36.23	19.10	19.09	-0.01

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS SPIKE USER REPORT FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA11 Run Name : QC797676 IDF : 1.0
Seqnum : 835304280006.6 File : kgu06 Time : 30-JUL-2015 10:09
Cal : 835169070002 Caldate : 28-APR-2015 Caltype : WATER
Standards: S27558 (10000X), S27556 (10000X), S27533 (10000X), S27008 (10000X), S27697 (2500X), S27642 (50000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.5437	0.4153	20.00	15.28	ug/L	**-24**	20	0.1000	c- u ***
Chloromethane	0.6238	0.5029	20.00	16.12	ug/L	-19	20	0.1000	u
Vinyl Chloride	0.5789	0.5770	20.00	19.93	ug/L	0	20	0.1000	u
Bromomethane	0.3182	0.3657	20.00	22.98	ug/L	15	20	0.1000	u v- ***
Chloroethane	0.3052	0.2906	20.00	19.04	ug/L	-5	20	0.1000	u
Trichlorofluoromethane	0.7250	0.7063	20.00	19.48	ug/L	-3	20	0.1000	u
Acetone	0.1475	0.1351	25.00	22.90	ug/L	-8	20	0.1000	u
Freon 113	0.3662	0.3270	25.00	22.32	ug/L	-11	20	0.1000	u
1,1-Dichloroethene	0.3933	0.3445	25.00	21.89	ug/L	-12	20	0.1000	u
Methylene Chloride	0.4729	0.4393	25.00	23.22	ug/L	-7	20	0.1000	u
Carbon Disulfide	1.3531	1.1465	25.00	21.18	ug/L	-15	20	0.1000	u
MTBE	1.4522	1.2653	25.00	21.78	ug/L	-13	20	0.1000	u
trans-1,2-Dichloroethene	0.4439	0.4258	25.00	23.98	ug/L	-4	20	0.1000	u
Vinyl Acetate	0.7273	0.9189	25.00	31.59	ug/L	**26**	20	0.0500	c+ u ***
1,1-Dichloroethane	0.8552	0.7820	25.00	22.86	ug/L	-9	20	0.2000	u
2-Butanone	0.2197	0.2044	25.00	23.26	ug/L	-7	20	0.1000	u
cis-1,2-Dichloroethene	0.5085	0.4960	25.00	24.39	ug/L	-2	20	0.1000	u
2,2-Dichloropropane	0.4417	0.7085	25.00	40.09	ug/L	**60**	20	0.0500	?LOD c+ ***
Chloroform	0.8653	0.8402	25.00	24.27	ug/L	-3	20	0.2000	u
Bromochloromethane	0.2597	0.2582	25.00	24.86	ug/L	-1	20	0.0500	u
1,1,1-Trichloroethane	0.7236	0.7280	25.00	25.15	ug/L	1	20	0.1000	u
1,1-Dichloropropene	0.4225	0.3930	25.00	23.26	ug/L	-7	20	0.0500	u
Carbon Tetrachloride	0.4040	0.4006	25.00	24.79	ug/L	-1	20	0.1000	u
1,2-Dichloroethane	0.4770	0.4342	25.00	22.75	ug/L	-9	20	0.1000	u
Benzene	1.3130	1.2837	25.00	24.44	ug/L	-2	20	0.5000	u
Trichloroethene	0.3288	0.3119	25.00	23.72	ug/L	-5	20	0.2000	u
1,2-Dichloropropane	0.3370	0.2997	25.00	22.23	ug/L	-11	20	0.1000	u
Bromodichloromethane	0.4407	0.4057	25.00	23.02	ug/L	-8	20	0.2000	u
Dibromomethane	0.2189	0.1973	25.00	22.53	ug/L	-10	20	0.0500	u
4-Methyl-2-Pentanone	0.3250	0.2708	25.00	20.83	ug/L	-17	20	0.1000	u
cis-1,3-Dichloropropene	0.5108	0.4846	25.00	23.72	ug/L	-5	20	0.2000	u
Toluene	0.9317	0.9582	25.00	25.71	ug/L	3	20	0.4000	u
trans-1,3-Dichloropropene	0.5354	0.5092	25.00	23.78	ug/L	-5	20	0.1000	u
1,1,2-Trichloroethane	0.1892	0.1764	25.00	23.31	ug/L	-7	20	0.1000	u
2-Hexanone	0.2571	0.2292	25.00	22.28	ug/L	-11	20	0.1000	u
1,3-Dichloropropane	0.5808	0.5583	25.00	24.03	ug/L	-4	20	0.0500	u
Tetrachloroethene	0.3506	0.3696	25.00	26.36	ug/L	5	20	0.2000	u
Dibromochloromethane	0.3863	0.3695	25.00	23.91	ug/L	-4	20	0.1000	u
1,2-Dibromoethane	0.3539	0.3267	25.00	23.08	ug/L	-8	20	0.1000	u
Chlorobenzene	1.0611	1.0972	25.00	25.85	ug/L	3	20	0.5000	u
1,1,1,2-Tetrachloroethane	0.3716	0.3627	25.00	24.40	ug/L	-2	20	0.0500	u
Ethylbenzene	1.8251	1.8759	25.00	25.70	ug/L	3	20	0.1000	u
m,p-Xylenes	0.7015	0.7522	50.00	53.62	ug/L	7	20	0.1000	u
o-Xylene	0.6663	0.6773	25.00	25.41	ug/L	2	20	0.3000	u
Styrene	1.2176	1.2220	25.00	25.09	ug/L	0	20	0.3000	u
Bromoform	0.2697	0.2678	25.00	24.82	ug/L	-1	20	0.1000	u
Isopropylbenzene	3.1706	3.5687	25.00	28.14	ug/L	13	20	0.1000	u

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.8373	0.8151	25.00	24.34	ug/L	-3	20	0.3000	u
1,2,3-Trichloropropane	0.8408	0.7984	25.00	23.74	ug/L	-5	20	0.0500	u
Propylbenzene	3.7887	4.3115	25.00	28.45	ug/L	14	20	0.0500	u
Bromobenzene	0.8806	0.9441	25.00	26.80	ug/L	7	20	0.0500	u
1,3,5-Trimethylbenzene	2.7024	3.1213	25.00	28.88	ug/L	16	20	0.0500	u
2-Chlorotoluene	2.5755	2.9147	25.00	28.29	ug/L	13	20	0.0500	u
4-Chlorotoluene	2.3576	2.6641	25.00	28.25	ug/L	13	20	0.0500	u
tert-Butylbenzene	2.3774	2.6206	25.00	27.56	ug/L	10	20	0.0500	u
1,2,4-Trimethylbenzene	2.8532	3.0607	25.00	26.82	ug/L	7	20	0.0500	u
sec-Butylbenzene	3.4283	3.9957	25.00	29.14	ug/L	17	20	0.0500	u
para-Isopropyl Toluene	2.8628	3.2941	25.00	28.77	ug/L	15	20	0.0500	u
1,3-Dichlorobenzene	1.5227	1.6525	25.00	27.13	ug/L	9	20	0.6000	u
1,4-Dichlorobenzene	1.6366	1.7433	25.00	26.63	ug/L	7	20	0.5000	u
n-Butylbenzene	2.4916	2.8405	25.00	28.50	ug/L	14	20	0.0500	u
1,2-Dichlorobenzene	1.3532	1.4494	25.00	26.78	ug/L	7	20	0.4000	u
1,2-Dibromo-3-Chloropropane	0.1268	0.1033	25.00	20.36	ug/L	-19	20	0.0500	u v- ***
1,2,4-Trichlorobenzene	0.4492	0.4238	25.00	23.59	ug/L	-6	20	0.2000	u
Hexachlorobutadiene	0.2822	0.3216	25.00	28.48	ug/L	14	20	0.0500	u
Naphthalene	0.7587	0.5846	25.00	19.26	ug/L	**-23**	20	0.0500	c- u v- ***
1,2,3-Trichlorobenzene	0.1970	0.1913	25.00	24.27	ug/L	-3	20	0.0500	u
Dibromofluoromethane	0.4600	0.4704	50.00	51.13	ug/L	2	20	0.0500	u
1,2-Dichloroethane-d4	0.4077	0.3974	50.00	48.73	ug/L	-3	20	0.0500	u
Toluene-d8	1.4760	1.4769	50.00	50.03	ug/L	0	20	0.0500	u
Bromofluorobenzene	0.8467	0.8765	50.00	51.76	ug/L	4	20	0.0500	u

ISTD (ICAL kdr19)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	581219	714661	22.96	10.64	10.63	-0.01
1,4-Difluorobenzene	890118	1116018	25.38	11.57	11.56	-0.01
Chlorobenzene-d5	786254	956351	21.63	14.68	14.67	-0.01
1,4-Dichlorobenzene-d4	427104	482576	12.99	16.96	16.93	-0.03

ISTD (ICAL kgu05)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	635830	714661	12.40	10.63	10.63	0.00

Analyst: KKM Date: 08/07/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias ?LOD=no LOD c=CCV u=use v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 MSVOA Water
EPA 8260C

Inst : MSVOA11 IDF : 1.0
Seqnum : 835311450004.1 File : kh404 Time : 04-AUG-2015 10:17
Cal : 835169070002 Caldate : 28-APR-2015 Caltype : WATER
Standards: S26360 (25000X), S27823 (25000X), S27699 (25000X), S26220 (25000X), S27697 (2500X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.5437	0.3554	20.00	13.08	ug/L	**-35**	20	0.1000	c- ***
Chloromethane	0.6238	0.4933	20.00	15.82	ug/L	**-21**	20	0.1000	c- ***
Vinyl Chloride	0.5789	0.5867	20.00	20.27	ug/L	1	20	0.1000	
Bromomethane	0.3182	0.2163	20.00	13.59	ug/L	**-32**	20	0.1000	c- m v- ***
Chloroethane	0.3052	0.3128	20.00	20.50	ug/L	2	20	0.1000	
Trichlorofluoromethane	0.7250	0.6497	20.00	17.92	ug/L	-10	20	0.1000	
Acetone	0.1475	0.1347	20.00	18.26	ug/L	-9	20	0.1000	
Freon 113	0.3662	0.3568	20.00	19.49	ug/L	-3	20	0.1000	
1,1-Dichloroethene	0.3933	0.3527	20.00	17.93	ug/L	-10	20	0.1000	
Methylene Chloride	0.4729	0.4464	20.00	18.88	ug/L	-6	20	0.1000	
Carbon Disulfide	1.3531	1.3016	20.00	19.24	ug/L	-4	20	0.1000	
MTBE	1.4522	1.2477	20.00	17.18	ug/L	-14	20	0.1000	
trans-1,2-Dichloroethene	0.4439	0.4373	20.00	19.70	ug/L	-1	20	0.1000	
Vinyl Acetate	0.7273	0.9251	20.00	25.44	ug/L	**27**	20	0.0500	c+ ***
1,1-Dichloroethane	0.8552	0.8272	20.00	19.35	ug/L	-3	20	0.2000	
2-Butanone	0.2197	0.1928	20.00	17.56	ug/L	-12	20	0.1000	
2,2-Dichloropropane	0.4417	0.6807	20.00	30.82	ug/L	**54**	20	0.0500	c+ ***
cis-1,2-Dichloroethene	0.5085	0.4885	20.00	19.21	ug/L	-4	20	0.1000	
Chloroform	0.8653	0.8284	20.00	19.15	ug/L	-4	20	0.2000	
Bromochloromethane	0.2597	0.2520	20.00	19.41	ug/L	-3	20	0.0500	
1,1,1-Trichloroethane	0.7236	0.6996	20.00	19.34	ug/L	-3	20	0.1000	
1,1-Dichloropropene	0.4225	0.3858	20.00	18.26	ug/L	-9	20	0.0500	
Carbon Tetrachloride	0.4040	0.3701	20.00	18.32	ug/L	-8	20	0.1000	
1,2-Dichloroethane	0.4770	0.4126	20.00	17.30	ug/L	-14	20	0.1000	
Benzene	1.3130	1.2493	20.00	19.03	ug/L	-5	20	0.5000	
Trichloroethene	0.3288	0.3003	20.00	18.27	ug/L	-9	20	0.2000	
1,2-Dichloropropane	0.3370	0.3000	20.00	17.81	ug/L	-11	20	0.1000	
Bromodichloromethane	0.4407	0.4062	20.00	18.44	ug/L	-8	20	0.2000	
Dibromomethane	0.2189	0.1923	20.00	17.57	ug/L	-12	20	0.0500	
4-Methyl-2-Pentanone	0.3250	0.2493	20.00	15.34	ug/L	**-23**	20	0.1000	c- ***
cis-1,3-Dichloropropene	0.5108	0.4799	20.00	18.79	ug/L	-6	20	0.2000	
Toluene	0.9317	0.9219	20.00	19.79	ug/L	-1	20	0.4000	
trans-1,3-Dichloropropene	0.5354	0.5208	20.00	19.45	ug/L	-3	20	0.1000	
1,1,2-Trichloroethane	0.1892	0.1714	20.00	18.12	ug/L	-9	20	0.1000	
2-Hexanone	0.2571	0.2089	20.00	16.25	ug/L	-19	20	0.1000	
1,3-Dichloropropane	0.5808	0.5160	20.00	17.77	ug/L	-11	20	0.0500	
Tetrachloroethene	0.3506	0.3481	20.00	19.86	ug/L	-1	20	0.2000	
Dibromochloromethane	0.3863	0.3620	20.00	18.74	ug/L	-6	20	0.1000	
1,2-Dibromoethane	0.3539	0.3135	20.00	17.72	ug/L	-11	20	0.1000	
Chlorobenzene	1.0611	1.0322	20.00	19.46	ug/L	-3	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3716	0.3601	20.00	19.38	ug/L	-3	20	0.0500	
Ethylbenzene	1.8251	1.8025	20.00	19.75	ug/L	-1	20	0.1000	
m,p-Xylenes	0.7015	0.7093	40.00	40.45	ug/L	1	20	0.1000	
o-Xylene	0.6663	0.6320	20.00	18.97	ug/L	-5	20	0.3000	
Styrene	1.2176	1.1352	20.00	18.65	ug/L	-7	20	0.3000	
Bromoform	0.2697	0.2488	20.00	18.45	ug/L	-8	20	0.1000	
Isopropylbenzene	3.1706	3.3856	20.00	21.36	ug/L	7	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.8373	0.7639	20.00	18.25	ug/L	-9	20	0.3000	
1,2,3-Trichloropropane	0.8408	0.7514	20.00	17.87	ug/L	-11	20	0.0500	
Propylbenzene	3.7887	4.0975	20.00	21.63	ug/L	8	20	0.0500	
Bromobenzene	0.8806	0.8965	20.00	20.36	ug/L	2	20	0.0500	
1,3,5-Trimethylbenzene	2.7024	2.8231	20.00	20.89	ug/L	4	20	0.0500	
2-Chlorotoluene	2.5755	2.7344	20.00	21.23	ug/L	6	20	0.0500	
4-Chlorotoluene	2.3576	2.4768	20.00	21.01	ug/L	5	20	0.0500	
tert-Butylbenzene	2.3774	2.3927	20.00	20.13	ug/L	1	20	0.0500	
1,2,4-Trimethylbenzene	2.8532	2.8254	20.00	19.81	ug/L	-1	20	0.0500	
sec-Butylbenzene	3.4283	3.6734	20.00	21.43	ug/L	7	20	0.0500	
para-Isopropyl Toluene	2.8628	2.9773	20.00	20.80	ug/L	4	20	0.0500	
1,3-Dichlorobenzene	1.5227	1.5629	20.00	20.53	ug/L	3	20	0.6000	
1,4-Dichlorobenzene	1.6366	1.6373	20.00	20.01	ug/L	0	20	0.5000	
n-Butylbenzene	2.4916	2.6142	20.00	20.98	ug/L	5	20	0.0500	
1,2-Dichlorobenzene	1.3532	1.3825	20.00	20.43	ug/L	2	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1268	0.1003	20.00	15.82	ug/L	**-21**	20	0.0500	c- v- ***
1,2,4-Trichlorobenzene	0.4492	0.3921	20.00	17.46	ug/L	-13	20	0.2000	
Hexachlorobutadiene	0.2822	0.3051	20.00	21.62	ug/L	8	20	0.0500	
Naphthalene	0.7587	0.5544	20.00	14.61	ug/L	**-27**	20	0.0500	c- v- ***
1,2,3-Trichlorobenzene	0.1970	0.1828	20.00	18.56	ug/L	-7	20	0.0500	
Dibromofluoromethane	0.4600	0.4716	50.00	51.25	ug/L	3	20	0.0500	
1,2-Dichloroethane-d4	0.4077	0.4007	50.00	49.14	ug/L	-2	20	0.0500	
Toluene-d8	1.4760	1.5067	50.00	51.04	ug/L	2	20	0.0500	
Bromofluorobenzene	0.8467	0.8693	50.00	51.33	ug/L	3	20	0.0500	

ISTD (ICAL kdr19)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	581219	567281	-2.40	10.64	10.63	-0.01
1,4-Difluorobenzene	890118	895898	0.65	11.57	11.56	-0.01
Chlorobenzene-d5	786254	766643	-2.49	14.68	14.66	-0.02
1,4-Dichlorobenzene-d4	427104	373670	-12.51	16.96	16.93	-0.03

DJA 08/05/15 [Bromomethane]: Corrected fronting or tailing peak integration. [general version]

Analyst: KKM Date: 08/07/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias c=CCV m=manual integration v=ICV

Logbooks & Sequences

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 475304292

Date : 07/30/15 Reference : hfp14
Sequence : MSVOA08 hgu Analyzed : 06/25/15 15:23

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	1032422	10.06	1647573	11.26	1426621	15.76	722873	18.61
		LOWER LIMIT	516211	9.56	823787	10.76	713311	15.26	361437	18.11
		UPPER LIMIT	2064844	10.56	3295146	11.76	2853242	16.26	1445746	19.11
007	CCV		1536059	10.05	2400302	11.24	2003421	15.75	1046223	18.60
008	CCV		1602604	10.04	2511787	11.24	2143831	15.74	1112721	18.59
010	BS	QC797679	1532749	10.05	2447306	11.24	2019881	15.74	1093012	18.59
011	BSD	QC797680	1541975	10.04	2417296	11.25	2051568	15.74	1078812	18.60
013	BLANK	QC797681	1549473	10.05	2436563	11.25	2082560	15.75	1098204	18.60
014	SAMPLE	268513-011	1547385	10.05	2292614	11.25	1937012	15.75	1086319	18.60
015	SAMPLE	268513-024	1497442	10.05	2160319	11.26	1907787	15.75	1050251	18.60
016	SAMPLE	268556-010	1403002	10.05	2135879	11.25	1875977	15.75	1025472	18.60
017	SAMPLE	268556-005	1362728	10.06	2118798	11.25	1775532	15.75	994659	18.60
018	SAMPLE	268556-008	1370659	10.05	2068173	11.25	1772585	15.75	957631	18.60
019	SAMPLE	268556-001	1298928	10.05	2060177	11.25	1705574	15.75	950946	18.60
020	SAMPLE	268556-003	1331713	10.05	2031081	11.25	1800034	15.75	1019609	18.60
021	SAMPLE	268513-015	1238123	10.06	1928962	11.25	1579063	15.75	895394	18.60
022	MSS	268557-001	1274003	10.05	2011628	11.25	1749847	15.75	939487	18.60
023	SAMPLE	268558-001	1262242	10.05	1890393	11.25	1710485	15.75	927632	18.60
024	MS	QC797770	1210709	10.05	1856895	11.25	1617821	15.75	946824	18.60
025	MSD	QC797771	1260902	10.05	2052580	11.25	1774853	15.75	992628	18.60

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 475305775

Date : 07/31/15 Reference : hfp14
Sequence : MSVOA08 hgv Analyzed : 06/25/15 15:23

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	1032422	10.06	1647573	11.26	1426621	15.76	722873	18.61
		LOWER LIMIT	516211	9.56	823787	10.76	713311	15.26	361437	18.11
		UPPER LIMIT	2064844	10.56	3295146	11.76	2853242	16.26	1445746	19.11
004	CCV		1262507	10.05	2081396	11.24	1753682	15.75	975878	18.60
006	BS	QC797837	1271033	10.05	2081157	11.24	1766996	15.74	963695	18.59
007	BSD	QC797838	1368733	10.05	2121459	11.25	1838506	15.75	981569	18.60
009	BLANK	QC797839	1418689	10.05	2137338	11.24	1789612	15.75	978872	18.60
010	SAMPLE	268580-001	1315738	10.05	2008335	11.25	1749439	15.74	939024	18.59
011	SAMPLE	268563-015	1249864	10.05	2020536	11.25	1687213	15.75	944578	18.60
012	SAMPLE	268556-009	1246318	10.05	2011872	11.25	1635749	15.75	925467	18.60
013	SAMPLE	268513-025	1259532	10.05	1824779	11.25	1714610	15.75	918290	18.60
014	SAMPLE	268513-026	1226716	10.05	1936861	11.25	1607714	15.75	906579	18.60
015	SAMPLE	268513-001	1198074	10.05	1858432	11.25	1609312	15.75	835617	18.60
016	SAMPLE	268513-002	1161946	10.05	1862328	11.25	1603615	15.75	831313	18.60
017	SAMPLE	268569-001	1178729	10.05	1881005	11.25	1629935	15.75	908633	18.60
018	SAMPLE	268569-002	1138557	10.05	1825489	11.25	1552881	15.75	858191	18.60
019	SAMPLE	268569-005	1134460	10.06	1819156	11.25	1607742	15.75	865924	18.60
020	SAMPLE	268569-007	1162889	10.06	1814930	11.25	1576064	15.75	858619	18.60
021	SAMPLE	268556-007	1120611	10.05	1769242	11.25	1606806	15.75	870516	18.60
022	SAMPLE	268556-002	1126352	10.05	1812791	11.25	1562883	15.75	881381	18.60
023	SAMPLE	268556-004	1137447	10.05	1748176	11.25	1529087	15.75	821220	18.60

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 475314337

Date : 08/06/15 Reference : hfp14
Sequence : MSVOA08 hh6 Analyzed : 06/25/15 15:23

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	1032422	10.06	1647573	11.26	1426621	15.76	722873	18.61
		LOWER LIMIT	516211	9.56	823787	10.76	713311	15.26	361437	18.11
		UPPER LIMIT	2064844	10.56	3295146	11.76	2853242	16.26	1445746	19.11
004	CCV		1177731	10.05	1875344	11.26	1603812	15.75	904961	18.60
005	BS	QC798441	1307117	10.05	2124578	11.24	1799674	15.75	987709	18.60
006	BSD	QC798442	1387684	10.05	2200927	11.25	1843799	15.75	1018627	18.60
009	BLANK	QC798443	1322521	10.06	2015030	11.26	1756497	15.75	966837	18.60
010	SAMPLE	268736-004	1256259	10.06	1995670	11.26	1625806	15.76	922178	18.61
011	SAMPLE	268704-001	1223057	10.06	1849620	11.26	1605775	15.76	897220	18.61
013	SAMPLE	268740-002	1205437	10.05	1818216	11.26	1595309	15.76	874172	18.61
014	SAMPLE	268694-001	1118327	10.07	1677332	11.26	1460654	15.76	804390	18.61
015	SAMPLE	268704-001	1158272	10.06	1819961	11.26	1565087	15.76	834481	18.60
016	SAMPLE	268736-002	1093949	10.07	1733642	11.26	1452808	15.76	813059	18.61
018	SAMPLE	268732-003	1106445	10.06	1717007	11.26	1478182	15.76	818335	18.60
019	SAMPLE	268732-002	1112709	10.06	1758048	11.26	1498119	15.76	799791	18.61
020	SAMPLE	268732-001	1119275	10.06	1747938	11.26	1440380	15.75	781193	18.60
021	SAMPLE	268556-006	1049895	10.06	1725785	11.26	1460381	15.76	799041	18.61
022	SAMPLE	268736-003	1058372	10.06	1702026	11.26	1495877	15.76	782506	18.60
023	SAMPLE	268734-001	1040433	10.06	1730618	11.26	1426216	15.76	800605	18.60
024	SAMPLE	268733-001	1108882	10.06	1763509	11.26	1515019	15.75	797784	18.60

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 485305964

Date : 07/31/15 Reference : ig713
Sequence : MSVOA09 igv Analyzed : 07/07/15 17:12

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	987439	11.04	1506110	12.30	1326780	16.67	740445	19.10
		LOWER LIMIT	493720	10.54	753055	11.80	663390	16.17	370223	18.60
		UPPER LIMIT	1974878	11.54	3012220	12.80	2653560	17.17	1480890	19.60
001	IB		1124730	11.03	2017597	12.29	1954760	16.66	870367	19.09
004	CCV	20PPB	1158431	11.00	2022004	12.27	1944148	16.64	1008685	19.09
005	BS	QC797874	1186250	11.01	2036955	12.28	1950523	16.65	971246	19.09
008	BSD	QC797875	1150168	11.03	1973923	12.29	1867942	16.66	947535	19.09
010	BLANK	QC797876	1180346	11.03	1963006	12.29	1779358	16.66	837186	19.09
011	SAMPLE	268513-011	1117020	11.03	1911656	12.29	1756524	16.66	816318	19.09
012	SAMPLE	268513-015	1114428	11.03	1911849	12.29	1677544	16.66	794489	19.09
013	SAMPLE	268513-024	1033295	11.03	1789625	12.30	1694700	16.66	775036	19.10
014	SAMPLE	268556-001	1035138	11.04	1806514	12.30	1706129	16.66	786188	19.10
015	SAMPLE	268556-003	1044423	11.04	1805906	12.30	1669828	16.66	842533	19.10
016	SAMPLE	268556-005	1017130	11.03	1788480	12.30	1689575	16.66	759948	19.10
017	SAMPLE	268556-008	1012762	11.03	1791963	12.29	1671011	16.66	772586	19.09
018	SAMPLE	268556-010	1020796	11.03	1794274	12.29	1691555	16.66	777212	19.10
019	SAMPLE	268557-001	1031442	11.03	1797054	12.29	1696769	16.65	781778	19.10
020	SAMPLE	268558-001	1014447	11.03	1776847	12.29	1666425	16.66	778900	19.09
021	SAMPLE	268563-015	1094064	11.03	1861286	12.29	1682953	16.66	780511	19.10
022	SAMPLE	268569-010	998292	11.03	1748221	12.29	1638246	16.66	744861	19.10

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 835304280

Date : 07/30/15 Reference : kdr19
Sequence : MSVOA11 kgu Analyzed : 04/28/15 18:04

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	581219	10.64	890118	11.57	786254	14.68	427104	16.96
		LOWER LIMIT	290610	10.14	445059	11.07	393127	14.18	213552	16.46
		UPPER LIMIT	1162438	11.14	1780236	12.07	1572508	15.18	854208	17.46
002	IB		641133	10.63	995572	11.56	800303	14.67	346786	16.94
004	CCV		701733	10.63	1085681	11.56	946472	14.67	450723	16.93
006	CCV/BS	QC797676	714661	10.63	1116018	11.56	956351	14.67	482576	16.93
007	BSD	QC797677	734597	10.63	1148983	11.56	961283	14.67	484377	16.93
009	BLANK	QC797678	660081	10.63	1029647	11.56	838665	14.67	367389	16.93
010	SAMPLE	268513-026	667955	10.63	1045394	11.56	839447	14.66	370487	16.93
011	SAMPLE	268513-025	662725	10.63	1036236	11.56	840417	14.67	368339	16.93
012	SAMPLE	268556-009	641556	10.63	1008658	11.56	608831	14.67	359923	16.93
013	SAMPLE	268513-001	645150	10.63	1003804	11.56	825188	14.67	356706	16.93
014	SAMPLE	268513-002	636638	10.63	993152	11.56	821881	14.67	366368	16.93
015	SAMPLE	268549-001	622930	10.63	985691	11.56	800335	14.67	353977	16.93
016	SAMPLE	268466-001	625878	10.63	989765	11.56	811191	14.67	363586	16.93
017	SAMPLE	268410-003	615228	10.63	977832	11.56	798645	14.67	354116	16.93
018	SAMPLE	268465-001	620876	10.63	979249	11.56	818324	14.67	376013	16.93
019	SAMPLE	268410-005	628481	10.63	991585	11.56	807745	14.67	348554	16.93
020	SAMPLE	268410-006	619467	10.63	979606	11.56	800537	14.67	354144	16.93
021	SAMPLE	268556-007	609228	10.63	959029	11.56	773633	14.67	344012	16.93
022	SAMPLE	268556-002	599685	10.63	955556	11.56	789631	14.67	364035	16.93
023	SAMPLE	268556-004	589817	10.63	941373	11.56	762302	14.67	338973	16.93
024	SAMPLE	268556-006	591009	10.63	947794	11.56	773705	14.67	337612	16.93
026	SAMPLE	268580-001	589162	10.63	944407	11.56	774402	14.67	341148	16.94

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 835304280

Date : 07/30/15 Reference : kgu05
Sequence : MSVOA11 kgu Analyzed : 07/30/15 09:41

#	Type	Sample ID	PFLBZ	RT
		ICAL STD	635830	10.63
		LOWER LIMIT	317915	10.13
		UPPER LIMIT	1271660	11.13
006	CCV/BS	QC797676	714661	10.63
026	SAMPLE	268580-001	589162	10.63

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 835311450

Date : 08/04/15 Reference : kdr19
Sequence : MSVOA11 kh4 Analyzed : 04/28/15 18:04

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	581219	10.64	890118	11.57	786254	14.68	427104	16.96
		LOWER LIMIT	290610	10.14	445059	11.07	393127	14.18	213552	16.46
		UPPER LIMIT	1162438	11.14	1780236	12.07	1572508	15.18	854208	17.46
002	IB		479237	10.63	776919	11.56	633803	14.67	273978	16.93
004	CCV		567281	10.63	895898	11.56	766643	14.66	373670	16.93
005	BS	QC798149	510084	10.63	831019	11.56	715361	14.66	359137	16.93
006	BSD	QC798150	576668	10.63	916290	11.56	802347	14.67	404624	16.93
008	BLANK	QC798151	488094	10.63	804681	11.56	674796	14.67	292792	16.93
009	SAMPLE	268556-005	522622	10.63	839163	11.56	691849	14.66	299239	16.93
010	SAMPLE	268618-007	508385	10.63	826019	11.56	687201	14.67	300996	16.93
011	SAMPLE	268620-005	499869	10.63	796611	11.56	668931	14.67	293774	16.93
012	SAMPLE	268638-001	492573	10.63	805228	11.56	674339	14.67	288538	16.93

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475253923

Instrument : MSVOA08 Begun : 06/25/15 08:03
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hfp01	IB				06/25/15 08:03	1.0	1	?t
002	hfp02	IB				06/25/15 08:37	1.0	1	?t
003	hfp03	TUN	BFB			06/25/15 09:42	1.0	2	
004	hfp04	TUN	BFB			06/25/15 09:53	1.0	2	
005	hfp05	TUN	BFB			06/25/15 10:29	1.0	2	
006	hfp06	X	IB			06/25/15 10:53	1.0	1	
007	hfp07	IB	CALIB			06/25/15 11:26	1.0	1	
008	hfp08	ICAL				06/25/15 12:00	1.0	3 4 5 6 1	
009	hfp09	ICAL				06/25/15 12:34	1.0	3 4 5 6 1	
010	hfp10	ICAL				06/25/15 13:07	1.0	3 4 5 6 1	
011	hfp11	ICAL				06/25/15 13:41	1.0	3 4 5 6 1	
012	hfp12	ICAL				06/25/15 14:15	1.0	3 4 5 6 1	
013	hfp13	ICAL				06/25/15 14:49	1.0	3 4 5 6 1	
014	hfp14	ICAL				06/25/15 15:23	1.0	3 4 5 6 1	
015	hfp15	ICAL				06/25/15 15:57	1.0	3 4 5 6 1	
016	hfp16	ICAL				06/25/15 16:31	1.0	3 4 5 6 1	
017	hfp17	ICV				06/25/15 17:05	1.0	7 1	
018	hfp18	ICV				06/25/15 17:39	1.0	8 9 10 1	
019	hfp19	X	IB			06/25/15 18:13	1.0	1	
020	hfp20	X	IB			06/25/15 18:47	1.0	1	
021	hfp21	X	IB			06/25/15 19:20	1.0	1	
022	hfp22	X	IB			06/25/15 19:54	1.0	3 4 11 12 1	cc- cs

DJA 06/26/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 22.

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

Standards used: 1=S27244 2=S27180 3=S26360 4=S27172 5=S27416 6=S26220 7=S26064 8=S27331 9=S27404 10=S27533 11=S27151 12=S25155

Flags used: -=low bias ?t=missing tune cc=CCV CCC failure cs=CCV SPCC failure

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CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475304292

Instrument : MSVOA08 Begun : 07/30/15 07:32
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hgu01	X	HG			07/30/15 07:32	1.0	1	
002	hgu02	X	IB			07/30/15 08:05	1.0	1	
003	hgu03	TUN	BFB			07/30/15 08:42	1.0	2	t
004	hgu04	TUN	BFB			07/30/15 08:59	1.0	2	t
005	hgu05	TUN	BFB			07/30/15 09:35	1.0	2	t
006	hgu06	TUN	BFB			07/30/15 10:16	1.0	2	
007	hgu07	CCV				07/30/15 10:43	1.0	3 4 5 6 1	cc+
008	hgu08	CCV				07/30/15 12:08	1.0	3 4 5 6 1	
009	hgu09	X				07/30/15 12:51	1.0	7 1	
010	hgu10	BS	QC797679	Water	225639	07/30/15 13:24	1.0	8 9 10 11 1	
011	hgu11	BSD	QC797680	Water	225639	07/30/15 13:58	1.0	8 9 10 11 1	
012	hgu12	X	IB			07/30/15 14:32	1.0	1	
013	hgu13	BLANK	QC797681	Water	225639	07/30/15 15:05	1.0	1	
014	hgu14	SAMPLE	268513-011	Water	225639	07/30/15 15:39	1.0	1	
015	hgu15	SAMPLE	268513-024	Water	225639	07/30/15 16:13	1.0	1	
016	hgu16	SAMPLE	268556-010	Water	225639	07/30/15 16:47	1.0	1	
017	hgu17	SAMPLE	268556-005	Water	225639	07/30/15 17:21	1.0	1	
018	hgu18	SAMPLE	268556-008	Water	225639	07/30/15 17:55	1.0	1	
019	hgu19	SAMPLE	268556-001	Water	225639	07/30/15 18:29	2.0	1	foamer
020	hgu20	SAMPLE	268556-003	Water	225639	07/30/15 19:02	3.333	1	foamer
021	hgu21	SAMPLE	268513-015	Water	225639	07/30/15 19:36	3.333	1	foamer
022	hgu22	MSS	268557-001	Water	225639	07/30/15 20:10	5.0	1	foamer
023	hgu23	SAMPLE	268558-001	Water	225639	07/30/15 20:44	250.0	1	foamer
024	hgu24	MS	QC797770	Water	225639	07/30/15 21:18	5.0	8 9 10 11 1	
025	hgu25	MSD	QC797771	Water	225639	07/30/15 21:51	5.0	8 9 10 11 1	foamer
026	hgu26	X	IB			07/30/15 22:25	1.0	1	
027	hgu27	X	IB			07/30/15 22:59	1.0	1	

DJA 07/31/15 : retuned after file 4

DJA 07/31/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 27.

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27559 5=S27699 6=S26220 7=S27642 8=S27558 9=S27556 10=S27533 11=S26064

Flags used: +=high bias cc=CCV CCC failure t=tune failure

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475305775

Instrument : MSVOA08 Begun : 07/31/15 08:15
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hgv01	X	HG			07/31/15 08:15	1.0	1	
002	hgv02	X	IB			07/31/15 08:48	1.0	1	
003	hgv03	TUN	BFB			07/31/15 09:18	1.0	2	
004	hgv04	CCV				07/31/15 09:45	1.0	3 4 5 6 1	
005	hgv05	ICAL				07/31/15 10:46	1.0	7 1	
006	hgv06	BS	QC797837	Water	225681	07/31/15 11:19	1.0	8 9 10 11 1 7	
007	hgv07	BSD	QC797838	Water	225681	07/31/15 11:53	1.0	8 9 10 11 1 7	
008	hgv08	X	IB			07/31/15 12:26	1.0	1	
009	hgv09	BLANK	QC797839	Water	225681	07/31/15 13:00	1.0	1	
010	hgv10	SAMPLE	268580-001	Water	225681	07/31/15 13:34	1.0	1	pH > 2
011	hgv11	SAMPLE	268563-015	Water	225681	07/31/15 14:07	33.33	1	foamer, pH > 2
012	hgv12	SAMPLE	268556-009	Water	225681	07/31/15 14:41	1.0	1	
013	hgv13	SAMPLE	268513-025	Water	225681	07/31/15 15:15	1.0	1	
014	hgv14	SAMPLE	268513-026	Water	225681	07/31/15 15:49	1.0	1	
015	hgv15	SAMPLE	268513-001	Water	225681	07/31/15 16:23	1.0	1	
016	hgv16	SAMPLE	268513-002	Water	225681	07/31/15 16:57	1.0	1	
017	hgv17	SAMPLE	268569-001	Water	225681	07/31/15 17:30	1.0	1	
018	hgv18	SAMPLE	268569-002	Water	225681	07/31/15 18:04	1.0	1	1:MEK=110
019	hgv19	SAMPLE	268569-005	Water	225681	07/31/15 18:38	1.0	1	2:ISOPROH=5300
020	hgv20	SAMPLE	268569-007	Water	225681	07/31/15 19:12	1.0	1	
021	hgv21	SAMPLE	268556-007	Water	225681	07/31/15 19:45	2.0	1	foamer
022	hgv22	SAMPLE	268556-002	Water	225681	07/31/15 20:19	3.333	1	foamer
023	hgv23	SAMPLE	268556-004	Water	225681	07/31/15 20:53	4.0	1	foamer
024	hgv24	X	IB			07/31/15 21:27	1.0	1	
025	hgv25	X	IB			07/31/15 22:01	1.0	1	

DJA 07/31/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 9.

NJT 07/31/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 10 through 10.

LW 07/31/15 : Reviewed through file 10

NJT 08/01/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 11 through 25.

DJA: 07/31/15 NJT: 08/01/15 LW: 08/03/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27559 5=S27699 6=S26220 7=S27642 8=S27558 9=S27556 10=S27533 11=S26064

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475314337

Instrument : MSVOA08 Begun : 08/06/15 06:57
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hh601	X	HG			08/06/15 06:57	1.0	1	
002	hh602	X	IB			08/06/15 07:30	1.0	1	
003	hh603	TUN	BFB			08/06/15 08:42	1.0	2	
004	hh604	CCV				08/06/15 09:08	1.0	3 4 5 6 1	
005	hh605	BS	QC798441	Water	225842	08/06/15 10:25	1.0	7 8 9 10 1	
006	hh606	BSD	QC798442	Water	225842	08/06/15 10:59	1.0	7 8 9 10 1	
007	hh607	X	A/A			08/06/15 11:32	1.0	1	
008	hh608	X	A/A			08/06/15 12:06	1.0	1	
009	hh609	BLANK	QC798443	Water	225842	08/06/15 12:40	1.0	1	
010	hh610	SAMPLE	268736-004	Water	225842	08/06/15 13:20	1.0	1	
011	hh611	SAMPLE	268704-001	Water	225842	08/06/15 13:54	4000	1	
012	hh612	X	IB			08/06/15 14:28	1.0	1	
013	hh613	SAMPLE	268740-002	Water	225842	08/06/15 15:01	1.0	1	
014	hh614	SAMPLE	268694-001	Water	225842	08/06/15 15:35	1.0	1	
015	hh615	SAMPLE	268704-001	Water	225842	08/06/15 16:09	4000	1	
016	hh616	SAMPLE	268736-002	Water	225842	08/06/15 16:43	1.0	1	
017	hh617	X	IB			08/06/15 17:16	1.0	1	
018	hh618	SAMPLE	268732-003	Water	225842	08/06/15 17:50	8.333	1	
019	hh619	SAMPLE	268732-002	Water	225842	08/06/15 18:24	12.50	1	
020	hh620	SAMPLE	268732-001	Water	225842	08/06/15 18:57	25.0	1	
021	hh621	SAMPLE	268556-006	Water	225842	08/06/15 19:31	7.143	1	foamer
022	hh622	SAMPLE	268736-003	Water	225842	08/06/15 20:05	4.0	1	
023	hh623	SAMPLE	268734-001	Water	225842	08/06/15 20:39	50.0	1	foamer, high NT, pH > 2, 4:ACE=2100
024	hh624	SAMPLE	268733-001	Water	225842	08/06/15 21:12	50.0	1	<<t
025	hh625	X	IB			08/06/15 21:46	1.0	1	
026	hh626	X	IB			08/06/15 22:19	1.0	1	

DJA 08/06/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 11.

DJA 08/06/15 : Matrix spikes were not performed for this analysis in batch 225842 due to insufficient sample amount.

DJA 08/07/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 12 through 26.

Analyst: DJA Date: 08/06/15 Reviewer: LW Date: 08/07/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27823 5=S27699 6=S26220 7=S27558 8=S27556 9=S27533 10=S26064

Flags used: <<t=out of clock

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CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 485271359

Instrument : MSVOA09 Begun : 07/07/15 10:38
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	ig701	TUN	BFB			07/07/15 10:38	1.0	1	
002	ig702	TUN	BFB			07/07/15 10:49	1.0	1	
003	ig703	IB				07/07/15 11:27	1.0	2	
004	ig704	IB				07/07/15 12:02	1.0	2	
005	ig705	IB				07/07/15 12:36	1.0	2	
006	ig706	IB	CALIB			07/07/15 13:11	1.0	2	
007	ig707	ICAL	.25/.5PPB			07/07/15 13:45	1.0	3 4 5 6 2	
008	ig708	ICAL	.5/1PPB			07/07/15 14:19	1.0	2 3 4 5 6	
009	ig709	ICAL	2PPB			07/07/15 14:54	1.0	3 4 5 6 2	
010	ig710	ICAL	5PPB			07/07/15 15:28	1.0	2 3 4 5 6	
011	ig711	ICAL	10PPB			07/07/15 16:03	1.0	2 3 4 5 6	
012	ig712	ICAL	20PPB			07/07/15 16:37	1.0	2 3 4 5 6	
013	ig713	ICAL	50PPB			07/07/15 17:12	1.0	2 3 4 5 6	
014	ig714	ICAL	75PPB			07/07/15 17:46	1.0	2 3 4 5 6	
015	ig715	ICAL	100PPB			07/07/15 18:21	1.0	2 3 4 5 6	
016	ig716	ICV	GAS			07/07/15 18:56	1.0	7 2	
017	ig717	ICV				07/07/15 19:30	1.0	8 9 10 2	
018	ig718	IB				07/07/15 20:04	1.0	2	

DAR 07/08/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 18.

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

Standards used: 1=S27180 2=S27403 3=S26360 4=S27559 5=S27416 6=S26220 7=S26358 8=S27558 9=S27556 10=S27533

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 485305964

Instrument : MSVOA09 Begun : 07/31/15 11:24
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	igv01	IB				07/31/15 11:24	1.0	1	?t
002	igv02	TUN	BFB			07/31/15 11:52	1.0	2	t
003	igv03	TUN	BFB			07/31/15 12:08	1.0	2	
004	igv04	CCV	20PPB			07/31/15 12:35	1.0	3 4 5 6 1	
005	igv05	BS	QC797874	Water	225691	07/31/15 13:23	1.0	7 8 9 10 1	
006	igv06	X	QC797875	Water	225691	07/31/15 13:57	1.0	7 8 9 10 1	spk
007	igv07	X	IB			07/31/15 14:32	1.0	1	
008	igv08	BSD	QC797875	Water	225691	07/31/15 15:06	1.0	7 8 9 10 1	
009	igv09	X	IB			07/31/15 15:50	1.0	1	
010	igv10	BLANK	QC797876	Water	225691	07/31/15 16:25	1.0	1	
011	igv11	SAMPLE	268513-011	Water	225691	07/31/15 17:00	1.0	1	
012	igv12	SAMPLE	268513-015	Water	225691	07/31/15 17:34	3.333	1	foamer
013	igv13	SAMPLE	268513-024	Water	225691	07/31/15 18:09	1.0	1	
014	igv14	SAMPLE	268556-001	Water	225691	07/31/15 18:43	2.0	1	foamer
015	igv15	SAMPLE	268556-003	Water	225691	07/31/15 19:17	3.333	1	foamer, headspace <= 1 mL
016	igv16	SAMPLE	268556-005	Water	225691	07/31/15 19:52	1.0	1	
017	igv17	SAMPLE	268556-008	Water	225691	07/31/15 20:26	1.0	1	
018	igv18	SAMPLE	268556-010	Water	225691	07/31/15 21:01	1.0	1	
019	igv19	SAMPLE	268557-001	Water	225691	07/31/15 21:35	5.0	1	foamer
020	igv20	SAMPLE	268558-001	Water	225691	07/31/15 22:10	250.0	1	foamer
021	igv21	SAMPLE	268563-015	Water	225691	07/31/15 22:45	33.33	1	foamer, pH > 2
022	igv22	SAMPLE	268569-010	Water	225691	07/31/15 23:19	1.0	1	1:ACE=490
023	igv23	X	IB			07/31/15 23:53	1.0	1	
024	igv24	X	IB			08/01/15 00:28	1.0	1	

NJT 08/01/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 24.

NJT 08/01/15 : Matrix spikes were not performed for this analysis in batch 225691 due to insufficient sample amount.

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/04/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27823 5=S27699 6=S26220 7=S27007 8=S27558 9=S27556 10=S27533

Flags used: ?t=missing tune spk=5% spike rule t=tune failure

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 835169070

Instrument : MSVOA11 Begun : 04/27/15 09:50
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	kdr01	X	IB			04/27/15 09:50	1.0	1	
002	kdr02	X	LOWPT			04/27/15 10:18	1.0	1	
003	kdr03	TUN	BFB			04/27/15 12:34	1.0	2	t
004	kdr04	TUN	BFB			04/27/15 13:12	1.0	2	
005	kdr05	TUN	BFB			04/27/15 14:45	1.0	2	
006	kdr06	TUN	BFB			04/27/15 17:03	1.0	2	
007	kdr07	IB				04/27/15 17:27	1.0	1	
008	kdr08	IB				04/28/15 08:46	1.0	1	<<t
009	kdr09	TUN	BFB			04/28/15 11:39	1.0	2	
010	kdr10	IB				04/28/15 12:12	1.0	1	
011	kdr11	IB				04/28/15 13:48	1.0	1	
012	kdr12	IB	CALIB			04/28/15 14:49	1.0	1	
013	kdr13	ICAL	.25/5PPB			04/28/15 15:17	1.0	3 4 5 6 1	
014	kdr14	ICAL	.5/1PPB			04/28/15 15:45	1.0	3 4 5 6 1	
015	kdr15	ICAL	2PPB			04/28/15 16:12	1.0	3 4 5 6 1	
016	kdr16	ICAL	5PPB			04/28/15 16:40	1.0	3 4 5 6 1	
017	kdr17	ICAL	10PPB			04/28/15 17:08	1.0	3 4 5 6 1	
018	kdr18	ICAL	20PPB			04/28/15 17:36	1.0	3 4 5 6 1	
019	kdr19	ICAL	50PPB			04/28/15 18:04	1.0	3 4 5 6 1	
020	kdr20	ICAL	75PPB			04/28/15 18:31	1.0	3 4 5 6 1	
021	kdr21	ICAL	100PPB			04/28/15 18:59	1.0	3 4 5 6 1	
022	kdr22	ICV	GAS			04/28/15 19:27	1.0	7 1	
023	kdr23	ICV				04/28/15 19:55	1.0	8 9 10 1	

DAR 04/29/15 : adjusted tune before file 8

DAR 04/29/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 23.

Analyst: DAR Date: 04/29/15 Reviewer: LW Date: 05/01/15

Standards used: 1=S26882 2=S26000 3=S25695 4=S26948 5=S27151 6=S26957 7=S26358 8=S26876 9=S27022 10=S26759

Flags used: <<t=out of clock t=tune failure

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CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 835304280

Instrument : MSVOA11 Begun : 07/30/15 07:20
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	kgu01	X	HIGH GAS			07/30/15 07:20	1.0	1	
002	kgu02	IB				07/30/15 07:48	1.0	1	?t
003	kgu03	TUN	BFB			07/30/15 08:35	1.0	2	
004	kgu04	CCV				07/30/15 09:03	1.0	3 4 5 6 1	
005	kgu05	ICAL	A/A			07/30/15 09:41	1.0	7 1	
006	kgu06	CCV/BS	QC797676	Water	225638	07/30/15 10:09	1.0	8 9 10 11 1 7	
007	kgu07	BSD	QC797677	Water	225638	07/30/15 10:36	1.0	8 9 10 11 1 7	
008	kgu08	X	IB			07/30/15 11:04	1.0	1	
009	kgu09	BLANK	QC797678	Water	225638	07/30/15 11:32	1.0	1	
010	kgu10	SAMPLE	268513-026	Water	225638	07/30/15 12:27	1.0	1	
011	kgu11	SAMPLE	268513-025	Water	225638	07/30/15 12:55	1.0	1	
012	kgu12	SAMPLE	268556-009	Water	225638	07/30/15 13:22	1.0	1	
013	kgu13	SAMPLE	268513-001	Water	225638	07/30/15 13:50	1.0	1	
014	kgu14	SAMPLE	268513-002	Water	225638	07/30/15 14:18	1.0	1	
015	kgu15	SAMPLE	268549-001	Water	225638	07/30/15 14:46	1.0	1	
016	kgu16	SAMPLE	268466-001	Water	225638	07/30/15 15:14	1.0	1	pH > 2
017	kgu17	SAMPLE	268410-003	Water	225638	07/30/15 15:41	1.0	1	
018	kgu18	SAMPLE	268465-001	Water	225638	07/30/15 16:09	1.0	1	
019	kgu19	SAMPLE	268410-005	Water	225638	07/30/15 16:37	1.0	1	
020	kgu20	SAMPLE	268410-006	Water	225638	07/30/15 17:05	1.0	1	
021	kgu21	SAMPLE	268556-007	Water	225638	07/30/15 17:33	2.0	1	foamer
022	kgu22	SAMPLE	268556-002	Water	225638	07/30/15 18:00	3.333	1	foamer, headspace <= 1 mL
023	kgu23	SAMPLE	268556-004	Water	225638	07/30/15 18:28	4.0	1	foamer
024	kgu24	SAMPLE	268556-006	Water	225638	07/30/15 18:56	7.143	1	foamer
025	kgu25	X	IB			07/30/15 19:24	1.0	1	
026	kgu26	SAMPLE	268580-001	Water	225638	07/30/15 19:52	1.0	1	pH > 2
027	kgu27	X	IB			07/30/15 20:19	1.0	1	

LW 07/30/15 : Reviewed for 268465

DJA 07/31/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 27.

DJA 07/31/15 : Matrix spikes were not performed for this analysis in batch 225638 due to insufficient sample amount.

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

Standards used: 1=S27697 2=S27180 3=S26360 4=S27559 5=S27699 6=S26220 7=S27642 8=S27558 9=S27556 10=S27533 11=S27008

Flags used: ?t=missing tune

Page 1 of 1

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 835311450

Instrument : MSVOA11 Begun : 08/04/15 06:50
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	kh401	X	HIGH GAS			08/04/15 06:50	1.0	1	
002	kh402	IB				08/04/15 07:17	1.0	1	?t
003	kh403	TUN	BFB			08/04/15 09:47	1.0	2	
004	kh404	CCV				08/04/15 10:17	1.0	3 4 5 6 1	
005	kh405	BS	QC798149	Water	225767	08/04/15 10:57	1.0	7 8 9 10 1	
006	kh406	BSD	QC798150	Water	225767	08/04/15 11:25	1.0	7 8 9 10 1	
007	kh407	X	IB			08/04/15 11:53	1.0	1	
008	kh408	BLANK	QC798151	Water	225767	08/04/15 12:20	1.0	1	
009	kh409	SAMPLE	268556-005	Water	225767	08/04/15 14:02	1.0	1	headspace <= 1 mL
010	kh410	SAMPLE	268618-007	Water	225767	08/04/15 14:30	1.0	1	
011	kh411	SAMPLE	268620-005	Water	225767	08/04/15 14:58	2.500	1	
012	kh412	SAMPLE	268638-001	Water	225767	08/04/15 15:25	50.0	1	
013	kh413	X	IB			08/04/15 15:53	1.0	1	
014	kh414	X	IB			08/04/15 16:21	1.0	1	

DJA 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 14.

DJA 08/05/15 : Matrix spikes were not performed for this analysis in batch 225767 due to insufficient sample amount.

Analyst: DJA Date: 08/05/15 Reviewer: LW Date: 08/05/15

Standards used: 1=S27697 2=S27180 3=S26360 4=S27823 5=S27699 6=S26220 7=S27558 8=S27556 9=S27533 10=S27008

Flags used: ?t=missing tune

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJ 7/30/15
For Undiluted samples, pH checked (initials/date): ~~JR 7/31/15~~

Batch #: 225638
Prep Date: 7/30/15
Instrument: MS11

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268513-1	A	✓					1X					
2	-2	↓	✓					↓					
3	-25	↓	✓					↓					
4	-26	↓	✓					↓					
5	268549-1	C	✓				1	1X	C.O ✓ 14 PCB, 124 TCB				
6	~~2685~~ 268466-1	C		4			1	1x	OD				
7	268556-4	B	✓			9		4X	foamer				
8	-6	↓	✓			10		7.14X	↓				
9	-7	↓	✓			11		2X	↓				
10	-9	A	✓					1x	TB				
11	268410-3	B	✓				1	1X	12 DBM fail low BS				
12	-4	↓	—	—			1	↓	put ff for $; in fridge on list				
13	-5	↓	✓				1	↓	↓				
14	-6	↓	✓				1	↓	↓				
15	268556-2	B	✓		dubc	12		3x	foamer				
16													
17	2684465.1	E	✓				2	1	TBA				
18	268580-1	D		7				1X	$ A/A				
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJA 7/30/15
For Undiluted samples, pH checked (initials/date): ZiA 7/31/15

Batch #: 225639
Prep Date: 7/30/15
Instrument: MS 8

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268556-1	B	✓			1		2x	foamer				
2	~~-2~~							~~3x~~	↓ DJA 7/30				
3	268557-1	B	✓			3		5x	foamer				
4	-1MS	↓	✓			A1		↓	↓ QC 797770				
5	-1MSD	↓	✓			A1		↓	↓ ↓ 1				
6	268558-1	B	✓			4		250x	↓				
7	~~268460-1~~						1	~~1x~~	~~F12 ✓~~ DJA 7/30				
8	268513-15	B	✓			5		3.33x	foamer				
9	-11	A	✓					1x	EB				
10	-24	A	✓					1x	EB				
11	268556-3	C	✓			6		3x	foamer				
12	-5	B	✓					1x					
13	-8	B	✓					1x					
14	-10	B	✓					1x	SB				
15													
16													
17													
18													
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJA 7/31
For Undiluted samples, pH checked (initials/date): NJT 7/31 - 8/1

Batch #: 225681
Prep Date: 7/31/15
Instrument: MS8

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
131	2685563-15	A		7		1		33.3x	foamer, compl -4				
132	2685513-26	B	✓				1	1X	c/v-/LOD: F12, naph, DBCP, 22DCP, Bromom TB				
3	-25	B	✓				1		TB				
4	-1	B	✓				1		EB				
5	-2	B	✓				1		EB				
136	2685560-9	B	✓				1		TB				
7	-7	C	✓			3	1	2x	foamer				
8	-2	C	✓			4	1	3.33x					
9	-4	C	✓			5	1	4x					
10	~~-6~~	~~C~~					~~1~~	~~714x~~	put ✓ for rerun				
1311	2685569-1	B	✓					1X					
12	-2	B	✓										
13	-5	B	✓										
14	-7	C	✓										
15	2685580-1	F		7			2	1X	needs 2cleve Due today #				
16													
17													
18													
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): NJT 7/31/15
For Undiluted samples, pH checked (initials/date): NJT 8/1/15

Batch #: 225691
Prep Date: 7/31/15
Instrument: MS9

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268513-15	C	✓			12		3.33x	foamer, V-/L-Acetone + CS2, TCE hit w/ ↑Surr				
2	-11	B	✓					1x					
3	-24	C	✓					↓					
4	268556-10	C	✓					1x					
5	-5	↓	✓					↓					
6	-8		✓										
7	-1	↓	✓			9		2x	foamer, TCE + Benzene hit w/ surr↑				
8	-3	B	✓		Small Bubble	11		3.33x	foamer,				
9	268557-1	C	✓			10		5x	↓				
10	268558-1	↓	✓			5		250x	↓				
11	268563-15	B		7		12	1	33.3x	Foamer, 2-clear		8/6		
12	268569-10	B	✓					1x					
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJ 8/4/15
For Undiluted samples, pH checked (initials/date): DJ 8/4/15

Batch #: 205767
Prep Date: 8/4/15
Instrument: MS11

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	2685620-5	B	✓			1	1	2.5X	OD				
2	2685556-5	A	✓		1mL		1	1X	CS2 htw ↑ser				
3	2685638-1	C	✓			9	1	50X	F113, PCE>LR				
4	2685618-7	F	✓				1	1X	↓ PCE c.o.v				
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJA 8/6/15
For Undiluted samples, pH checked (initials/date): 8/7/15

Batch #: 225842
Prep Date: 8/6/15
Instrument: MS 8

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
15 1	268736-1	A	—	—				1x					
2	-2	↓	✓					1x					
3	-3	↓	✓			3		4x					
4	-4	↓	✓					1x	TB				
5	268556-6	C	✓			4	1	7.14x	foamer; c-1v-1LED F12, naph, DBCB 22 DCB, Brom in vox fridge				
14 6	268694-1	B	✓				1	1x	chlorometh nH ✓ c-				
14 7	268704-1	B	✓			9	1	4000x	Acetone > LR $ Due Today				
15 8	268733-1	B	✓			5		50x					
15 9	268740-2	B	✓					1x	$ Due 8/7				
10 10	268734-1	B	3			6	DJA 8/6	~~5x~~	50x foamer				
11 11	268732-1	A	✓			9		25x	$ Due 8/7				
12	-2	↓	✓			10		12.5x	↓				
13	-3	↓	✓			11		~~7.14x~~	8.33x				
14	268704-1	C	✓			11	2	4000x	rerun not matrix				
15													
16													
17													
18													
19													
20													
21													
22													

Dilutions for 268556 MSVOA Water
Curtis & Tompkins Laboratories

Type	Sample ID	IDFs
SAMPLE	268556-001	2X
SAMPLE	268556-002	3.333X
SAMPLE	268556-003	3.333X
SAMPLE	268556-004	4X
SAMPLE	268556-006	7.143X
SAMPLE	268556-007	2X
MS	QC797770	5X
MSD	QC797771	5X

Case Narrative Addendum: Manual Integrations for 268556 GC/MS VOA (Water)

For CCV (MSVOA11 kh404):
Bromomethane: Corrected fronting or tailing peak integration.

For SAMPLE 268556-002 (MSVOA08 hgv22):
n-Butylbenzene: Picked or reassigned peak.

For SAMPLE 268556-006 (MSVOA11 kgu24):
cis-1,2-Dichloroethene: Combined split peak.

For BSD QC797838 (MSVOA08 hgv07):
Acrylonitrile: Corrected fronting or tailing peak integration for spike.

For Calibration MSVOA11 (835169070002):
Acetone: Corrected fronting or tailing peak integration in multiple levels.
Ethanol: Combined split peak in multiple levels.
Freon 12: Combined split peak in multiple levels.
2-Butanone: Combined split peak in multiple levels.

For ICV GAS (MSVOA11 kdr22):
Freon 12: Combined split peak.

For ICV (MSVOA11 kdr23):
Ethanol: Combined split peak.

For Calibration MSVOA08 (475253923002):
Acetone: Corrected fronting or tailing peak integration in (hfp10).
Ethanol: Corrected fronting or tailing peak integration in multiple levels.

For Calibration MSVOA09 (485271359002):
2-Butanone: Combined split peak in multiple levels.
Vinyl Acetate: Combined split peak in 10PPB (ig711).

Laboratory Job Number 268556

ANALYTICAL REPORT

Metals

Matrix: Filtrate

Curtis & Tompkins, Ltd.

Dissolved Arsenic

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Arsenic	Batch#:	225705
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000	Analyzed:	08/03/15

Field ID	Type	Lab ID	Result	LOQ	DL	Sampled
DIC85W06-072815	SAMPLE	268556-002	29	5.0	1.5	07/28/15
DIC85W06-072815X	SAMPLE	268556-003	28	5.0	1.5	07/28/15
ER-072815	SAMPLE	268556-005	4.0 U	5.0	1.5	07/29/15
SB-072915	SAMPLE	268556-010	4.0 U	5.0	1.5	07/29/15
	BLANK	QC797930	4.0 U	5.0	1.5	
	BLANK	QC797931	4.0 U	5.0	1.5	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Dissolved Iron

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Iron	Batch#:	225705
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000		

Field ID	Type	Lab ID	Result	LOQ	DL	Sampled	Analyzed
DIC85W06-072815	SAMPLE	268556-002	2,300	100	20	07/28/15	08/04/15
DIC85W06-072815X	SAMPLE	268556-003	8,700	100	20	07/28/15	08/04/15
ER-072815	SAMPLE	268556-005	50 U	100	20	07/29/15	08/04/15
SB-072915	SAMPLE	268556-010	50 U	100	20	07/29/15	08/04/15
	BLANK	QC797930	50 U	100	20		08/03/15
	BLANK	QC797931	50 U	100	20		08/03/15

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Dissolved Manganese

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Manganese	Batch#:	225705
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000	Analyzed:	08/03/15

Field ID	Type	Lab ID	Result	LOQ	DL	Sampled
DIC85W06-072815	SAMPLE	268556-002	4,500	5.0	1.0	07/28/15
DIC85W06-072815X	SAMPLE	268556-003	4,500	5.0	1.0	07/28/15
ER-072815	SAMPLE	268556-005	2.5 U	5.0	1.0	07/29/15
SB-072915	SAMPLE	268556-010	2.5 U	5.0	1.0	07/29/15
	BLANK	QC797930	2.5 U	5.0	1.0	
	BLANK	QC797931	2.5 U	5.0	1.0	

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Arsenic

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Arsenic	Batch#:	225705
Field ID:	DIC85W07-072815	Sampled:	07/28/15
MSS Lab ID:	268557-001	Received:	07/29/15
Matrix:	Filtrate	Prepared:	07/31/15
Units:	ug/L	Analyzed:	08/03/15
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC797932		100.0	95.49	95	80-120		
BSD	QC797933		100.0	95.95	96	80-120	0	20
MS	QC797934	13.31	100.0	128.3	115	80-120		
MSD	QC797935		100.0	121.2	108	80-120	6	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Iron

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Iron	Diln Fac:	1.000
Field ID:	DIC85W07-072815	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
BS	QC797932		10,000	10,350	104	80-120			08/03/15
BSD	QC797933		10,000	10,770	108	80-120	4	20	08/03/15
MS	QC797934	328.4	10,000	10,540	102	80-120			08/04/15
MSD	QC797935		10,000	10,200	99	80-120	3	20	08/04/15

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Manganese

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Manganese	Batch#:	225705
Field ID:	DIC85W07-072815	Sampled:	07/28/15
MSS Lab ID:	268557-001	Received:	07/29/15
Matrix:	Filtrate	Prepared:	07/31/15
Units:	ug/L	Analyzed:	08/03/15
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC797932		100.0	99.81	100	80-120		
BSD	QC797933		100.0	98.70	99	80-120	1	20
MS	QC797934	1,970	100.0	1,982	12 NM	80-120		
MSD	QC797935		100.0	1,992	22 NM	80-120	0	20

NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Arsenic

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Arsenic	Units:	ug/L
Field ID:	DIC85W07-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797936	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/03/15

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
13.31	5.000	20.00 U	25.00	NC	10

U= Not Detected at or above DL
NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Iron

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Iron	Units:	ug/L
Field ID:	DIC85W07-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797936	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/04/15

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
328.4	100.0	481.0 J	500.0	NC	10

J= Estimated value
NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Manganese

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Manganese	Units:	ug/L
Field ID:	DIC85W07-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797936	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/03/15

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
1,970	5.000	1,995	25.00	1	10

LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Arsenic

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Arsenic	Units:	ug/L
Field ID:	DIC85W07-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797937	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/04/15

MSS Result	Spiked	Result	%REC	Limits
13.31	100.0	123.2	110	75-125

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Iron

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Iron	Units:	ug/L
Field ID:	DIC85W07-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797937	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/04/15

MSS Result	Spiked	Result	%REC	Limits
328.4	10,000	12,130	118	75-125

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Manganese

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Manganese	Units:	ug/L
Field ID:	DIC85W07-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797937	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/04/15

MSS Result	Spiked	Result	%REC	Limits
1,970	100.0	2,056	86 NM	75-125

NM= Not Meaningful: Sample concentration > 4X spike concentration

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Arsenic

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Arsenic	Units:	ug/L
Field ID:	DIC85W06-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798414	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
28.66	5.000	49.58	25.00	NC	10

NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Iron

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Iron	Units:	ug/L
Field ID:	DIC85W06-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798414	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
2,310	100.0	2,192	500.0	5	10

LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Manganese

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Manganese	Units:	ug/L
Field ID:	DIC85W06-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798414	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15

MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
4,484	5.000	4,813	25.00	7	10

LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Arsenic

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Arsenic	Units:	ug/L
Field ID:	DIC85W06-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798415	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15

MSS Result	Spiked	Result	%REC	Limits
28.66	100.0	156.8	128 *	75-125

*= Value outside of QC limits; see narrative

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Iron

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Iron	Units:	ug/L
Field ID:	DIC85W06-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798415	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15

MSS Result	Spiked	Result	%REC	Limits
2,310	10,000	12,760	105	75-125

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Manganese

Lab #:	268556	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Analyte:	Manganese	Units:	ug/L
Field ID:	DIC85W06-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798415	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15

MSS Result	Spiked	Result	%REC	Limits
4,484	100.0	4,621	136 NM	75-125

NM= Not Meaningful: Sample concentration > 4X spike concentration

REPORTING SUMMARY FOR 268556 METALS Filtrate
Curtis & Tompkins Laboratories

Lab ID	Inst ID	Analyzed	IDF	AS	FE	MN
268556-002	MET08	08/03/15 02:14	1.0	+		+
268556-002	MET08	08/04/15 13:43	1.0			
268556-002	MET08	08/04/15 17:54	1.0		+	
268556-002	MET09	08/05/15 19:26	1.0			
268556-002	MET09	08/05/15 20:04	100.0			
268556-003	MET08	08/03/15 02:23	1.0	+		+
268556-003	MET08	08/04/15 18:02	1.0		+	
268556-005	MET08	08/03/15 02:48	1.0	+		+
268556-005	MET08	08/04/15 18:11	1.0		+	
268556-010	MET08	08/03/15 02:53	1.0	+		+
268556-010	MET08	08/04/15 18:29	1.0		+	
QC797930	MET08	08/03/15 00:39	1.0	+	+	+
QC797930	MET08	08/04/15 12:00	1.0			
QC797930	MET08	08/04/15 16:06	1.0			
QC797931	MET08	08/03/15 00:44	1.0	+	+	+
QC797931	MET08	08/04/15 12:05	1.0			
QC797931	MET08	08/04/15 16:11	1.0			
QC797932	MET08	08/03/15 00:49	1.0	+	+	+
QC797932	MET08	08/04/15 12:10	5.0			
QC797932	MET08	08/04/15 16:16	1.0			
QC797932	MET09	08/05/15 15:45	1.0			
QC797933	MET08	08/03/15 00:53	1.0	+	+	+
QC797933	MET08	08/04/15 12:16	5.0			
QC797933	MET08	08/04/15 16:20	1.0			
QC797933	MET09	08/05/15 15:49	1.0			
QC797934	MET08	08/03/15 01:22	1.0	+		+
QC797934	MET08	08/04/15 12:47	5.0			
QC797934	MET08	08/04/15 16:43	1.0		+	
QC797934	MET08	08/06/15 09:16	10.0			
QC797934	MET08	08/06/15 10:59	100.0			
QC797934	MET09	08/06/15 11:39	100.0			
QC797934	MET09	08/06/15 12:34	10.0			
QC797935	MET08	08/03/15 01:30	1.0	+		+
QC797935	MET08	08/04/15 12:56	5.0			
QC797935	MET08	08/04/15 17:07	1.0		+	
QC797935	MET08	08/06/15 09:21	10.0			
QC797935	MET08	08/06/15 11:04	100.0			
QC797935	MET09	08/06/15 11:44	100.0			
QC797935	MET09	08/06/15 12:38	10.0			
QC797936	MET08	08/03/15 01:38	5.0	+		+
QC797936	MET08	08/04/15 13:04	5.0			
QC797936	MET08	08/04/15 17:15	5.0		+	

REPORTING SUMMARY FOR 268556 METALS Filtrate
Curtis & Tompkins Laboratories

Lab ID	Inst ID	Analyzed	IDF	AS	FE	MN
QC797937	MET08	08/03/15 01:46	1.0			
QC797937	MET08	08/04/15 13:13	1.0	+		+
QC797937	MET08	08/04/15 17:23	1.0		+	
QC798414	MET09	08/05/15 19:38	5.0	+	+	+
QC798414	MET09	08/05/15 20:15	500.0			
QC798415	MET09	08/05/15 19:51	1.0	+	+	+
QC798415	MET09	08/05/15 20:37	100.0			

ICP Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/02/15 19:35	1.0		
002	met08_sn_6010	ICAL	L1			08/02/15 19:40	1.0	1	
003	met08_sn_6010	ICAL	L2			08/02/15 19:45	1.0	2	
004	met08_sn_6010	ICAL	L3			08/02/15 19:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/02/15 19:55	1.0	4	
006	met08_sn_6010	ICAL	L5			08/02/15 20:01	1.0	5	
007	met08_sn_6010	ICV				08/02/15 20:08	1.0	6	
008	met08_sn_6010	CRI				08/02/15 20:13	1.0	7	
009	met08_sn_6010	ICB				08/02/15 20:17	1.0		
010	met08_sn_6010	ICSA				08/02/15 20:22	1.0	8	10:MG=520000
011	met08_sn_6010	ICSAB				08/02/15 20:48	1.0	9	5:AL=520000
012	met08_sn_6010	SAMPLE	268559-006	Water	225651	08/02/15 20:53	1.0		1:NA=160000
013	met08_sn_6010	X	RINSE			08/02/15 21:02	1.0		
014	met08_sn_6010	BS	QC797259	Wipe	225531	08/02/15 21:08	5.0		
015	met08_sn_6010	BSD	QC797260	Wipe	225531	08/02/15 21:13	5.0		
016	met08_sn_6010	SAMPLE	268228-001	Wipe	225531	08/02/15 21:18	1.0		
017	met08_sn_6010	SAMPLE	268234-001	Wipe	225531	08/02/15 21:23	1.0		
018	met08_sn_6010	X	RINSE			08/02/15 21:28	1.0		
019	met08_sn_6010	BLANK	QC797261	Miscell.	225532	08/02/15 21:33	1.0		
020	met08_sn_6010	BS	QC797262	Miscell.	225532	08/02/15 21:38	5.0		
021	met08_sn_6010	BSD	QC797263	Miscell.	225532	08/02/15 21:44	5.0		
022	met08_sn_6010	CCV				08/02/15 21:49	1.0	10	
023	met08_sn_6010	CCB				08/02/15 21:56	1.0		
024	met08_sn_6010	SAMPLE	268228-001	Miscell.	225532	08/02/15 22:01	10.0		
025	met08_sn_6010	SAMPLE	268231-001	Miscell.	225532	08/02/15 22:07	10.0		
026	met08_sn_6010	SAMPLE	268233-001	Miscell.	225532	08/02/15 22:12	10.0		
027	met08_sn_6010	SAMPLE	268240-001	Miscell.	225532	08/02/15 22:17	10.0		
028	met08_sn_6010	SAMPLE	268247-001	Miscell.	225532	08/02/15 22:22	10.0		
029	met08_sn_6010	X	RINSE			08/02/15 22:27	1.0		
030	met08_sn_6010	BLANK	QC797528	Wipe	225605	08/02/15 22:32	1.0		
031	met08_sn_6010	BS	QC797529	Wipe	225605	08/02/15 22:37	5.0		
032	met08_sn_6010	BSD	QC797530	Wipe	225605	08/02/15 22:42	5.0		
033	met08_sn_6010	SAMPLE	268402-001	Wipe	225605	08/02/15 22:47	1.0		3:FE=120000
034	met08_sn_6010	CCV				08/02/15 22:55	1.0	10	
035	met08_sn_6010	XCCB				08/02/15 23:03	1.0		
036	met08_sn_6010	CCB				08/02/15 23:06	1.0		
037	met08_sn_6010	SAMPLE	268402-002	Wipe	225605	08/02/15 23:12	1.0		4:FE=290000
038	met08_sn_6010	SAMPLE	268402-003	Wipe	225605	08/02/15 23:19	1.0		
039	met08_sn_6010	X	RINSE			08/02/15 23:24	1.0		
040	met08_sn_6010	BLANK	QC797803	Filtrate	225672	08/02/15 23:29	1.0		
041	met08_sn_6010	BLANK	QC797804	Filtrate	225672	08/02/15 23:34	1.0		
042	met08_sn_6010	BS	QC797805	Filtrate	225672	08/02/15 23:39	1.0		
043	met08_sn_6010	BSD	QC797806	Filtrate	225672	08/02/15 23:44	1.0		
044	met08_sn_6010	MSS	268460-003	Filtrate	225672	08/02/15 23:48	1.0		1:NA=440000
045	met08_sn_6010	MS	QC797807	Filtrate	225672	08/02/15 23:53	1.0		1:NA=410000
046	met08_sn_6010	MSD	QC797808	Filtrate	225672	08/02/15 23:57	1.0		1:NA=440000
047	met08_sn_6010	CCV				08/03/15 00:01	1.0	10	
048	met08_sn_6010	CCB				08/03/15 00:09	1.0		
049	met08_sn_6010	SER	QC797809	Filtrate	225672	08/03/15 00:14	5.0		
050	met08_sn_6010	PDS	QC797810	Filtrate	225672	08/03/15 00:19	1.0	11 12 13	
051	met08_sn_6010	SAMPLE	268430-001	Filtrate	225672	08/03/15 00:23	1.0		1:NA=120000
052	met08_sn_6010	SAMPLE	268430-002	Filtrate	225672	08/03/15 00:28	1.0		1:NA=260000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	X	RINSE			08/03/15 00:34	1.0		
054	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/03/15 00:39	1.0		
055	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/03/15 00:44	1.0		
056	met08_sn_6010	BS	QC797932	Filtrate	225705	08/03/15 00:49	1.0		
057	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/03/15 00:53	1.0		
058	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/03/15 00:57	1.0		3:MG=560000
059	met08_sn_6010	CCV				08/03/15 01:06	1.0	10	
060	met08_sn_6010	XCCB				08/03/15 01:13	1.0		
061	met08_sn_6010	CCB				08/03/15 01:17	1.0		
062	met08_sn_6010	MS	QC797934	Filtrate	225705	08/03/15 01:22	1.0		3:MG=530000
063	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/03/15 01:30	1.0		3:MG=530000
064	met08_sn_6010	SER	QC797936	Filtrate	225705	08/03/15 01:38	5.0		2:NA=940000
065	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/03/15 01:46	1.0	11 12 13	3:MG=510000
066	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/03/15 01:54	1.0		
067	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/03/15 01:59	10.0		
068	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/03/15 02:04	1.0		
069	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/03/15 02:09	1.0		
070	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/03/15 02:14	1.0		4:MG=580000
071	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/03/15 02:23	1.0		4:MG=570000
072	met08_sn_6010	CCV				08/03/15 02:31	1.0	10	
073	met08_sn_6010	XCCB				08/03/15 02:39	1.0		
074	met08_sn_6010	CCB				08/03/15 02:43	1.0		
075	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/03/15 02:48	1.0		
076	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/03/15 02:53	1.0		
077	met08_sn_6010	SAMPLE	268558-001	Filtrate	225705	08/03/15 02:58	1.0		4:NA=1900000
078	met08_sn_6010	CCV				08/03/15 03:07	1.0	10	
079	met08_sn_6010	XCCB				08/03/15 03:15	1.0		
080	met08_sn_6010	CCB				08/03/15 03:19	1.0		

NCD 08/03/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 80.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85309335

Date : 08/02/15 Reference : met08_sn_6010
Sequence : MET08 08/02/15 Analyzed : 08/02/15 19:40

#	Type	Sample ID	Y A
		ICAL STD	3792342
		LOWER LIMIT	1137702
		UPPER LIMIT	4550810
009	ICB		3818530
010	ICSA		3268174
011	ICSAB		3232405
034	CCV		3726955
036	CCB		3734799
044	MSS	268460-003	3654613
047	CCV		3726955
048	CCB		3801776
051	SAMPLE	268430-001	3765508
052	SAMPLE	268430-002	3668109
054	BLANK	QC797930	3808425
055	BLANK	QC797931	3816516
056	BS	QC797932	3778177
057	BSD	QC797933	3781025
058	MSS	268557-001	2915258
059	CCV		3770247
061	CCB		3848822
062	MS	QC797934	2972512
063	MSD	QC797935	2953631
064	SER	QC797936	3352778
065	PDS	QC797937	2970155
070	MSS	268556-002	2786480
071	SAMPLE	268556-003	2783368
072	CCV		3726068
074	CCB		3714635
075	SAMPLE	268556-005	3777856
076	SAMPLE	268556-010	3816632
077	SAMPLE	268558-001	3014976
078	CCV		3699746
080	CCB		3756173

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85309335001
Units : ug/L

Date : 02-AUG-2015 19:35
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85309335002	L1	02-AUG-2015 19:40	S27752
L2	met08_sn_6010	85309335003	L2	02-AUG-2015 19:45	S27753
L3	met08_sn_6010	85309335004	L3	02-AUG-2015 19:49	S27754
L4	met08_sn_6010	85309335005	L4	02-AUG-2015 19:55	S27755
L5	met08_sn_6010	85309335006	L5	02-AUG-2015 20:01	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	7.1600	7.8180	7.6919	7.8257		LOR0	0.00000	0.12781		7.6239	1.000	0.995	
Manganese	A	1091.8	1067.2	1038.8	1012.8		LOR0	0.00000	9.87E-4		1052.7	1.000	0.995	
Iron	R	2.1420		2.0283	1.9703	1.8637	LOR0	0.00000	0.53626		2.0011	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-8	100.00	0	1000.0	-2	10000	0		
Manganese	A	5.0000	8	100.00	5	1000.0	3	10000	0		
Iron	R	100.00	15			1000.0	9	10000	6	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85309335001 Cal Date : 02-AUG-2015

ICV 85309335007 (02-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5028	ug/L	1	10	
Manganese	A	5000	4973	ug/L	-1	10	
Iron	R	20000	20580	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335008.1 File : met08_sn_6010 Time : 02-AUG-2015 20:13
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.893	ug/L	18	30	
Manganese	A	5.000	6.166	ug/L	**23**	30	!cri+
Iron	R	100.0	119.9	ug/L	20	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3813461	0.56

!=warning +=high bias

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335009.1 File : met08_sn_6010 Time : 02-AUG-2015 20:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3818530	0.69

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335010.1 File : met08_sn_6010 Time : 02-AUG-2015 20:22
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[4.618]	5.000	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20220	ug/L	101
Copper	A	20000	21170	ug/L	106
Manganese	A	20000	18960	ug/L	95
Nickel	A	20000	17860	ug/L	89
Vanadium	A	20000	20060	ug/L	100
Aluminum	R	500000	521200	ug/L	104
Calcium	R	500000	503600	ug/L	101
Iron	R	200000	197200	ug/L	99
Magnesium	R	500000	522800	ug/L	105
Titanium	R	20000	19550	ug/L	98

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3268174	-13.82

!=warning +=high bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335011.1 File : met08_sn_6010 Time : 02-AUG-2015 20:48
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	529.3	ug/L	6	20	
Manganese	A	500.0	477.0	ug/L	-5	20	
Iron	R	200000	196500	ug/L	-2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3232405	-14.76

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335047.1 File : met08_sn_6010 Time : 03-AUG-2015 00:01
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	8.0330	5000	5133	ug/L	3	10	
Manganese	A	1052.7	1051.8	5000	5191	ug/L	4	10	
Iron	R	2.0011	2.0311	20000	21780	ug/L	9	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726955	-1.72

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335048.1 File : met08_sn_6010 Time : 03-AUG-2015 00:09
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3801776	0.25

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335059.1 File : met08_sn_6010 Time : 03-AUG-2015 01:06
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.8221	5000	4999	ug/L	0	10	
Manganese	A	1052.7	1033.4	5000	5100	ug/L	2	10	
Iron	R	2.0011	1.8795	20000	20160	ug/L	1	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3770247	-0.58

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335061.1 File : met08_sn_6010 Time : 03-AUG-2015 01:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3848822	1.49

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335072.1 File : met08_sn_6010 Time : 03-AUG-2015 02:31
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.3536	5000	4699	ug/L	-6	10	
Manganese	A	1052.7	1025.5	5000	5061	ug/L	1	10	
Iron	R	2.0011	1.4748	20000	15820	ug/L	**-21**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726068	-1.75

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335074.1 File : met08_sn_6010 Time : 03-AUG-2015 02:43
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3714635	-2.05

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335078.1 File : met08_sn_6010 Time : 03-AUG-2015 03:07
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.3911	5000	4723	ug/L	-6	10	
Manganese	A	1052.7	1027.9	5000	5073	ug/L	1	10	
Iron	R	2.0011	1.4901	20000	15980	ug/L	**-20**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3699746	-2.44

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335080.1 File : met08_sn_6010 Time : 03-AUG-2015 03:19
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3756173	-0.95

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 05:34	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 05:39	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 05:44	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 05:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 05:54	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 06:00	1.0	5	
007	met08_sn_6010	XICV				08/04/15 06:07	1.0	6	
008	met08_sn_6010	ICV				08/04/15 06:15	1.0	6	
009	met08_sn_6010	XCRI				08/04/15 06:22	1.0	7	
010	met08_sn_6010	CRI				08/04/15 06:42	1.0	7	
011	met08_sn_6010	ICB				08/04/15 06:51	1.0		
012	met08_sn_6010	ICSA				08/04/15 06:56	1.0	8	10:AL=510000
013	met08_sn_6010	ICSAB				08/04/15 07:21	1.0	9	5:AL=500000
014	met08_sn_6010	MSS	268613-004	Water	225732	08/04/15 08:40	1.0		
015	met08_sn_6010	MS	QC798023	Water	225732	08/04/15 08:45	1.0		
016	met08_sn_6010	MSD	QC798024	Water	225732	08/04/15 08:49	1.0		
017	met08_sn_6010	SER	QC798025	Water	225732	08/04/15 08:53	5.0		
018	met08_sn_6010	PDS	QC798026	Water	225732	08/04/15 08:58	1.0	10 11 12	
019	met08_sn_6010	X	RINSE			08/04/15 09:02	1.0		
020	met08_sn_6010	BLANK	QC798085	Soil	225747	08/04/15 09:07	1.0		
021	met08_sn_6010	BS	QC798086	Soil	225747	08/04/15 09:12	5.0		
022	met08_sn_6010	BSD	QC798087	Soil	225747	08/04/15 09:17	5.0		
023	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 09:22	1.0		6:FE=530000
024	met08_sn_6010	CCV				08/04/15 09:29	1.0	13	
025	met08_sn_6010	CCB				08/04/15 09:37	1.0		
026	met08_sn_6010	MS	QC798088	Soil	225747	08/04/15 09:42	5.0		1:FE=150000
027	met08_sn_6010	MSD	QC798089	Soil	225747	08/04/15 09:49	5.0		2:FE=120000
028	met08_sn_6010	SAMPLE	268664-001	Soil	225747	08/04/15 09:57	10.0		
029	met08_sn_6010	SAMPLE	268664-002	Soil	225747	08/04/15 10:01	10.0		
030	met08_sn_6010	SAMPLE	268664-003	Soil	225747	08/04/15 10:06	10.0		
031	met08_sn_6010	SAMPLE	268664-004	Soil	225747	08/04/15 10:10	10.0		
032	met08_sn_6010	SAMPLE	268664-005	Soil	225747	08/04/15 10:18	10.0		
033	met08_sn_6010	SAMPLE	268664-006	Soil	225747	08/04/15 10:26	10.0		
034	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 10:30	100.0		
035	met08_sn_6010	CCV				08/04/15 10:35	1.0	13	
036	met08_sn_6010	CCB				08/04/15 10:42	1.0		
037	met08_sn_6010	X	RINSE			08/04/15 10:50	1.0		
038	met08_sn_6010	X	RINSE			08/04/15 10:55	1.0		
039	met08_sn_6010	X	RINSE			08/04/15 11:00	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 11:05	1.0		
041	met08_sn_6010	CCV				08/04/15 11:10	1.0	13	
042	met08_sn_6010	CCB				08/04/15 11:18	1.0		
043	met08_sn_6010	MSS	268334-001	Water	225471	08/04/15 11:39	10.0		
044	met08_sn_6010	SER	QC798098	Water	225471	08/04/15 11:43	50.0		
045	met08_sn_6010	PDS	QC798099	Water	225471	08/04/15 11:48	10.0	10 11 12	
046	met08_sn_6010	X	RINSE			08/04/15 11:55	1.0		
047	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 12:00	1.0		
048	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 12:05	1.0		
049	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 12:10	5.0		
050	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 12:16	5.0		
051	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 12:21	1.0		3:MG=540000
052	met08_sn_6010	X	RINSE			08/04/15 12:29	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCV				08/04/15 12:34	1.0	13	
054	met08_sn_6010	CCB				08/04/15 12:42	1.0		
055	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 12:47	5.0		2:NA=750000
056	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 12:56	5.0		2:NA=860000
057	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 13:04	5.0		2:NA=900000
058	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 13:13	1.0	10 11 12	3:MG=510000
059	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 13:21	1.0		
060	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 13:26	1.0		5:K=370000
061	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 13:33	1.0		
062	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 13:38	1.0		
063	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 13:43	1.0		4:CA=560000
064	met08_sn_6010	X	RINSE			08/04/15 13:52	1.0		
065	met08_sn_6010	CCV				08/04/15 13:57	1.0	13	
066	met08_sn_6010	CCB				08/04/15 14:05	1.0		
067	met08_sn_6010	CCB				08/04/15 14:09	1.0		

NCD 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 54.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S26229 11=S26230 12=S27470 13=S27756

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85311374

Date : 08/04/15 Reference : met08_sn_6010
Sequence : MET08 08/04/15 Analyzed : 08/04/15 05:39

#	Type	Sample ID	Y A
		ICAL STD	3845807
		LOWER LIMIT	1153742
		UPPER LIMIT	4614969
011	ICB		3906415
012	ICSA		3208743
013	ICSAB		3241075
014	MSS	268613-004	3998438
024	CCV		3773209
025	CCB		3859228
041	CCV		3804961
042	CCB		3925029
047	BLANK	QC797930	3987645
048	BLANK	QC797931	3964995
049	BS	QC797932	3869452
050	BSD	QC797933	3860642
051	MSS	268557-001	2838135
053	CCV		3786842
054	CCB		3782945
055	MS	QC797934	3377321
056	MSD	QC797935	3345433
057	SER	QC797936	3335479
058	PDS	QC797937	2940760
063	MSS	268556-002	2810943
065	CCV		3728529
066	CCB		3862989

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 METALS Filtrate: EPA 6010C

Inst : MET08 Reviewer : ---
Calnum : 85311374001 Date : 04-AUG-2015 05:34
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311374002	L1	04-AUG-2015 05:39	S27752
L2	met08_sn_6010	85311374003	L2	04-AUG-2015 05:44	S27753
L3	met08_sn_6010	85311374004	L3	04-AUG-2015 05:49	S27754
L4	met08_sn_6010	85311374005	L4	04-AUG-2015 05:54	S27755
L5	met08_sn_6010	85311374006	L5	04-AUG-2015 06:00	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	9.6800	7.9950	7.9413	8.2519		LOR0	0.00000	0.12123		8.4671	1.000	0.995	
Manganese	A	1174.5	1126.3	1089.9	1074.0		LOR0	0.00000	9.31E-4		1116.2	1.000	0.995	
Iron	R	2.1270		1.9293	1.8954	1.8895	LOR0	0.00000	0.52922		1.9603	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	17	100.00	-3	1000.0	-4	10000	0		
Manganese	A	5.0000	9	100.00	5	1000.0	1	10000	0		
Iron	R	100.00	13			1000.0	2	10000	0	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311374001 Cal Date : 04-AUG-2015

ICV 85311374008 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5046	ug/L	1	10	
Manganese	A	5000	5006	ug/L	0	10	
Iron	R	20000	20230	ug/L	1	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374010.1 File : met08_sn_6010 Time : 04-AUG-2015 06:42
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.782	ug/L	16	30	
Manganese	A	5.000	6.242	ug/L	**25**	30	!cri+
Iron	R	100.0	118.6	ug/L	19	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3884369	1.00

!=warning +=high bias

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374011.1 File : met08_sn_6010 Time : 04-AUG-2015 06:51
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3906415	1.58

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374012.1 File : met08_sn_6010 Time : 04-AUG-2015 06:56
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-1.425]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20010	ug/L	100
Copper	A	20000	21200	ug/L	106
Manganese	A	20000	19260	ug/L	96
Nickel	A	20000	18070	ug/L	90
Vanadium	A	20000	20150	ug/L	101
Aluminum	R	500000	506100	ug/L	101
Calcium	R	500000	492100	ug/L	98
Iron	R	200000	190200	ug/L	95
Magnesium	R	500000	502800	ug/L	101
Titanium	R	20000	20110	ug/L	101

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3208743	-16.57

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374013.1 File : met08_sn_6010 Time : 04-AUG-2015 07:21
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	519.6	ug/L	4	20	
Manganese	A	500.0	482.7	ug/L	-3	20	
Iron	R	200000	186800	ug/L	-7		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3241075	-15.72

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374053.1 File : met08_sn_6010 Time : 04-AUG-2015 12:34
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.8965	5000	4786	ug/L	-4	10	
Manganese	A	1116.2	1049.1	5000	4883	ug/L	-2	10	
Iron	R	1.9603	1.7499	20000	18520	ug/L	-7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3786842	-1.53

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374054.1 File : met08_sn_6010 Time : 04-AUG-2015 12:42
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3782945	-1.63

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374065.1 File : met08_sn_6010 Time : 04-AUG-2015 13:57
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.5343	5000	4567	ug/L	-9	10	
Manganese	A	1116.2	1040.2	5000	4842	ug/L	-3	10	
Iron	R	1.9603	1.5271	20000	16160	ug/L	**-19**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3728529	-3.05

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374066.1 File : met08_sn_6010 Time : 04-AUG-2015 14:05
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3862989	0.45

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 14:13	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 14:18	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 14:23	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 14:27	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 14:32	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 14:40	1.0	5	
007	met08_sn_6010	ICV				08/04/15 14:47	1.0	6	
008	met08_sn_6010	XCRI				08/04/15 14:54	1.0	7	
009	met08_sn_6010	CRI				08/04/15 15:05	1.0	7	
010	met08_sn_6010	ICB				08/04/15 15:13	1.0		
011	met08_sn_6010	ICSA				08/04/15 15:22	1.0	8	10:AL=560000
012	met08_sn_6010	ICSAB				08/04/15 15:47	1.0	9	5:AL=530000
013	met08_sn_6010	SAMPLE	268517-023	Miscell.	225698	08/04/15 15:54	1.0		6:CA=3500000
014	met08_sn_6010	X	RINSE			08/04/15 16:01	1.0		
015	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 16:06	1.0		
016	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 16:11	1.0		
017	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 16:16	1.0		
018	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 16:20	1.0		
019	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:24	100.0		
020	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:29	1.0		3:MG=590000
021	met08_sn_6010	X	RINSE			08/04/15 16:38	1.0		
022	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 16:43	1.0		3:MG=560000
023	met08_sn_6010	CCV				08/04/15 16:50	1.0	10	
024	met08_sn_6010	XCCB				08/04/15 16:58	1.0		
025	met08_sn_6010	CCB				08/04/15 17:02	1.0		
026	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 17:07	1.0		3:MG=560000
027	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 17:15	5.0		2:NA=890000
028	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 17:23	1.0	11 12 13	3:MG=600000
029	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 17:31	1.0		
030	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 17:36	1.0		5:K=380000
031	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 17:44	1.0		
032	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 17:49	1.0		
033	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 17:54	1.0		4:MG=660000
034	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/04/15 18:02	1.0		4:MG=670000
035	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/04/15 18:11	1.0		
036	met08_sn_6010	CCV				08/04/15 18:16	1.0	10	
037	met08_sn_6010	CCB				08/04/15 18:24	1.0		
038	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/04/15 18:29	1.0		
039	met08_sn_6010	?SAMPLE	269558-001		225705	08/04/15 18:34	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 18:43	1.0		
041	met08_sn_6010	BS	QC797841	Soil	225682	08/04/15 18:48	5.0		
042	met08_sn_6010	BSD	QC797842	Soil	225682	08/04/15 18:53	5.0		
043	met08_sn_6010	X	RINSE			08/04/15 18:58	1.0		
044	met08_sn_6010	BLANK	QC798020	Water	225732	08/04/15 19:03	1.0		
045	met08_sn_6010	BS	QC798021	Water	225732	08/04/15 19:08	1.0		
046	met08_sn_6010	BSD	QC798022	Water	225732	08/04/15 19:13	1.0		
047	met08_sn_6010	SAMPLE	268598-003	Water	225732	08/04/15 19:18	1000		
048	met08_sn_6010	CCV				08/04/15 19:23	1.0	10	
049	met08_sn_6010	CCB				08/04/15 19:31	1.0		
050	met08_sn_6010	SAMPLE	268598-004	Water	225732	08/04/15 19:36	1000		
051	met08_sn_6010	MSS	268602-001	Water	225732	08/04/15 19:41	1.0		
052	met08_sn_6010	CCV				08/04/15 19:46	1.0	10	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCB				08/04/15 19:54	1.0		

CRT 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 53.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85311893

Date : 08/04/15 Reference : met08_sn_6010
Sequence : MET08 08/04/15 Analyzed : 08/04/15 14:18

#	Type	Sample ID	Y A
		ICAL STD	3932246
		LOWER LIMIT	1179674
		UPPER LIMIT	4718696
010	ICB		3924187
011	ICSA		3218247
012	ICSAB		3244133
013	SAMPLE	268517-023	3169366
015	BLANK	QC797930	3855454
016	BLANK	QC797931	3908505
017	BS	QC797932	3811417
018	BSD	QC797933	3790355
019	MSS	268557-001	3785849
020	MSS	268557-001	2864702
022	MS	QC797934	2914238
023	CCV		3739314
025	CCB		3895030
026	MSD	QC797935	2917291
027	SER	QC797936	3300017
028	PDS	QC797937	2894907
033	MSS	268556-002	2800471
034	SAMPLE	268556-003	2798200
035	SAMPLE	268556-005	3991118
036	CCV		3696258
037	CCB		3875641
038	SAMPLE	268556-010	3959991
048	CCV		3717167
049	CCB		3850448

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85311893001
Units : ug/L

Date : 04-AUG-2015 14:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311893002	L1	04-AUG-2015 14:18	S27752
L2	met08_sn_6010	85311893003	L2	04-AUG-2015 14:23	S27753
L3	met08_sn_6010	85311893004	L3	04-AUG-2015 14:27	S27754
L4	met08_sn_6010	85311893005	L4	04-AUG-2015 14:32	S27755
L5	met08_sn_6010	85311893006	L5	04-AUG-2015 14:40	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	5.7600	7.6920	7.5803	7.8817		LOR0	0.00000	0.12693		7.2285	1.000	0.995	
Manganese	A	1036.8	1152.3	1107.8	1102.3		LOR0	0.00000	9.07E-4		1099.8	1.000	0.995	
Iron	R	1.7020		1.7049	1.5924	1.5554	LOR0	0.00000	0.64278		1.6387	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	**-27**	100.00	-2	1000.0	-4	10000	0		
Manganese	A	5.0000	-6	100.00	5	1000.0	0	10000	0		
Iron	R	100.00	9			1000.0	10	10000	2	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311893001 Cal Date : 04-AUG-2015

ICV 85311893007 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5012	ug/L	0	10	
Manganese	A	5000	4942	ug/L	-1	10	
Iron	R	20000	20670	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893009.1 File : met08_sn_6010 Time : 04-AUG-2015 15:05
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.513	ug/L	10	30	
Manganese	A	5.000	4.607	ug/L	-8	30	
Iron	R	100.0	107.9	ug/L	8	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875445	-1.44

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893010.1 File : met08_sn_6010 Time : 04-AUG-2015 15:13
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3924187	-0.20

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893011.1 File : met08_sn_6010 Time : 04-AUG-2015 15:22
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-3.129]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19320	ug/L	97
Copper	A	20000	20980	ug/L	105
Manganese	A	20000	18810	ug/L	94
Nickel	A	20000	17900	ug/L	89
Vanadium	A	20000	20090	ug/L	100
Aluminum	R	500000	564900	ug/L	113
Calcium	R	500000	531100	ug/L	106
Iron	R	200000	213000	ug/L	106
Magnesium	R	500000	535300	ug/L	107
Titanium	R	20000	21210	ug/L	106

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3218247	-18.16

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893012.1 File : met08_sn_6010 Time : 04-AUG-2015 15:47
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	509.5	ug/L	2	20	
Manganese	A	500.0	473.3	ug/L	-5	20	
Iron	R	200000	204300	ug/L	2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3244133	-17.50

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893023.1 File : met08_sn_6010 Time : 04-AUG-2015 16:50
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.5838	5000	4813	ug/L	-4	10	
Manganese	A	1099.8	1073.2	5000	4868	ug/L	-3	10	
Iron	R	1.6387	1.6260	20000	20900	ug/L	5	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3739314	-4.91

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893025.1 File : met08_sn_6010 Time : 04-AUG-2015 17:02
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3895030	-0.95

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893036.1 File : met08_sn_6010 Time : 04-AUG-2015 18:16
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.0665	5000	4485	ug/L	-10	10	
Manganese	A	1099.8	1065.1	5000	4831	ug/L	-3	10	
Iron	R	1.6387	1.6632	20000	21380	ug/L	7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3696258	-6.00

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893037.1 File : met08_sn_6010 Time : 04-AUG-2015 18:24
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875641	-1.44

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893048.1 File : met08_sn_6010 Time : 04-AUG-2015 19:23
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	6.8581	5000	4352	ug/L	**-13**	10	c- ***
Manganese	A	1099.8	1049.0	5000	4758	ug/L	-5	10	
Iron	R	1.6387	1.6739	20000	21520	ug/L	8	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3717167	-5.47

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893049.1 File : met08_sn_6010 Time : 04-AUG-2015 19:31
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3850448	-2.08

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met09_sn_	ICALBLK				08/05/15 05:38	1.0		
002	met09_sn_	ICAL	L1			08/05/15 05:43	1.0	1	
003	met09_sn_	ICAL	L2			08/05/15 05:48	1.0	2	
004	met09_sn_	ICAL	L3			08/05/15 05:53	1.0	3	
005	met09_sn_	ICAL	L4			08/05/15 05:57	1.0	4	
006	met09_sn_	ICAL	L5			08/05/15 06:04	1.0	5	
007	met09_sn_	ICV				08/05/15 06:11	1.0	6	
008	met09_sn_	XCRI				08/05/15 06:18	1.0	7	
009	met09_sn_	CRI				08/05/15 06:36	1.0	7	
010	met09_sn_	ICB				08/05/15 06:41	1.0		
011	met09_sn_	ICSA				08/05/15 06:46	1.0	8	10:AL=510000
012	met09_sn_	ICSAB				08/05/15 08:02	1.0	9	5:AL=490000
013	met09_sn_	MSS	268662-001	Soil	225788	08/05/15 08:30	100.0		
014	met09_sn_	SAMPLE	268673-001	Miscell.	225788	08/05/15 08:34	100.0		
015	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 08:38	100.0		1:PB=12000
016	met09_sn_	X	RINSE			08/05/15 08:46	1.0		
017	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:51	1.0		6:FE=380000
018	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:59	1.0		6:FE=390000
019	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 09:07	1000		
020	met09_sn_	CCV				08/05/15 09:12	1.0	10	
021	met09_sn_	CCB				08/05/15 09:19	1.0		
022	met09_sn_	MSS	268613-004	Water	225732	08/05/15 09:29	1.0		
023	met09_sn_	CCV				08/05/15 09:34	1.0	10	
024	met09_sn_	CCB				08/05/15 09:41	1.0		
025	met09_sn_	BLANK	QC798252	TCLP Leachate	225793	08/05/15 09:52	10.0		1:NA=160000
026	met09_sn_	BLANK	QC798257	TCLP Leachate	225793	08/05/15 09:57	10.0		1:NA=150000
027	met09_sn_	BS	QC798253	TCLP Leachate	225793	08/05/15 10:03	1.0		
028	met09_sn_	BSD	QC798254	TCLP Leachate	225793	08/05/15 10:07	1.0		
029	met09_sn_	MSS	268597-001	TCLP Leachate	225793	08/05/15 10:11	10.0		1:NA=150000
030	met09_sn_	MS	QC798255	TCLP Leachate	225793	08/05/15 10:16	10.0		
031	met09_sn_	MSD	QC798256	TCLP Leachate	225793	08/05/15 10:21	10.0		
032	met09_sn_	SAMPLE	268369-001	TCLP Leachate	225793	08/05/15 10:25	10.0		1:NA=150000
033	met09_sn_	SAMPLE	268373-001	TCLP Leachate	225793	08/05/15 10:30	10.0		1:NA=190000
034	met09_sn_	SAMPLE	268655-001	TCLP Leachate	225793	08/05/15 10:36	10.0		1:NA=140000
035	met09_sn_	CCV				08/05/15 10:41	1.0	10	
036	met09_sn_	CCB				08/05/15 10:48	1.0		
037	met09_sn_	SAMPLE	268655-002	TCLP Leachate	225793	08/05/15 10:53	10.0		1:NA=150000
038	met09_sn_	CCV				08/05/15 10:58	1.0	10	
039	met09_sn_	CCB				08/05/15 11:05	1.0		
040	met09_sn_	SER	QC798239	Soil	225788	08/05/15 11:19	500.0		
041	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 11:24	100.0	11 12 13	
042	met09_sn_	SAMPLE	268669-001	Miscell.	225788	08/05/15 11:28	100.0		
043	met09_sn_	SAMPLE	268584-004	Miscell.	225788	08/05/15 11:33	1.0		1:CR=310000
044	met09_sn_	X	RINSE			08/05/15 11:38	1.0		
045	met09_sn_	X	RINSE			08/05/15 11:43	1.0		
046	met09_sn_	X	RINSE			08/05/15 11:48	1.0		
047	met09_sn_	X	RINSE			08/05/15 11:53	1.0		
048	met09_sn_	CCV				08/05/15 11:58	1.0	10	
049	met09_sn_	CCB				08/05/15 12:05	1.0		
050	met09_sn_	BLANK	QC798178	Water	225774	08/05/15 12:12	1.0		
051	met09_sn_	BS	QC798179	Water	225774	08/05/15 12:17	1.0		
052	met09_sn_	BSD	QC798180	Water	225774	08/05/15 12:21	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met09_sn_	MSS	268615-001	Water	225774	08/05/15 12:26	1.0		3:MG=380000
054	met09_sn_	MS	QC798181	Water	225774	08/05/15 12:33	1.0		3:MG=370000
055	met09_sn_	MSD	QC798182	Water	225774	08/05/15 12:41	1.0		3:MG=370000
056	met09_sn_	SAMPLE	268593-001	Water	225774	08/05/15 12:49	1.0		3:MG=130000
057	met09_sn_	SAMPLE	268593-002	Water	225774	08/05/15 12:57	1.0		2:MG=140000
058	met09_sn_	SAMPLE	268616-001	Water	225774	08/05/15 13:05	1.0		3:MG=290000
059	met09_sn_	SAMPLE	268668-001	Water	225774	08/05/15 13:14	1.0		
060	met09_sn_	CCV				08/05/15 13:22	1.0	10	
061	met09_sn_	CCB				08/05/15 13:29	1.0		
062	met09_sn_	BLANK	QC798293	Soil	225807	08/05/15 13:39	1.0		
063	met09_sn_	BS	QC798294	Soil	225807	08/05/15 13:44	5.0		
064	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 13:49	5.0		
065	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 13:53	10.0		
066	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 13:57	1.0	11 12 13	1:FE=1800000
067	met09_sn_	MS	QC798296	Soil	225807	08/05/15 14:05	5.0		1:FE=200000
068	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 14:13	5.0		
069	met09_sn_	SAMPLE	268707-001	Soil	225807	08/05/15 14:21	1.0		3:FE=210000
070	met09_sn_	BS	QC798294	Soil	225807	08/05/15 14:29	5.0		
071	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 14:34	5.0		
072	met09_sn_	CCV				08/05/15 14:38	1.0	10	
073	met09_sn_	CCB				08/05/15 14:45	1.0		
074	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 14:50	10.0		
075	met09_sn_	SAMPLE	268682-003	Soil	225807	08/05/15 14:54	10.0		
076	met09_sn_	SAMPLE	268682-004	Soil	225807	08/05/15 14:58	10.0		
077	met09_sn_	SAMPLE	268682-005	Soil	225807	08/05/15 15:03	10.0		
078	met09_sn_	SAMPLE	268682-006	Soil	225807	08/05/15 15:07	10.0		
079	met09_sn_	SAMPLE	268682-007	Soil	225807	08/05/15 15:11	10.0		
080	met09_sn_	BS	QC798294	Soil	225807	08/05/15 15:16	5.0		
081	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 15:20	5.0		
082	met09_sn_	SAMPLE	268682-008	Soil	225807	08/05/15 15:24	10.0		
083	met09_sn_	SAMPLE	268682-009	Soil	225807	08/05/15 15:28	10.0		
084	met09_sn_	CCV				08/05/15 15:33	1.0	10	
085	met09_sn_	CCB				08/05/15 15:40	1.0		
086	met09_sn_	BS	QC797932	Filtrate	225705	08/05/15 15:45	1.0		
087	met09_sn_	BSD	QC797933	Filtrate	225705	08/05/15 15:49	1.0		
088	met09_sn_	X	RINSE			08/05/15 15:53	1.0		
089	met09_sn_	SAMPLE	268682-010	Soil	225807	08/05/15 15:58	10.0		
090	met09_sn_	SAMPLE	268682-011	Soil	225807	08/05/15 16:03	10.0		
091	met09_sn_	SAMPLE	268682-012	Soil	225807	08/05/15 16:07	10.0		
092	met09_sn_	BS	QC798294	Soil	225807	08/05/15 16:11	5.0		
093	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 16:15	5.0		
094	met09_sn_	CCV				08/05/15 16:19	1.0	10	
095	met09_sn_	CCB				08/05/15 16:26	1.0		
096	met09_sn_	SAMPLE	268597-002	TCLP Leachate	225793	08/05/15 16:32	10.0		1:NA=190000
097	met09_sn_	X	RINSE			08/05/15 16:37	1.0		
098	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 16:42	5.0		1:FE=200000
099	met09_sn_	MS	QC798296	Soil	225807	08/05/15 16:49	5.0		
100	met09_sn_	SAMPLE	268682-013	Soil	225807	08/05/15 16:57	10.0		
101	met09_sn_	SAMPLE	268682-014	Soil	225807	08/05/15 17:01	10.0		
102	met09_sn_	SAMPLE	268682-015	Soil	225807	08/05/15 17:06	10.0		
103	met09_sn_	SAMPLE	268682-016	Soil	225807	08/05/15 17:10	10.0		
104	met09_sn_	SAMPLE	268682-017	Soil	225807	08/05/15 17:14	1.0		2:FE=250000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:22	1.0		1:FE=170000
106	met09_sn_	CCV				08/05/15 17:30	1.0	10	
107	met09_sn_	CCB				08/05/15 17:37	1.0		
108	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:42	1.0		1:FE=160000
109	met09_sn_	CCV				08/05/15 17:50	1.0	10	
110	met09_sn_	CCB				08/05/15 17:57	1.0		
111	met09_sn_	SAMPLE	268608-001	Soil	225747	08/05/15 18:07	1.0		4:FE=380000
112	met09_sn_	SAMPLE	268608-002	Soil	225747	08/05/15 18:15	1.0		3:FE=410000
113	met09_sn_	SAMPLE	268608-003	Soil	225747	08/05/15 18:22	1.0		3:FE=360000
114	met09_sn_	SAMPLE	268608-004	Soil	225747	08/05/15 18:30	1.0		3:FE=460000
115	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 18:40	1.0		1:FE=190000
116	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 18:48	10.0		
117	met09_sn_	CCV				08/05/15 19:02	1.0	10	
118	met09_sn_	CCB				08/05/15 19:09	1.0		
119	met09_sn_	SAMPLE	268464-002	Water	225649	08/05/15 19:15	100.0		
120	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 19:26	1.0		3:MG=610000
121	met09_sn_	X	RINSE			08/05/15 19:33	1.0		
122	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 19:38	5.0		
123	met09_sn_	X	RINSE			08/05/15 19:46	1.0		
124	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 19:51	1.0	11 12 13	3:MG=600000
125	met09_sn_	X	RINSE			08/05/15 19:59	1.0		
126	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 20:04	100.0		
127	met09_sn_	X	RINSE			08/05/15 20:10	1.0		
128	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 20:15	500.0		
129	met09_sn_	X	RINSE			08/05/15 20:20	1.0		
130	met09_sn_	CCV				08/05/15 20:25	1.0	10	
131	met09_sn_	CCB				08/05/15 20:32	1.0		
132	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 20:37	100.0	11 12 13	
133	met09_sn_	X	RINSE			08/05/15 20:41	1.0		
134	met09_sn_	SAMPLE	268464-003	Water	225649	08/05/15 20:47	1.0		
135	met09_sn_	X	RINSE			08/05/15 20:52	1.0		
136	met09_sn_	SAMPLE	268464-004	Water	225649	08/05/15 20:57	1.0		
137	met09_sn_	X	RINSE			08/05/15 21:02	1.0		
138	met09_sn_	MSS	268460-003	Filtrate	225672	08/05/15 21:07	1.0		1:NA=380000
139	met09_sn_	X	RINSE			08/05/15 21:11	1.0		
140	met09_sn_	X	RINSE			08/05/15 21:17	1.0		
141	met09_sn_	X	QC798374	Soil	225826	08/05/15 21:22	1.0		5:AL=440000
142	met09_sn_	CCV				08/05/15 21:30	1.0	10	
143	met09_sn_	CCB				08/05/15 21:36	1.0		
144	met09_sn_	X	QC798375	Soil	225826	08/05/15 21:42	5.0		4:AL=680000
145	met09_sn_	X	QC798376	Soil	225826	08/05/15 21:50	5.0		4:AL=680000
146	met09_sn_	X	268621-002	Soil	225826	08/05/15 21:57	1.0		4:AL=610000
147	met09_sn_	X	QC798377	Soil	225826	08/05/15 22:05	5.0		2:AL=420000
148	met09_sn_	X	QC798378	Soil	225826	08/05/15 22:13	5.0		1:AL=610000
149	met09_sn_	X	268621-004	Soil	225826	08/05/15 22:21	1.0		3:FE=400000
150	met09_sn_	X	268621-005	Soil	225826	08/05/15 22:29	1.0		2:FE=430000
151	met09_sn_	X	268621-006	Soil	225826	08/05/15 22:37	1.0		
152	met09_sn_	X	268621-007	Soil	225826	08/05/15 22:42	1.0		
153	met09_sn_	X	268621-008	Soil	225826	08/05/15 22:47	1.0		
154	met09_sn_	CCV				08/05/15 22:52	1.0	10	
155	met09_sn_	CCB				08/05/15 22:59	1.0		
156	met09_sn_	X	268621-009	Soil	225826	08/05/15 23:05	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	met09_sn_	X	268621-010	Soil	225826	08/05/15 23:10	1.0		1:FE=100000
158	met09_sn_	X	268621-011	Soil	225826	08/05/15 23:18	1.0		
159	met09_sn_	X	268621-012	Soil	225826	08/05/15 23:25	1.0		
160	met09_sn_	X	268621-013	Soil	225826	08/05/15 23:31	1.0		
161	met09_sn_	X	268621-014	Soil	225826	08/05/15 23:37	1.0		
162	met09_sn_	X	268621-015	Soil	225826	08/05/15 23:42	1.0		
163	met09_sn_	X	268684-001	Soil	225826	08/05/15 23:47	1.0		
164	met09_sn_	X	268685-001	Soil	225826	08/05/15 23:53	1.0		
165	met09_sn_	X	RINSE			08/05/15 23:58	1.0		
166	met09_sn_	CCV				08/06/15 00:03	1.0	10	
167	met09_sn_	CCB				08/06/15 00:10	1.0		
168	met09_sn_	?SAMPLE	268632-001		225747	08/06/15 00:15	1.0		
169	met09_sn_	SAMPLE	268642-001	Miscell.	225747	08/06/15 00:23	1.0		4:CA=1800000
170	met09_sn_	SAMPLE	268645-001	Soil	225747	08/06/15 00:31	1.0		5:FE=340000
171	met09_sn_	CCV				08/06/15 00:39	1.0	10	
172	met09_sn_	CCB				08/06/15 00:46	1.0		

NCD 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 49.

CRT 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 50 through 110.

NCD 08/06/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 111 through 172.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 95312818

Date : 08/05/15 Reference : met09_sn_
Sequence : MET09 08/05/15 Analyzed : 08/05/15 05:43

#	Type	Sample ID	Y A
		ICAL STD	3557812
		LOWER LIMIT	1067344
		UPPER LIMIT	4269374
010	ICB		3565668
011	ICSA		3034797
012	ICSAB		3025923
020	CCV		3461723
021	CCB		3657631
022	MSS	268613-004	3629724
023	CCV		3450916
024	CCB		3673839
086	BS	QC797932	3365220
087	BSD	QC797933	3345006
117	CCV		3186226
118	CCB		3365340
120	MSS	268556-002	2323413
122	SER	QC798414	2840598
124	PDS	QC798415	2307777
126	MSS	268556-002	3197452
128	SER	QC798414	3197825
130	CCV		3139318
131	CCB		3302005
132	PDS	QC798415	3193222
138	MSS	268460-003	3092471
142	CCV		3173923
143	CCB		3302427

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268556 METALS Filtrate: EPA 6010C

Inst : MET09
Calnum : 95312818001
Units : ug/L

Date : 05-AUG-2015 05:38
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met09_sn_	95312818002	L1	05-AUG-2015 05:43	S27752
L2	met09_sn_	95312818003	L2	05-AUG-2015 05:48	S27753
L3	met09_sn_	95312818004	L3	05-AUG-2015 05:53	S27754
L4	met09_sn_	95312818005	L4	05-AUG-2015 05:57	S27755
L5	met09_sn_	95312818006	L5	05-AUG-2015 06:04	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	3.1800	3.8100	3.8194	3.8341		LOR0	0.00000	0.26083		3.6609	1.000	0.995	
Manganese	A	713.02	726.37	734.11	694.95		LOR0	0.00000	0.00144		717.11	1.000	0.995	
Iron	R	11.104		10.934	10.825	10.742	LOR0	0.00000	0.09308		10.901	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-17	100.00	-1	1000.0	0	10000	0		
Manganese	A	5.0000	3	100.00	4	1000.0	6	10000	0		
Iron	R	100.00	3			1000.0	2	10000	1	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09
Calnum : 95312818001 Cal Date : 05-AUG-2015

ICV 95312818007 (05-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	4898	ug/L	-2	10	
Manganese	A	5000	5040	ug/L	1	10	
Iron	R	20000	19930	ug/L	0	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818009.1 File : met09_sn_ Time : 05-AUG-2015 06:36
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.815	ug/L	16	30	
Manganese	A	5.000	5.441	ug/L	9	30	
Iron	R	100.0	103.6	ug/L	4	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3584548	0.75

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818010.1 File : met09_sn_ Time : 05-AUG-2015 06:41
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3565668	0.22

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818011.1 File : met09_sn_ Time : 05-AUG-2015 06:46
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[2.754]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	18930	ug/L	95
Copper	A	20000	21900	ug/L	110
Manganese	A	20000	18430	ug/L	92
Nickel	A	20000	18090	ug/L	90
Vanadium	A	20000	19620	ug/L	98
Aluminum	R	500000	513000	ug/L	103
Calcium	R	500000	486800	ug/L	97
Iron	R	200000	189200	ug/L	95
Magnesium	R	500000	504700	ug/L	101
Titanium	R	20000	20400	ug/L	102

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3034797	-14.70

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818012.1 File : met09_sn_ Time : 05-AUG-2015 08:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	541.3	ug/L	8	20	
Manganese	A	500.0	520.7	ug/L	4	20	
Iron	R	200000	179300	ug/L	-10		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3025923	-14.95

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818117.2 File : met09_sn_ Time : 05-AUG-2015 19:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6662	5000	4781	ug/L	-4	10	
Manganese	A	717.11	702.47	5000	5051	ug/L	1	10	
Iron	R	10.901	11.096	20000	20660	ug/L	3	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3186226	-10.44

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818118.2 File : met09_sn_ Time : 05-AUG-2015 19:09
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3365340	-5.41

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818130.1 File : met09_sn_ Time : 05-AUG-2015 20:25
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6162	5000	4716	ug/L	-6	10	
Manganese	A	717.11	707.18	5000	5085	ug/L	2	10	
Iron	R	10.901	11.123	20000	20710	ug/L	4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3139318	-11.76

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268556 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818131.1 File : met09_sn_ Time : 05-AUG-2015 20:32
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3302005	-7.19

SAMPLE PREPARATION SUMMARY

Batch # : 225705 Analysis : ICP-200
Started By : RFC Prep Date : 31-JUL-2015 17:11 Finished By : RFC
Method : METHOD Units : mL
Spike #1 ID : S27307 Spike #2 ID : S27308 Spike #3 ID : S27470

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
268464-001		Filtrate	50	50	1	1.0						200.7	
268464-002		Filtrate	50	50	1	1.0						200.7	
268464-003		Filtrate	50	50	1	1.0						200.7	
268464-004		Filtrate	50	50	1	1.0						200.7	
268464-005		Filtrate	50	50	1	1.0						200.7	Prepped 07-AUG-2015 10:20
268556-002		Filtrate	50	50	1	1.0						6010	
268556-003		Filtrate	50	50	1	1.0						6010	
268556-005		Filtrate	50	50	1	1.0						6010	
268556-010		Filtrate	50	50	1	1.0						6010	
268557-001		Filtrate	50	50	1	1.0						6010	
268558-001		Filtrate	50	50	1	1.0						6010	
QC797930	BLANK	Filtrate	50	50	1	1.0							7/27/15 QC797298
QC797931	BLANK	Filtrate	50	50	1	1.0							7/29/15 QC797931
QC797932	BS	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797933	BSD	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797934	MS	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797935	MSD	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797936	SER	Filtrate	50	50	1	1.0							
QC797937	PDS	Filtrate	50	50	1	1.0							
QC798414	SER	Filtrate	50	50	1	1.0							
QC798415	PDS	Filtrate	50	50	1	1.0							

Analyst: NCD Date: 08/03/15 Reviewer: JDB Date: 08/06/15

Water Digestion for ICP Curtis & Tompkins, Ltd.

LIMS Batch #: 225705
Digested by: RFC
Date Digested: 7/31/15

Digestion Method
☐ EPA 3010a for ICP
☐ EPA 200.7
☑ FILTRATE

BK3689
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Lvl.	Sample #	Container ID	Volume Sample(mL)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
	BLANK 7/27/15		☒ 50 ☐	☒ 50 ☐	N	✓	QC797928 QC797930
	BS		☒ 50 ☐	☒ 50 ☐		✓	-932
	BSD		☒ 50 ☐	☒ 50 ☐		✓	-933
	MS		☒ 50 ☐	☒ 50 ☐		✓	-934
5	MSD		☒ 50 ☐	☒ 50 ☐		✓	-935
II	268464-001	K	☒ 50 ☐	☒ 50 ☐		✓	
	-002		☒ 50 ☐	☒ 50 ☐		✓	
	-003		☒ 50 ☐	☒ 50 ☐		✓	
	-004		☒ 50 ☐	☒ 50 ☐		✓	
II 10	268556-002	D	☒ 50 ☐	☒ 50 ☐		✓	
	-003		☒ 50 ☐	☒ 50 ☐		✓	
	-005		☒ 50 ☐	☒ 50 ☐		✓	
	-010		☒ 50 ☐	☒ 50 ☐		✓	
IV	268557-001	L	☒ 50 ☐	☒ 50 ☐		✓	MSS
III 15	268558-001	F	☒ 50 ☐	☒ 50 ☐		✓	
	BLANK 7/29/15		☒ 50 ☐	☒ 50 ☐		✓	QC797659 QC797931
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
20			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			

	Reagent ID or LIMS #	Initials / Date
Digestion tubes, lot #	ACCUFLOW	RFC 7/31/15
0.50 mL of spike solution (Std1) was added to all spikes	S27307	
0.50 mL of spike solution (Std2) was added to all spikes	S27308	
0.50 mL of spike solution (Std3) was added to all spikes	S27470	
Digestion Temperature (°C), Block and Probe Location		
Digestion begun at (time)		
☑ Conc. HNO3 or ☐ 1:1 HNO3	JTB104117	
☑ Conc. HCl or ☐ 1:1 HCl	JTB97264	
digestion ended at (time)		
☐ filtered thru' Whatman # 541		
Relinquished to ICP group	ICP	

7/31/15
Prep Chemist / Date

Continued from page Ø.
Continued on page _____.

Reviewed Online / See LIMS

SAMPLE	TIME/DATE	LOT #	B#	PH<2	Vol (mL)	INT
BLK QC# 795613	START 09:40 7-15-15	MilliPore R4NA25845	215108	≤2	250	VV
268166-002 A						
006	END 09:43					
BLANK QC795790	START 10:30 / 7/16/15	PALL T30848	225157	YES	250	RFC
268192-002A					200	
-006						
268223-002						
-007	END 10:55 7/16/15					
BLANK QC79641	START 12:05 / 7/23/15		225401	YES	250	RFC
268389-001 A						
-002	END 12:15 / 7/23/15					
BLANK QC78980	START 14:00 / 7/24/15		225463	YES	250	RFC
268430-001 A					150	
-002 D	END 14:40 / 7/24/15				150	
BLANK QC797298	START 18:40 / 7/27/15		225541	YES	250	RFC
268464-001 K					150	
-002					125	
-003					200	
-004						
-005	END 19:35 / 7/27/15					
BLK QC# 797353	09:00 7-28-15	PALL 30848	B# 225558		250	VV
268460-003A	10:00		225558			
BLK QC# 797659	17:30 / 7-29-15	Millipore	B# 225632		250	VV
268556-002D		R4NA25845				
-003						
-005						
-010						
268557-001 L					480	
268558-001 E	18:15				250	

Continued on Page

Read and Understood By

Signed Date Signed Date

Water Digestion for ICP Curtis & Tompkins, Ltd.

LIMS Batch #: 225705
Digested by: RFC
Date Digested: 7/31/15

Digestion Method
☐ EPA 3010a for ICP
☐ EPA 200.7
☑ FILTRATE

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Lvl.	Sample #	Container ID	Volume Sample(mL)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
	BLANK 7/27/15		☒ 50 ☐	☒ 50 ☐	N	✓	QC797928 QC797930
	BS		☒ 50 ☐	☒ 50 ☐		✓	-932
	BSD		☒ 50 ☐	☒ 50 ☐		✓	-933
	MS		☒ 50 ☐	☒ 50 ☐		✓	-934
5	MSD		☒ 50 ☐	☒ 50 ☐		✓	-935
II	268464-001	K	☒ 50 ☐	☒ 50 ☐		✓	
	-002		☒ 50 ☐	☒ 50 ☐		✓	
	-003		☒ 50 ☐	☒ 50 ☐		✓	
	-004		☒ 50 ☐	☒ 50 ☐		✓	
III 10	268556-002	D	☒ 50 ☐	☒ 50 ☐		✓	
	-003		☒ 50 ☐	☒ 50 ☐		✓	
	-005		☒ 50 ☐	☒ 50 ☐		✓	
	-010		☒ 50 ☐	☒ 50 ☐		✓	
IV	268557-001	L	☒ 50 ☐	☒ 50 ☐		✓	MSS
III 15	268558-001	F	☒ 50 ☐	☒ 50 ☐		✓	
	BLANK 7/29/15		☒ 50 ☐	☒ 50 ☐		✓	QC797659 QC797931
II	268464-005	K	☒ 50 ☐	☒ 50 ☐	N	✓	
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
20			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			

	Reagent ID or LIMS #	Initials / Date
Digestion tubes, lot #	ACCUFLOW	RFC 7/31/15
0.50 mL of spike solution (Std1) was added to all spikes	S27307	
0.50 mL of spike solution (Std2) was added to all spikes	S27308	
0.50 mL of spike solution (Std3) was added to all spikes	S27470	
Digestion Temperature (°C), Block and Probe Location		
Digestion begun at (time)		
☑ Conc. HNO3 or ☐ 1:1 HNO3	JTB104117	
☑ Conc. HCl or ☐ 1:1 HCl	JTB97264	
digestion ended at (time)		
☐ filtered thru' Whatman # 541		
Relinquished to ICP group	ICP	

7/31/15
Prep Chemist / Date

Continued from page Ø.
Continued on page _____.

Reviewed Online / See LIMS

Dilutions for 268556 METALS Filtrate
Curtis & Tompkins Laboratories

Type	Sample ID	IDFs
SER	QC797936	5X
SER	QC798414	5X

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 268557
ANALYTICAL REPORT
Volatile Organics by GC/MS

Versar, Inc. 100 Hartsfield Centre Parkway Atlanta, GA 30354	Project : N62473-11-D-2215 Location : BGMP Mins Level : IV Contract # : N62473-11-D-2215

Sample ID	Lab ID
DIC85W07-072815	268557-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 08/11/2015

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE
VOLATILE ORGANICS BY GC/MS (EPA 8260C)

Laboratory number:	**268557**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**BGMP Mins**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 07/29/15. See attached cooler receipt form for any sample receipt problems or discrepancies.

All qualified data are compliant with appropriate corrective actions specified in Standard Operating Procedures. The Standard Operating Procedures are available upon request.

Manual integration documentation may be found in the "Case Narrative Addendum: Manual Integrations" sections.

Volatile Organics by GC/MS (EPA 8260C):
High response was observed for Freon 12 in the ICV analyzed 06/25/15 17:05; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for carbon disulfide and Freon 113 in the ICV analyzed 06/25/15 17:39; affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low response was observed for Freon 12 in the ICV analyzed 07/07/15 18:56; affected data was qualified with "b".

Low response was observed for Freon 113 in the CCV analyzed 07/30/15 12:08; this analyte met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for many analytes in the CCV analyzed 07/31/15 12:35; these analytes met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; affected data was qualified with "b".

High recovery was observed for chloromethane in the BS for batch 225639; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated sample.

High surrogate recoveries were observed for 1,2-dichloroethane-d4 in

Curtis & Tompkins, Ltd.

CASE NARRATIVE
VOLATILE ORGANICS BY GC/MS (EPA 8260C)

Laboratory number:	**268557**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**BGMP Mins**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

Volatile Organics by GC/MS (EPA 8260C):

DIC85W07-072815 (lab # 268557-001) and the MS of DIC85W07-072815 (lab # 268557-001).

DIC85W07-072815 (lab # 268557-001) was diluted due to foaming.

No other analytical problems were encountered.

Chain of Custody

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 268557

Chain of Custody # _____

Project No: N62473-11-D-2215
Sampler: M. Mandell
Project Name: BGMP Mines
Report To: T. Chuhay
Project P. O. No: ATL14-001-01-004-CT
Company: JMW / ERRG
EDD Format: Report Level ☐ II ☐ III ☑ IV
Telephone: 404-443-2777
Turnaround Time: ☐ RUSH _____ ☑ Standard
Email:

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid	MATRIX	MATRIX	# of Containers	CHEMICAL PRESERVATIVE HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST VOCs (8260)	As, Fe, Mn (6010)	MS/MSD
	DIL-SSW07-072515	072515	1431	X				12	9				3	X	X	X

Notes:
Lab filter on metals analysis

SAMPLE RECEIPT
☐ Intact
☐ Cold
☑ On Ice
☐ Ambient

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
M. Mandell	7/29/15	1508	Pat Tanny	7/29/15	1508

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 268577 Date Received 7/29/15 Number of coolers 1
Client JMW/ERRG Project N62473-11-D-2215

Date Opened 7/29 By (print) FBI (sign)
Date Logged in 7/29 By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
   Shipping info
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

   ☐ Bubble Wrap ☒ Foam blocks ☒ Bags ☐ None
   ☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C

   Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.5°

   ☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

   ☐ Samples received on ice directly from the field. Cooling process had begun
8. Were Method 5035 sampling containers present? YES NO
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are there any missing / extra samples? YES NO
11. Are samples in the appropriate containers for indicated tests? YES NO
12. Are sample labels present, in good condition and complete? YES NO
13. Do the sample labels agree with custody papers? YES NO
14. Was sufficient amount of sample sent for tests requested? YES NO
15. Are the samples appropriately preserved? YES NO N/A
16. Did you check preservatives for all bottles for each sample? YES NO N/A
17. Did you document your preservative check? YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? YES NO N/A
21. Was the client contacted concerning this sample delivery? YES NO
   If YES, Who was called? By Date:

COMMENTS

Rev 10, 9/12

Results & QC Summary

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Diln Fac:	5.000
Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
Freon 12	1.0 U	5.0	0.5	225639	07/30/15
Chloromethane	2.0 U	5.0	1.4	225639	07/30/15
Vinyl Chloride	1.0 U	2.5	0.5	225639	07/30/15
Bromomethane	2.0 U	5.0	0.9	225639	07/30/15
Chloroethane	2.0 U	5.0	1.3	225639	07/30/15
Trichlorofluoromethane	2.0 U	5.0	1.1	225639	07/30/15
Acetone	20 U	50	17	225639	07/30/15
Freon 113	2.3 U	10	0.8	225691	07/31/15
1,1-Dichloroethene	1.0 U	2.5	0.8	225639	07/30/15
Methylene Chloride	1.0 U	50	0.9	225639	07/30/15
Carbon Disulfide	2.0 U	2.5	0.5	225691	07/31/15
MTBE	1.0 U	2.5	0.6	225639	07/30/15
trans-1,2-Dichloroethene	1.0 U	2.5	0.8	225639	07/30/15
Vinyl Acetate	10 U	50	5.7	225639	07/30/15
1,1-Dichloroethane	1.0 U	2.5	0.8	225639	07/30/15
2-Butanone	10 U	50	2.5	225639	07/30/15
cis-1,2-Dichloroethene	1.0 U	2.5	0.6	225639	07/30/15
2,2-Dichloropropane	1.0 U	2.5	0.7	225639	07/30/15
Chloroform	1.0 U	2.5	0.5	225639	07/30/15
Bromochloromethane	1.0 U	2.5	0.7	225639	07/30/15
1,1,1-Trichloroethane	1.0 U	2.5	0.6	225639	07/30/15
1,1-Dichloropropene	1.0 U	2.5	0.6	225639	07/30/15
Carbon Tetrachloride	1.0 U	2.5	0.6	225639	07/30/15
1,2-Dichloroethane	1.0 U	2.5	0.5	225639	07/30/15
Benzene	1.0 U	2.5	0.5	225639	07/30/15
Trichloroethene	1.0 U	2.5	0.5	225639	07/30/15
1,2-Dichloropropane	1.0 U	2.5	0.7	225639	07/30/15
Bromodichloromethane	1.0 U	2.5	0.6	225639	07/30/15
Dibromomethane	1.0 U	2.5	0.7	225639	07/30/15
4-Methyl-2-Pentanone	5.0 U	50	3.3	225639	07/30/15
cis-1,3-Dichloropropene	1.0 U	2.5	0.5	225639	07/30/15
Toluene	1.0 U	2.5	0.5	225639	07/30/15
trans-1,3-Dichloropropene	1.0 U	2.5	0.7	225639	07/30/15
1,1,2-Trichloroethane	1.0 U	2.5	0.8	225639	07/30/15
2-Hexanone	5.0 U	50	2.5	225639	07/30/15
1,3-Dichloropropane	1.0 U	2.5	0.7	225639	07/30/15
Tetrachloroethene	1.0 U	2.5	0.5	225639	07/30/15
Dibromochloromethane	1.0 U	2.5	0.7	225639	07/30/15
1,2-Dibromoethane	1.0 U	2.5	0.7	225639	07/30/15
Chlorobenzene	11	2.5	0.6	225639	07/30/15
1,1,1,2-Tetrachloroethane	1.0 U	2.5	0.5	225639	07/30/15
Ethylbenzene	1.0 U	2.5	0.5	225639	07/30/15
m,p-Xylenes	2.0 U	2.5	0.7	225639	07/30/15
o-Xylene	1.0 U	2.5	0.5	225639	07/30/15
Styrene	1.0 U	2.5	0.5	225639	07/30/15
Bromoform	2.0 U	5.0	0.7	225639	07/30/15
Isopropylbenzene	1.0 U	2.5	0.5	225639	07/30/15
1,1,2,2-Tetrachloroethane	1.0 U	2.5	0.6	225639	07/30/15
1,2,3-Trichloropropane	1.0 U	2.5	0.8	225639	07/30/15
Propylbenzene	1.0 U	2.5	0.5	225639	07/30/15
Bromobenzene	1.0 U	2.5	0.5	225639	07/30/15
1,3,5-Trimethylbenzene	1.0 U	2.5	0.5	225639	07/30/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Diln Fac:	5.000
Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
2-Chlorotoluene	1.0 U	2.5	0.5	225639	07/30/15
4-Chlorotoluene	1.0 U	2.5	0.5	225639	07/30/15
tert-Butylbenzene	1.0 U	2.5	0.5	225639	07/30/15
1,2,4-Trimethylbenzene	1.0 U	2.5	0.5	225639	07/30/15
sec-Butylbenzene	1.0 U	2.5	0.5	225639	07/30/15
para-Isopropyl Toluene	1.0 U	2.5	0.5	225639	07/30/15
1,3-Dichlorobenzene	1.5 J	2.5	0.6	225639	07/30/15
1,4-Dichlorobenzene	7.1	2.5	0.5	225639	07/30/15
n-Butylbenzene	1.0 U	2.5	0.5	225639	07/30/15
1,2-Dichlorobenzene	0.7 J	2.5	0.5	225639	07/30/15
1,2-Dibromo-3-Chloropropane	5.0 U	10	1.3	225639	07/30/15
1,2,4-Trichlorobenzene	1.0 U	2.5	0.7	225639	07/30/15
Hexachlorobutadiene	2.0 U	10	0.7	225639	07/30/15
Naphthalene	2.0 U	10	0.5	225639	07/30/15
1,2,3-Trichlorobenzene	1.0 U	2.5	0.7	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	108	85-115	225639	07/30/15
Dibromofluoromethane	115	85-115	225691	07/31/15
1,2-Dichloroethane-d4	123 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	113	70-120	225691	07/31/15
Toluene-d8	96	85-120	225639	07/30/15
Toluene-d8	101	85-120	225691	07/31/15
Bromofluorobenzene	100	75-120	225639	07/30/15
Bromofluorobenzene	108	75-120	225691	07/31/15

*= Value outside of QC limits; see narrative
J= Estimated value
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797679

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	10.71 b	107	30-155
Chloromethane	10.00	12.92	129 *	40-125
Vinyl Chloride	10.00	11.89	119	50-145
Bromomethane	10.00	11.97	120	30-145
Chloroethane	10.00	10.81	108	60-135
Trichlorofluoromethane	10.00	9.518	95	60-145
Acetone	12.50	9.862	79	40-140
Freon 113	12.50	10.63 b	85	61-138
1,1-Dichloroethene	12.50	11.72	94	70-130
Methylene Chloride	12.50	13.02	104	55-140
Carbon Disulfide	12.50	11.54 b	92	35-160
MTBE	12.50	12.21	98	65-125
trans-1,2-Dichloroethene	12.50	12.90	103	60-140
Vinyl Acetate	12.50	19.13 b	153	60-194
1,1-Dichloroethane	12.50	13.18	105	70-135
2-Butanone	12.50	11.47	92	30-150
cis-1,2-Dichloroethene	12.50	12.94	104	70-125
2,2-Dichloropropane	12.50	15.15	121	70-135
Chloroform	12.50	13.73	110	65-135
Bromochloromethane	12.50	12.52	100	65-130
1,1,1-Trichloroethane	12.50	13.47	108	65-130
1,1-Dichloropropene	12.50	12.78	102	75-130
Carbon Tetrachloride	12.50	13.61	109	65-140
1,2-Dichloroethane	12.50	13.39	107	70-130
Benzene	12.50	13.14	105	80-120
Trichloroethene	12.50	12.66	101	70-125
1,2-Dichloropropane	12.50	12.04	96	75-125
Bromodichloromethane	12.50	12.97	104	75-120
Dibromomethane	12.50	12.15	97	75-125
4-Methyl-2-Pentanone	12.50	11.44	92	60-135
cis-1,3-Dichloropropene	12.50	12.33	99	70-130
Toluene	12.50	13.17	105	75-120
trans-1,3-Dichloropropene	12.50	11.99	96	55-140
1,1,2-Trichloroethane	12.50	12.56	101	75-125
2-Hexanone	12.50	11.91	95	55-130
1,3-Dichloropropane	12.50	12.82	103	75-125
Tetrachloroethene	12.50	13.80	110	45-150
Dibromochloromethane	12.50	12.28	98	60-135
1,2-Dibromoethane	12.50	12.47	100	80-120
Chlorobenzene	12.50	13.26	106	80-120
1,1,1,2-Tetrachloroethane	12.50	12.97	104	80-130
Ethylbenzene	12.50	14.01	112	75-125
m,p-Xylenes	25.00	26.00	104	75-130
o-Xylene	12.50	13.26	106	80-120
Styrene	12.50	12.87	103	65-135
Bromoform	12.50	11.34	91	70-130
Isopropylbenzene	12.50	12.87	103	75-125
1,1,2,2-Tetrachloroethane	12.50	11.93	95	65-130
1,2,3-Trichloropropane	12.50	11.83	95	75-125
Propylbenzene	12.50	13.04	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Bromobenzene	12.50	12.93	103	75-125
1,3,5-Trimethylbenzene	12.50	14.33	115	75-130
2-Chlorotoluene	12.50	14.05	112	75-125
4-Chlorotoluene	12.50	14.25	114	75-130
tert-Butylbenzene	12.50	13.11	105	70-130
1,2,4-Trimethylbenzene	12.50	13.41	107	75-130
sec-Butylbenzene	12.50	12.84	103	70-125
para-Isopropyl Toluene	12.50	13.38	107	75-130
1,3-Dichlorobenzene	12.50	12.74	102	75-125
1,4-Dichlorobenzene	12.50	12.91	103	75-125
n-Butylbenzene	12.50	13.79	110	70-135
1,2-Dichlorobenzene	12.50	13.12	105	70-120
1,2-Dibromo-3-Chloropropane	12.50	10.87	87	50-130
1,2,4-Trichlorobenzene	12.50	12.06	96	65-135
Hexachlorobutadiene	12.50	12.52	100	50-140
Naphthalene	12.50	10.14	81	55-140
1,2,3-Trichlorobenzene	12.50	12.01	96	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	102	85-115
1,2-Dichloroethane-d4	110	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	102	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797680

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	9.888 b	99	30-155	8	30
Chloromethane	10.00	11.87	119	40-125	9	30
Vinyl Chloride	10.00	11.63	116	50-145	2	30
Bromomethane	10.00	11.08	111	30-145	8	30
Chloroethane	10.00	9.696	97	60-135	11	30
Trichlorofluoromethane	10.00	8.988	90	60-145	6	30
Acetone	12.50	9.657	77	40-140	2	30
Freon 113	12.50	10.24 b	82	61-138	4	30
1,1-Dichloroethene	12.50	11.24	90	70-130	4	30
Methylene Chloride	12.50	12.57	101	55-140	3	30
Carbon Disulfide	12.50	11.06 b	88	35-160	4	30
MTBE	12.50	11.95	96	65-125	2	30
trans-1,2-Dichloroethene	12.50	12.18	97	60-140	6	30
Vinyl Acetate	12.50	19.45 b	156	60-194	2	30
1,1-Dichloroethane	12.50	12.43	99	70-135	6	30
2-Butanone	12.50	11.46	92	30-150	0	30
cis-1,2-Dichloroethene	12.50	12.60	101	70-125	3	30
2,2-Dichloropropane	12.50	13.91	111	70-135	8	30
Chloroform	12.50	13.28	106	65-135	3	30
Bromochloromethane	12.50	12.35	99	65-130	1	30
1,1,1-Trichloroethane	12.50	12.84	103	65-130	5	30
1,1-Dichloropropene	12.50	12.49	100	75-130	2	30
Carbon Tetrachloride	12.50	13.30	106	65-140	2	30
1,2-Dichloroethane	12.50	12.95	104	70-130	3	30
Benzene	12.50	12.58	101	80-120	4	30
Trichloroethene	12.50	12.34	99	70-125	3	30
1,2-Dichloropropane	12.50	11.95	96	75-125	1	30
Bromodichloromethane	12.50	12.37	99	75-120	5	30
Dibromomethane	12.50	12.09	97	75-125	1	30
4-Methyl-2-Pentanone	12.50	11.38	91	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.36	99	70-130	0	30
Toluene	12.50	12.70	102	75-120	4	30
trans-1,3-Dichloropropene	12.50	12.14	97	55-140	1	30
1,1,2-Trichloroethane	12.50	12.71	102	75-125	1	30
2-Hexanone	12.50	11.66	93	55-130	2	30
1,3-Dichloropropane	12.50	12.08	97	75-125	6	30
Tetrachloroethene	12.50	13.07	105	45-150	5	30
Dibromochloromethane	12.50	11.61	93	60-135	6	30
1,2-Dibromoethane	12.50	12.36	99	80-120	1	30
Chlorobenzene	12.50	13.01	104	80-120	2	30
1,1,1,2-Tetrachloroethane	12.50	12.41	99	80-130	4	30
Ethylbenzene	12.50	13.00	104	75-125	7	30
m,p-Xylenes	25.00	25.91	104	75-130	0	30
o-Xylene	12.50	13.31	106	80-120	0	30
Styrene	12.50	13.38	107	65-135	4	30
Bromoform	12.50	11.34	91	70-130	0	30
Isopropylbenzene	12.50	13.27	106	75-125	3	30
1,1,2,2-Tetrachloroethane	12.50	12.56	100	65-130	5	30
1,2,3-Trichloropropane	12.50	12.00	96	75-125	1	30
Propylbenzene	12.50	13.52	108	70-130	4	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Bromobenzene	12.50	13.30	106	75-125	3	30
1,3,5-Trimethylbenzene	12.50	13.87	111	75-130	3	30
2-Chlorotoluene	12.50	13.25	106	75-125	6	30
4-Chlorotoluene	12.50	13.87	111	75-130	3	30
tert-Butylbenzene	12.50	12.99	104	70-130	1	30
1,2,4-Trimethylbenzene	12.50	13.41	107	75-130	0	30
sec-Butylbenzene	12.50	13.09	105	70-125	2	30
para-Isopropyl Toluene	12.50	12.98	104	75-130	3	30
1,3-Dichlorobenzene	12.50	13.17	105	75-125	3	30
1,4-Dichlorobenzene	12.50	13.41	107	75-125	4	30
n-Butylbenzene	12.50	13.53	108	70-135	2	30
1,2-Dichlorobenzene	12.50	13.31	106	70-120	1	30
1,2-Dibromo-3-Chloropropane	12.50	10.99	88	50-130	1	30
1,2,4-Trichlorobenzene	12.50	11.94	95	65-135	1	30
Hexachlorobutadiene	12.50	12.46	100	50-140	0	30
Naphthalene	12.50	10.64	85	55-140	5	30
1,2,3-Trichlorobenzene	12.50	12.19	98	55-140	1	30

Surrogate	%REC	Limits
Dibromofluoromethane	103	85-115
1,2-Dichloroethane-d4	108	70-120
Toluene-d8	100	85-120
Bromofluorobenzene	96	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797681	Batch#:	225639
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.2 U b	1.0	0.1
Chloromethane	0.4 U	1.0	0.3
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.4 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.3
Trichlorofluoromethane	0.4 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.2 U b	2.0	0.1
1,1-Dichloroethene	0.2 U	0.5	0.2
Methylene Chloride	0.2 U	10	0.2
Carbon Disulfide	0.2 U b	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.2
Vinyl Acetate	2.0 U b	10	1.1
1,1-Dichloroethane	0.2 U	0.5	0.2
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.2 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.2 U	0.5	0.1
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.2 U	0.5	0.1
1,2-Dichloroethane	0.2 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	1.0 U	10	0.7
cis-1,3-Dichloropropene	0.2 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.2 U	0.5	0.1
1,1,2-Trichloroethane	0.2 U	0.5	0.2
2-Hexanone	1.0 U	10	0.5
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.4 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.2
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797681	Batch#:	225639
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.1
Naphthalene	0.4 U	2.0	0.1
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	104	85-115
1,2-Dichloroethane-d4	115	70-120
Toluene-d8	98	85-120
Bromofluorobenzene	101	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Type: MS Lab ID: QC797770

Analyte	MSS Result	Spiked	Result	%REC	Limits
Freon 12	<0.5000	50.00	54.69 b	109	30-155
Chloromethane	<1.362	50.00	47.57	95	40-125
Vinyl Chloride	<0.5000	50.00	54.17	108	50-145
Bromomethane	<0.9149	50.00	21.52	43	30-145
Chloroethane	<1.337	50.00	50.48	101	60-135
Trichlorofluoromethane	<1.140	50.00	49.30	99	60-145
Acetone	<16.50	62.50	49.24	79	40-140
Freon 113	<0.6550	62.50	48.76 b	78	61-138
1,1-Dichloroethene	<0.7594	62.50	53.99	86	70-130
Methylene Chloride	<0.8785	62.50	66.13	106	55-140
Carbon Disulfide	0.8440	62.50	57.76 b	91	35-160
MTBE	<0.5594	62.50	66.91	107	65-125
trans-1,2-Dichloroethene	<0.7549	62.50	64.45	103	60-140
Vinyl Acetate	<5.726	62.50	104.8 b	168	60-194
1,1-Dichloroethane	<0.7936	62.50	67.33	108	70-135
2-Butanone	<2.500	62.50	61.58	99	30-150
cis-1,2-Dichloroethene	<0.6275	62.50	65.94	105	70-125
2,2-Dichloropropane	<0.7200	62.50	72.61	116	70-135
Chloroform	<0.5000	62.50	75.54	121	65-135
Bromochloromethane	<0.6862	62.50	60.26	96	65-130
1,1,1-Trichloroethane	<0.6305	62.50	73.64	118	65-130
1,1-Dichloropropene	<0.6495	62.50	66.70	107	75-130
Carbon Tetrachloride	<0.6154	62.50	72.56	116	65-140
1,2-Dichloroethane	<0.5353	62.50	79.32	127	70-130
Benzene	<0.5000	62.50	68.73	110	80-120
Trichloroethene	<0.5000	62.50	65.90	105	70-125
1,2-Dichloropropane	<0.6857	62.50	66.60	107	75-125
Bromodichloromethane	<0.6061	62.50	71.67	115	75-120
Dibromomethane	<0.7321	62.50	68.94	110	75-125
4-Methyl-2-Pentanone	<3.269	62.50	67.18	107	60-135
cis-1,3-Dichloropropene	<0.5273	62.50	67.08	107	70-130
Toluene	<0.5000	62.50	63.98	102	75-120
trans-1,3-Dichloropropene	<0.6962	62.50	61.92	99	55-140
1,1,2-Trichloroethane	<0.7697	62.50	67.89	109	75-125
2-Hexanone	<2.500	62.50	63.10	101	55-130
1,3-Dichloropropane	<0.7442	62.50	67.27	108	75-125
Tetrachloroethene	<0.5000	62.50	64.06	103	45-150
Dibromochloromethane	<0.7303	62.50	64.08	103	60-135
1,2-Dibromoethane	<0.6707	62.50	64.93	104	80-120
Chlorobenzene	10.86	62.50	78.31	108	80-120
1,1,1,2-Tetrachloroethane	<0.5227	62.50	70.71	113	80-130
Ethylbenzene	<0.5000	62.50	70.87	113	75-125
m,p-Xylenes	<0.7268	125.0	132.4	106	75-130
o-Xylene	<0.5000	62.50	69.78	112	80-120
Styrene	<0.5000	62.50	64.35	103	65-135
Bromoform	<0.7223	62.50	55.97	90	70-130
Isopropylbenzene	<0.5000	62.50	59.90	96	75-125
1,1,2,2-Tetrachloroethane	<0.5983	62.50	62.92	101	65-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,2,3-Trichloropropane	<0.7701	62.50	61.81	99	75-125
Propylbenzene	<0.5000	62.50	63.88	102	70-130
Bromobenzene	<0.5398	62.50	64.36	103	75-125
1,3,5-Trimethylbenzene	<0.5000	62.50	67.97	109	75-130
2-Chlorotoluene	<0.5000	62.50	67.92	109	75-125
4-Chlorotoluene	<0.5000	62.50	68.82	110	75-130
tert-Butylbenzene	<0.5000	62.50	60.94	98	70-130
1,2,4-Trimethylbenzene	<0.5000	62.50	65.61	105	75-130
sec-Butylbenzene	<0.5000	62.50	59.74	96	70-125
para-Isopropyl Toluene	<0.5000	62.50	59.91	96	75-130
1,3-Dichlorobenzene	1.458	62.50	65.58	103	75-125
1,4-Dichlorobenzene	7.140	62.50	69.92	100	75-125
n-Butylbenzene	<0.5000	62.50	62.89	101	70-135
1,2-Dichlorobenzene	0.6685	62.50	65.90	104	70-120
1,2-Dibromo-3-Chloropropane	<1.250	62.50	59.72	96	50-130
1,2,4-Trichlorobenzene	<0.6627	62.50	59.95	96	65-135
Hexachlorobutadiene	<0.6969	62.50	55.80	89	50-140
Naphthalene	<0.5322	62.50	53.24	85	55-140
1,2,3-Trichlorobenzene	<0.6978	62.50	63.19	101	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	110	85-115
1,2-Dichloroethane-d4	127 *	70-120
Toluene-d8	104	85-120
Bromofluorobenzene	101	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Type: MSD Lab ID: QC797771

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	50.00	51.71 b	103	30-155	6	30
Chloromethane	50.00	46.00	92	40-125	3	30
Vinyl Chloride	50.00	51.30	103	50-145	5	30
Bromomethane	50.00	25.25	51	30-145	16	30
Chloroethane	50.00	49.84	100	60-135	1	30
Trichlorofluoromethane	50.00	46.49	93	60-145	6	30
Acetone	62.50	44.44	71	40-140	10	30
Freon 113	62.50	47.40 b	76	61-138	3	30
1,1-Dichloroethene	62.50	51.43	82	70-130	5	30
Methylene Chloride	62.50	65.15	104	55-140	1	30
Carbon Disulfide	62.50	53.65 b	84	35-160	7	30
MTBE	62.50	61.48	98	65-125	8	30
trans-1,2-Dichloroethene	62.50	57.53	92	60-140	11	30
Vinyl Acetate	62.50	106.9 b	171	60-194	2	30
1,1-Dichloroethane	62.50	66.51	106	70-135	1	30
2-Butanone	62.50	59.31	95	30-150	4	30
cis-1,2-Dichloroethene	62.50	65.15	104	70-125	1	30
2,2-Dichloropropane	62.50	69.49	111	70-135	4	30
Chloroform	62.50	68.03	109	65-135	10	30
Bromochloromethane	62.50	59.33	95	65-130	2	30
1,1,1-Trichloroethane	62.50	64.82	104	65-130	13	30
1,1-Dichloropropene	62.50	60.58	97	75-130	10	30
Carbon Tetrachloride	62.50	64.17	103	65-140	12	30
1,2-Dichloroethane	62.50	69.93	112	70-130	13	30
Benzene	62.50	59.72	96	80-120	14	30
Trichloroethene	62.50	57.86	93	70-125	13	30
1,2-Dichloropropane	62.50	56.85	91	75-125	16	30
Bromodichloromethane	62.50	63.20	101	75-120	13	30
Dibromomethane	62.50	60.86	97	75-125	12	30
4-Methyl-2-Pentanone	62.50	57.73	92	60-135	15	30
cis-1,3-Dichloropropene	62.50	57.67	92	70-130	15	30
Toluene	62.50	58.31	93	75-120	9	30
trans-1,3-Dichloropropene	62.50	56.27	90	55-140	10	30
1,1,2-Trichloroethane	62.50	55.09	88	75-125	21	30
2-Hexanone	62.50	54.59	87	55-130	14	30
1,3-Dichloropropane	62.50	60.51	97	75-125	11	30
Tetrachloroethene	62.50	55.56	89	45-150	14	30
Dibromochloromethane	62.50	55.99	90	60-135	13	30
1,2-Dibromoethane	62.50	60.01	96	80-120	8	30
Chlorobenzene	62.50	73.00	99	80-120	7	30
1,1,1,2-Tetrachloroethane	62.50	61.02	98	80-130	15	30
Ethylbenzene	62.50	61.86	99	75-125	14	30
m,p-Xylenes	125.0	120.2	96	75-130	10	30
o-Xylene	62.50	61.26	98	80-120	13	30
Styrene	62.50	57.00	91	65-135	12	30
Bromoform	62.50	50.57	81	70-130	10	30
Isopropylbenzene	62.50	55.74	89	75-125	7	30
1,1,2,2-Tetrachloroethane	62.50	58.92	94	65-130	7	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,2,3-Trichloropropane	62.50	59.47	95	75-125	4	30
Propylbenzene	62.50	59.58	95	70-130	7	30
Bromobenzene	62.50	59.44	95	75-125	8	30
1,3,5-Trimethylbenzene	62.50	61.27	98	75-130	10	30
2-Chlorotoluene	62.50	58.76	94	75-125	14	30
4-Chlorotoluene	62.50	64.81	104	75-130	6	30
tert-Butylbenzene	62.50	57.46	92	70-130	6	30
1,2,4-Trimethylbenzene	62.50	57.92	93	75-130	12	30
sec-Butylbenzene	62.50	55.57	89	70-125	7	30
para-Isopropyl Toluene	62.50	57.61	92	75-130	4	30
1,3-Dichlorobenzene	62.50	61.14	95	75-125	7	30
1,4-Dichlorobenzene	62.50	68.16	98	75-125	3	30
n-Butylbenzene	62.50	54.72	88	70-135	14	30
1,2-Dichlorobenzene	62.50	59.36	94	70-120	10	30
1,2-Dibromo-3-Chloropropane	62.50	54.62	87	50-130	9	30
1,2,4-Trichlorobenzene	62.50	54.82	88	65-135	9	30
Hexachlorobutadiene	62.50	53.74	86	50-140	4	30
Naphthalene	62.50	48.70	78	55-140	9	30
1,2,3-Trichlorobenzene	62.50	56.31	90	55-140	12	30

Surrogate	%REC	Limits
Dibromofluoromethane	108	85-115
1,2-Dichloroethane-d4	118	70-120
Toluene-d8	99	85-120
Bromofluorobenzene	99	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797874

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	9.046 b	90	30-155
Chloromethane	10.00	9.269	93	40-125
Vinyl Chloride	10.00	10.76	108	50-145
Bromomethane	10.00	11.83	118	30-145
Chloroethane	10.00	10.47	105	60-135
Trichlorofluoromethane	10.00	10.55	106	60-145
Acetone	12.50	13.65	109	40-140
Freon 113	12.50	11.11	89	61-138
1,1-Dichloroethene	12.50	12.17	97	70-130
Methylene Chloride	12.50	13.41	107	55-140
Carbon Disulfide	12.50	11.43	91	35-160
MTBE	12.50	13.47	108	65-125
trans-1,2-Dichloroethene	12.50	12.98	104	60-140
Vinyl Acetate	12.50	17.16 b	137	60-194
1,1-Dichloroethane	12.50	13.58	109	70-135
2-Butanone	12.50	14.56	116	30-150
cis-1,2-Dichloroethene	12.50	13.40	107	70-125
2,2-Dichloropropane	12.50	15.23	122	70-135
Chloroform	12.50	13.92	111	65-135
Bromochloromethane	12.50	13.03	104	65-130
1,1,1-Trichloroethane	12.50	13.94	112	65-130
1,1-Dichloropropene	12.50	11.54	92	75-130
Carbon Tetrachloride	12.50	12.61	101	65-140
1,2-Dichloroethane	12.50	12.51	100	70-130
Benzene	12.50	12.71	102	80-120
Trichloroethene	12.50	11.74	94	70-125
1,2-Dichloropropane	12.50	11.67	93	75-125
Bromodichloromethane	12.50	12.15	97	75-120
Dibromomethane	12.50	12.21	98	75-125
4-Methyl-2-Pentanone	12.50	12.75	102	60-135
cis-1,3-Dichloropropene	12.50	12.19	97	70-130
Toluene	12.50	11.53	92	75-120
trans-1,3-Dichloropropene	12.50	10.27	82	55-140
1,1,2-Trichloroethane	12.50	11.38	91	75-125
2-Hexanone	12.50	11.77	94	55-130
1,3-Dichloropropane	12.50	11.46	92	75-125
Tetrachloroethene	12.50	9.646 b	77	45-150
Dibromochloromethane	12.50	10.54	84	60-135
1,2-Dibromoethane	12.50	10.66	85	80-120
Chlorobenzene	12.50	10.93	87	80-120
1,1,1,2-Tetrachloroethane	12.50	10.55	84	80-130
Ethylbenzene	12.50	10.73	86	75-125
m,p-Xylenes	25.00	21.68	87	75-130
o-Xylene	12.50	10.67	85	80-120
Styrene	12.50	11.67	93	65-135
Bromoform	12.50	11.29	90	70-130
Isopropylbenzene	12.50	10.75	86	75-125
1,1,2,2-Tetrachloroethane	12.50	11.93	95	65-130
1,2,3-Trichloropropane	12.50	11.52	92	75-125
Propylbenzene	12.50	10.84	87	70-130
Bromobenzene	12.50	11.13	89	75-125

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
1,3,5-Trimethylbenzene	12.50	10.97	88	75-130
2-Chlorotoluene	12.50	11.55	92	75-125
4-Chlorotoluene	12.50	10.96	88	75-130
tert-Butylbenzene	12.50	9.785 b	78	70-130
1,2,4-Trimethylbenzene	12.50	10.39	83	75-130
sec-Butylbenzene	12.50	10.03 b	80	70-125
para-Isopropyl Toluene	12.50	9.908 b	79	75-130
1,3-Dichlorobenzene	12.50	11.11	89	75-125
1,4-Dichlorobenzene	12.50	11.13	89	75-125
n-Butylbenzene	12.50	9.657 b	77	70-135
1,2-Dichlorobenzene	12.50	11.25	90	70-120
1,2-Dibromo-3-Chloropropane	12.50	11.45	92	50-130
1,2,4-Trichlorobenzene	12.50	9.643 b	77	65-135
Hexachlorobutadiene	12.50	8.759 b	70	50-140
Naphthalene	12.50	8.628 b	69	55-140
1,2,3-Trichlorobenzene	12.50	9.097 b	73	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	113	85-115
1,2-Dichloroethane-d4	114	70-120
Toluene-d8	97	85-120
Bromofluorobenzene	104	75-120

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797875

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	8.298 b	83	30-155	9	30
Chloromethane	10.00	8.984	90	40-125	3	30
Vinyl Chloride	10.00	9.917	99	50-145	8	30
Bromomethane	10.00	11.19	112	30-145	6	30
Chloroethane	10.00	9.645	96	60-135	8	30
Trichlorofluoromethane	10.00	9.453	95	60-145	11	30
Acetone	12.50	12.66	101	40-140	8	30
Freon 113	12.50	11.34	91	61-138	2	30
1,1-Dichloroethene	12.50	11.73	94	70-130	4	30
Methylene Chloride	12.50	13.06	104	55-140	3	30
Carbon Disulfide	12.50	11.28	90	35-160	1	30
MTBE	12.50	13.32	107	65-125	1	30
trans-1,2-Dichloroethene	12.50	12.55	100	60-140	3	30
Vinyl Acetate	12.50	16.58 b	133	60-194	3	30
1,1-Dichloroethane	12.50	13.58	109	70-135	0	30
2-Butanone	12.50	14.32	115	30-150	2	30
cis-1,2-Dichloroethene	12.50	13.38	107	70-125	0	30
2,2-Dichloropropane	12.50	14.71	118	70-135	3	30
Chloroform	12.50	13.87	111	65-135	0	30
Bromochloromethane	12.50	12.76	102	65-130	2	30
1,1,1-Trichloroethane	12.50	13.46	108	65-130	3	30
1,1-Dichloropropene	12.50	11.47	92	75-130	1	30
Carbon Tetrachloride	12.50	12.33	99	65-140	2	30
1,2-Dichloroethane	12.50	12.72	102	70-130	2	30
Benzene	12.50	12.64	101	80-120	1	30
Trichloroethene	12.50	11.93	95	70-125	2	30
1,2-Dichloropropane	12.50	11.68	93	75-125	0	30
Bromodichloromethane	12.50	11.94	96	75-120	2	30
Dibromomethane	12.50	11.94	96	75-125	2	30
4-Methyl-2-Pentanone	12.50	12.62	101	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.00	96	70-130	2	30
Toluene	12.50	11.92	95	75-120	3	30
trans-1,3-Dichloropropene	12.50	10.36	83	55-140	1	30
1,1,2-Trichloroethane	12.50	11.32	91	75-125	0	30
2-Hexanone	12.50	11.56	92	55-130	2	30
1,3-Dichloropropane	12.50	11.35	91	75-125	1	30
Tetrachloroethene	12.50	10.30 b	82	45-150	7	30
Dibromochloromethane	12.50	10.71	86	60-135	2	30
1,2-Dibromoethane	12.50	10.72	86	80-120	1	30
Chlorobenzene	12.50	11.31	90	80-120	3	30
1,1,1,2-Tetrachloroethane	12.50	10.96	88	80-130	4	30
Ethylbenzene	12.50	11.49	92	75-125	7	30
m,p-Xylenes	25.00	23.23	93	75-130	7	30
o-Xylene	12.50	11.14	89	80-120	4	30
Styrene	12.50	11.97	96	65-135	3	30
Bromoform	12.50	11.13	89	70-130	1	30
Isopropylbenzene	12.50	11.28	90	75-125	5	30
1,1,2,2-Tetrachloroethane	12.50	11.66	93	65-130	2	30
1,2,3-Trichloropropane	12.50	11.67	93	75-125	1	30
Propylbenzene	12.50	11.54	92	70-130	6	30
Bromobenzene	12.50	11.36	91	75-125	2	30

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,3,5-Trimethylbenzene	12.50	11.87	95	75-130	8	30
2-Chlorotoluene	12.50	11.97	96	75-125	4	30
4-Chlorotoluene	12.50	11.54	92	75-130	5	30
tert-Butylbenzene	12.50	11.09 b	89	70-130	13	30
1,2,4-Trimethylbenzene	12.50	10.92	87	75-130	5	30
sec-Butylbenzene	12.50	10.83 b	87	70-125	8	30
para-Isopropyl Toluene	12.50	10.53 b	84	75-130	6	30
1,3-Dichlorobenzene	12.50	11.13	89	75-125	0	30
1,4-Dichlorobenzene	12.50	11.51	92	75-125	3	30
n-Butylbenzene	12.50	10.49 b	84	70-135	8	30
1,2-Dichlorobenzene	12.50	11.17	89	70-120	1	30
1,2-Dibromo-3-Chloropropane	12.50	10.59	85	50-130	8	30
1,2,4-Trichlorobenzene	12.50	9.568 b	77	65-135	1	30
Hexachlorobutadiene	12.50	9.742 b	78	50-140	11	30
Naphthalene	12.50	8.166 b	65	55-140	6	30
1,2,3-Trichlorobenzene	12.50	9.523 b	76	55-140	5	30

Surrogate	%REC	Limits
Dibromofluoromethane	111	85-115
1,2-Dichloroethane-d4	111	70-120
Toluene-d8	97	85-120
Bromofluorobenzene	102	75-120

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797876	Batch#:	225691
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.4 U b	1.0	0.2
Chloromethane	0.5 U	1.0	0.2
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.8 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.2
Trichlorofluoromethane	0.2 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.5 U	2.0	0.2
1,1-Dichloroethene	0.2 U	0.5	0.1
Methylene Chloride	0.2 U	10	0.1
Carbon Disulfide	0.4 U	0.5	0.1
MTBE	0.4 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.1
Vinyl Acetate	2.0 U	10	0.5
1,1-Dichloroethane	0.2 U	0.5	0.1
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.4 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.4 U	0.5	0.2
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.4 U	0.5	0.1
Carbon Tetrachloride	0.4 U	0.5	0.1
1,2-Dichloroethane	0.4 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.2
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.4 U	0.5	0.1
4-Methyl-2-Pentanone	0.5 U	10	0.2
cis-1,3-Dichloropropene	0.4 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.4 U	0.5	0.1
1,1,2-Trichloroethane	0.4 U	0.5	0.2
2-Hexanone	0.5 U	10	0.2
1,3-Dichloropropane	0.4 U	0.5	0.1
Tetrachloroethene	0.2 U b	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.2
m,p-Xylenes	0.2 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.5 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.4 U	0.5	0.1
1,2,3-Trichloropropane	0.5 U	0.5	0.1
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.4 U	0.5	0.1
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797876	Batch#:	225691
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.2
tert-Butylbenzene	0.2 U b	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.2
sec-Butylbenzene	0.2 U b	0.5	0.1
para-Isopropyl Toluene	0.2 U b	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.4 U b	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	0.8 U	2.0	0.2
1,2,4-Trichlorobenzene	0.5 U b	0.5	0.1
Hexachlorobutadiene	0.5 U b	2.0	0.1
Naphthalene	0.5 U b	2.0	0.1
1,2,3-Trichlorobenzene	0.5 U b	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	109	85-115
1,2-Dichloroethane-d4	112	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	107	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475253923005 File : hfp05 Time : 25-JUN-2015 10:29

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	5962	25.78	
75	30% - 60% of mass 95	11251	48.65	
95		23128	100.00	
96	5% - 9% of mass 95	1708	7.38	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18311	79.17	
175	5% - 9% of mass 174	1349	7.37	
176	> 95% and < 101% of mass 174	18027	98.45	
177	5% - 9% of mass 176	1178	6.53	

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475304292006 File : hgu06 Time : 30-JUL-2015 10:16

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	9230	25.37	
75	30% - 60% of mass 95	18415	50.62	
95		36376	100.00	
96	5% - 9% of mass 95	2570	7.07	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	26269	72.22	
175	5% - 9% of mass 174	2139	8.14	
176	> 95% and < 101% of mass 174	25927	98.70	
177	5% - 9% of mass 176	1829	7.05	

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485271359002 File : ig702 Time : 07-JUL-2015 10:49

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	8478	30.49	
75	30% - 60% of mass 95	15441	55.53	
95		27808	100.00	
96	5% - 9% of mass 95	2013	7.24	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18113	65.14	
175	5% - 9% of mass 174	1377	7.60	
176	> 95% and < 101% of mass 174	18059	99.70	
177	5% - 9% of mass 176	1227	6.79	

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485305964003 File : igv03 Time : 31-JUL-2015 12:08

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	48674	33.84	
75	30% - 60% of mass 95	84784	58.95	
95		143818	100.00	
96	5% - 9% of mass 95	9854	6.85	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	91269	63.46	
175	5% - 9% of mass 174	6879	7.54	
176	> 95% and < 101% of mass 174	88248	96.69	
177	5% - 9% of mass 176	6075	6.88	

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/03/15

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 MSVOA Water: EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Date : 25-JUN-2015 12:00 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	hfp08	475253923008		25-JUN-2015 12:00	S26360 (2000000X), S27172 (2000000X), S27416 (2000000X), S26220 (1000000X), S27244 (5000X)
L2	hfp09	475253923009		25-JUN-2015 12:34	S26360 (1000000X), S27172 (1000000X), S27416 (1000000X), S26220 (500000X), S27244 (5000X)
L3	hfp10	475253923010		25-JUN-2015 13:07	S26360 (500000X), S27172 (250000X), S27416 (250000X), S26220 (250000X), S27244 (5000X)
L4	hfp11	475253923011		25-JUN-2015 13:41	S26360 (200000X), S27172 (100000X), S27416 (100000X), S26220 (100000X), S27244 (5000X)
L5	hfp12	475253923012		25-JUN-2015 14:15	S26360 (100000X), S27172 (50000X), S27416 (50000X), S26220 (50000X), S27244 (5000X)
L6	hfp13	475253923013		25-JUN-2015 14:49	S26360 (50000X), S27172 (25000X), S27416 (25000X), S26220 (25000X), S27244 (5000X)
L7	hfp14	475253923014		25-JUN-2015 15:23	S26360 (20000X), S27172 (10000X), S27416 (10000X), S26220 (10000X), S27244 (5000X)
L8	hfp15	475253923015		25-JUN-2015 15:57	S26360 (13330X), S27172 (6667X), S27416 (6667X), S26220 (6667X), S27244 (5000X)
L9	hfp16	475253923016		25-JUN-2015 16:31	S26360 (10000X), S27172 (5000X), S27416 (5000X), S26220 (5000X), S27244 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.5422	0.5172	0.5083	0.3399	0.5062	0.4539	0.4517	0.4336	AVRG		2.13169		0.4691	14	15	0.100	0.99	
Chloromethane	0.8987	0.8619	0.8323	0.8605	0.8171	0.8121	0.7349	0.6966	0.6720	AVRG		1.25243		0.7984	10	15	0.100	0.99	
Vinyl Chloride	0.7472	0.7394	0.6855	0.7044	0.6029	0.6727	0.6189	0.6110	0.5959	AVRG		1.50556		0.6642	9	15	0.100	0.99	
Bromomethane		0.3169	0.3400	0.3409	0.3341	0.3597	0.3811	0.3912	0.3914	AVRG		2.80181		0.3569	8	15	0.100	0.99	
Chloroethane		0.5190	0.5062	0.5263	0.4961	0.4834	0.4365	0.4526	0.4115	AVRG		2.08793		0.4789	9	15	0.100	0.99	
Trichlorofluoromethane		0.8599	0.7998	0.8228	0.6661	0.7911	0.7085	0.6839	0.6666	AVRG		1.33363		0.7498	10	15	0.100	0.99	
Acetone			0.2098m	0.1934	0.1755	0.1674	0.1604	0.1621	0.1653	AVRG		5.67351		0.1763	11	15	0.100	0.99	
Freon 113		0.4643	0.4016	0.4799	0.4479	0.4213	0.4307	0.4330	0.4250	AVRG		2.28335		0.4380	6	15	0.100	0.99	
1,1-Dichloroethene		0.5416	0.4651	0.4820	0.4663	0.4663	0.4287	0.4455	0.4262	AVRG		2.14956		0.4652	8	15	0.100	0.99	
Methylene Chloride		0.6436	0.6139	0.6102	0.6145	0.6035	0.5455	0.5371	0.5385	AVRG		1.69968		0.5883	7	15	0.100	0.99	
Carbon Disulfide		2.2300	2.0330	2.0278	1.9431	1.9496	1.7400	1.6979	1.7361	AVRG		0.52091		1.9197	10	15	0.100	0.99	
MTBE		1.3888	1.3144	1.3297	1.3535	1.3915	1.2257	1.2301	1.2454	AVRG		0.76343		1.3099	5	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5812	0.5351	0.5851	0.5296	0.5331	0.5010	0.4983	0.4690	AVRG		1.89017		0.5291	8	15	0.100	0.99	
Vinyl Acetate			0.7359	0.6400	0.8340	0.8982	0.8688	0.8276	0.8511	AVRG		1.23772		0.8079	11	15	0.05	0.99	
1,1-Dichloroethane		1.3753	1.2376	1.2462	1.1611	1.1683	1.1000	1.0691	1.0659	AVRG		0.84893		1.1779	9	15	0.200	0.99	
2-Butanone			0.2614	0.2269	0.2295	0.2269	0.2145	0.2088	0.2028	AVRG		4.45653		0.2244	9	15	0.100	0.99	
2,2-Dichloropropane		0.7852	0.7823	0.7849	0.7152	0.7194	0.7163	0.7042	0.6535	AVRG		1.36494		0.7326	6	15	0.05	0.99	
cis-1,2-Dichloroethene		0.6590	0.6388	0.5839	0.6112	0.6097	0.5601	0.5469	0.5340	AVRG		1.68645		0.5930	7	15	0.100	0.99	
Chloroform		1.1317	1.0698	1.0659	1.0149	1.0293	0.9363	0.8979	0.9156	AVRG		0.99240		1.0077	8	15	0.200	0.99	
Bromochloromethane		0.2644	0.3006	0.3029	0.2793	0.2925	0.2695	0.2638	0.2543	AVRG		3.59193		0.2784	7	15	0.05	0.99	
1,1,1-Trichloroethane		0.8707	0.7206	0.7798	0.6962	0.7108	0.6643	0.6648	0.6634	AVRG		1.38632		0.7213	10	15	0.100	0.99	
1,1-Dichloropropene		0.5538	0.5096	0.5468	0.4778	0.5060	0.4532	0.4734	0.4523	AVRG		2.01368		0.4966	8	15	0.05	0.99	
Carbon Tetrachloride		0.3917	0.3751	0.4286	0.3784	0.3849	0.3630	0.3799	0.3699	AVRG		2.60469		0.3839	5	15	0.100	0.99	
1,2-Dichloroethane		0.5047	0.4779	0.4911	0.4735	0.5064	0.4484	0.4529	0.4442	AVRG		2.10581		0.4749	5	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.5632	1.5167	1.4824	1.4720	1.4606	1.3102	1.2779	1.2083	AVRG		0.70851		1.4114	9	15	0.500	0.99	
Trichloroethene		0.3870	0.3602	0.3743	0.3418	0.3531	0.3047	0.3260	0.3134	AVRG		2.89807		0.3451	8	15	0.200	0.99	
1,2-Dichloropropane		0.5174	0.4563	0.4633	0.4413	0.4534	0.4028	0.3963	0.3705	AVRG		2.28492		0.4377	11	15	0.100	0.99	
Bromodichloromethane		0.4992	0.4895	0.5068	0.4887	0.5016	0.4669	0.4680	0.4549	AVRG		2.06416		0.4845	4	15	0.200	0.99	
Dibromomethane		0.2078	0.2173	0.2173	0.2140	0.2242	0.1945	0.2075	0.2007	AVRG		4.75265		0.2104	5	15	0.05	0.99	
4-Methyl-2-Pentanone			0.3218	0.3344	0.3197	0.3439	0.3090	0.3173	0.3148	AVRG		3.09607		0.3230	4	15	0.100	0.99	
cis-1,3-Dichloropropene		0.6154	0.5989	0.6159	0.5977	0.6234	0.5411	0.5759	0.5448	AVRG		1.69741		0.5891	5	15	0.200	0.99	
Toluene		1.0224	0.9429	0.9938	0.9723	0.9383	0.8279	0.8469	0.8207	AVRG		1.08620		0.9206	9	15	0.400	0.99	
trans-1,3-Dichloropropene		0.5650	0.5537	0.5999	0.5693	0.6022	0.5310	0.5293	0.5139	AVRG		1.79198		0.5580	6	15	0.100	0.99	
1,1,2-Trichloroethane		0.1716	0.1666	0.1737	0.1855	0.1759	0.1653	0.1615	0.1629	AVRG		5.87006		0.1704	5	15	0.100	0.99	
2-Hexanone			0.2465	0.2714	0.2872	0.2906	0.2446	0.2504	0.2370	AVRG		3.82982		0.2611	8	15	0.100	0.99	
1,3-Dichloropropane		0.5966	0.5576	0.5777	0.5933	0.6025	0.5081	0.5297	0.5060	AVRG		1.78910		0.5589	7	15	0.05	0.99	
Tetrachloroethene		0.4077	0.3511	0.3912	0.3619	0.3609	0.3465	0.3444	0.3411	AVRG		2.75402		0.3631	7	15	0.200	0.99	
Dibromochloromethane		0.4205	0.3824	0.4068	0.3951	0.4081	0.3771	0.3798	0.3640	AVRG		2.55272		0.3917	5	15	0.100	0.99	
1,2-Dibromoethane		0.3051	0.2983	0.3170	0.3311	0.3331	0.2974	0.3034	0.2978	AVRG		3.22162		0.3104	5	15	0.100	0.99	
Chlorobenzene		1.1487	1.0740	1.0830	1.1014	1.0667	0.9835	0.9232	0.8924	AVRG		0.96701		1.0341	9	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3898	0.3841	0.3962	0.3912	0.3937	0.3630	0.3546	0.3447	AVRG		2.65153		0.3771	5	15	0.05	0.99	
Ethylbenzene		2.1020	1.8039	1.8765	1.8615	1.8090	1.6155	1.4887	1.4229	AVRG		0.57224		1.7475	13	15	0.100	0.99	
m,p-Xylenes	0.7721	0.7192	0.6722	0.6843	0.6504	0.6350	0.5744	0.5242	0.5393	AVRG		1.55950		0.6412	13	15	0.100	0.99	
o-Xylene		0.7054	0.6630	0.7309	0.6989	0.6587	0.6158	0.6096	0.5461	AVRG		1.53011		0.6535	9	15	0.300	0.99	
Styrene		1.1980	1.1097	1.1508	1.1944	1.1394	0.9943	0.9919	0.9282	AVRG		0.91884		1.0883	9	15	0.300	0.99	
Bromoform		0.2468	0.2178	0.2419	0.2501	0.2488	0.2334	0.2326	0.2319	AVRG		4.20356		0.2379	5	15	0.100	0.99	
Isopropylbenzene		3.4974	3.0271	3.4716	3.0495	3.2300	2.9020	2.8573	2.7311	AVRG		0.32302		3.0957	9	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.7011	0.6579	0.6731	0.7109	0.7192	0.6823	0.6676	0.6484	AVRG		1.46510		0.6825	4	15	0.300	0.99	
1,2,3-Trichloropropane		0.1542	0.1480	0.1597	0.1614	0.1664	0.1588	0.1530	0.1581	AVRG		6.35096		0.1575	4	15	0.05	0.99	
Propylbenzene		4.3941	3.7295	4.2665	3.7562	3.7654	3.2979	3.2519	3.1380	AVRG		0.27027		3.6999	12	15	0.05	0.99	
Bromobenzene		0.9120	0.8565	0.9502	0.8781	0.8905	0.7964	0.8080	0.7921	AVRG		1.16213		0.8605	7	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.7860	2.4893	2.7158	2.5052	2.5559	2.3980	2.2380	2.1413	AVRG		0.40344		2.4787	9	15	0.05	0.99	
2-Chlorotoluene		2.9848	2.6126	2.8160	2.5401	2.6568	2.3990	2.2559	2.1947	AVRG		0.39101		2.5575	11	15	0.05	0.99	
4-Chlorotoluene		2.5557	2.3392	2.5925	2.2163	2.4050	2.1946	2.0120	2.0184	AVRG		0.43636		2.2917	10	15	0.05	0.99	
tert-Butylbenzene		2.6516	2.2627	2.4891	2.2054	2.2931	2.1491	2.0971	1.9869	AVRG		0.44114		2.2669	9	15	0.05	0.99	
1,2,4-Trimethylbenzene		2.7768	2.6016	2.8543	2.6590	2.6498	2.4846	2.2838	2.2427	AVRG		0.38924		2.5691	9	15	0.05	0.99	
sec-Butylbenzene		4.0142	3.2043	3.8608	3.2315	3.3984	3.0471	3.0080	2.9162	AVRG		0.29984		3.3351	12	15	0.05	0.99	
para-Isopropyl Toluene		3.0247	2.5007	3.0671	2.6166	2.6063	2.4679	2.4005	2.3250	AVRG		0.38079		2.6261	11	15	0.05	0.99	
1,3-Dichlorobenzene		1.6852	1.6196	1.7181	1.4987	1.5268	1.4843	1.3826	1.3330	AVRG		0.65316		1.5310	9	15	0.600	0.99	
1,4-Dichlorobenzene		1.7753	1.4944	1.6634	1.5229	1.5577	1.4016	1.3890	1.3364	AVRG		0.65894		1.5176	10	15	0.500	0.99	
n-Butylbenzene		2.8244	2.2910	2.5993	2.3256	2.3830	2.0953	2.1596	1.9830	AVRG		0.42869		2.3327	12	15	0.05	0.99	
1,2-Dichlorobenzene		1.5589	1.4915	1.6288	1.4351	1.5716	1.3607	1.3855	1.3116	AVRG		0.68121		1.4680	8	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane		0.0894	0.1025	0.1176	0.1156	0.1145	0.1095	0.1151	0.1112	AVRG		9.13983		0.1094	9	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.8337	0.8172	0.9044	0.8459	0.8707	0.8161	0.8507	0.8089	AVRG		1.18562		0.8434	4	15	0.200	0.99	
Hexachlorobutadiene		0.4130	0.3469	0.4456	0.3995	0.4029	0.4009	0.4175	0.4024	AVRG		2.47771		0.4036	7	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		1.5902	1.4888	1.7739	1.7189	1.8194	1.7103	1.7313	1.6843	AVRG		0.59185		1.6896	6	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.7379	0.6874	0.8280	0.7628	0.7913	0.7594	0.7912	0.7401	AVRG		1.31189		0.7623	6	15	0.05	0.99	
Dibromofluoromethane	0.5486	0.5583	0.5453	0.5389	0.5478	0.5395	0.5306	0.5368	0.5402	AVRG		1.84192		0.5429	1	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3674	0.3486	0.3555	0.3377	0.3602	0.3507	0.3383	0.3410	0.3245	AVRG		2.88100		0.3471	4	15	0.05	0.99	
Toluene-d8	1.2273	1.2367	1.2015	1.2252	1.2397	1.2262	1.1762	1.2035	1.2258	AVRG		0.82100		1.2180	2	15	0.05	0.99	
Bromofluorobenzene	1.0100	0.9928	0.9628	0.9688	0.9553	0.9718	0.9400	0.9874	1.0124	AVRG		1.02257		0.9779	3	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	16	2.0000	10	5.0000	8	10.000	**-28**	20.000	8	50.000	-3	75.000	-4	100.00	-8
Chloromethane	0.5000	13	1.0000	8	2.0000	4	5.0000	8	10.000	2	20.000	2	50.000	-8	75.000	-13	100.00	-16
Vinyl Chloride	0.5000	12	1.0000	11	2.0000	3	5.0000	6	10.000	-9	20.000	1	50.000	-7	75.000	-8	100.00	-10
Bromomethane			1.0000	-11	2.0000	-5	5.0000	-4	10.000	-6	20.000	1	50.000	7	75.000	10	100.00	10
Chloroethane			1.0000	8	2.0000	6	5.0000	10	10.000	4	20.000	1	50.000	-9	75.000	-6	100.00	-14
Trichlorofluoromethane			1.0000	15	2.0000	7	5.0000	10	10.000	-11	20.000	6	50.000	-6	75.000	-9	100.00	-11
Acetone					2.0000	19	5.0000	10	10.000	0	20.000	-5	50.000	-9	75.000	-8	100.00	-6
Freon 113			0.5000	6	2.0000	-8	5.0000	10	10.000	2	20.000	-4	50.000	-2	75.000	-1	100.00	-3
1,1-Dichloroethene			0.5000	16	2.0000	0	5.0000	4	10.000	0	20.000	0	50.000	-8	75.000	-4	100.00	-8
Methylene Chloride			0.5000	9	2.0000	4	5.0000	4	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-8
Carbon Disulfide			0.5000	16	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-9	75.000	-12	100.00	-10
MTBE			0.5000	6	2.0000	0	5.0000	2	10.000	3	20.000	6	50.000	-6	75.000	-6	100.00	-5
trans-1,2-Dichloroethene			0.5000	10	2.0000	1	5.0000	11	10.000	0	20.000	1	50.000	-5	75.000	-6	100.00	-11
Vinyl Acetate					2.0000	-9	5.0000	**-21**	10.000	3	20.000	11	50.000	8	75.000	2	100.00	5
1,1-Dichloroethane			0.5000	17	2.0000	5	5.0000	6	10.000	-1	20.000	-1	50.000	-7	75.000	-9	100.00	-10
2-Butanone					2.0000	16	5.0000	1	10.000	2	20.000	1	50.000	-4	75.000	-7	100.00	-10
2,2-Dichloropropane			0.5000	7	2.0000	7	5.0000	7	10.000	-2	20.000	-2	50.000	-2	75.000	-4	100.00	-11
cis-1,2-Dichloroethene			0.5000	11	2.0000	8	5.0000	-2	10.000	3	20.000	3	50.000	-6	75.000	-8	100.00	-10
Chloroform			0.5000	12	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-7	75.000	-11	100.00	-9
Bromochloromethane			0.5000	-5	2.0000	8	5.0000	9	10.000	0	20.000	5	50.000	-3	75.000	-5	100.00	-9
1,1,1-Trichloroethane			0.5000	**21**	2.0000	0	5.0000	8	10.000	-3	20.000	-1	50.000	-8	75.000	-8	100.00	-8
1,1-Dichloropropene			0.5000	12	2.0000	3	5.0000	10	10.000	-4	20.000	2	50.000	-9	75.000	-5	100.00	-9
Carbon Tetrachloride			0.5000	2	2.0000	-2	5.0000	12	10.000	-1	20.000	0	50.000	-5	75.000	-1	100.00	-4
1,2-Dichloroethane			0.5000	6	2.0000	1	5.0000	3	10.000	0	20.000	7	50.000	-6	75.000	-5	100.00	-6
Benzene			0.5000	11	2.0000	7	5.0000	5	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-14
Trichloroethene			0.5000	12	2.0000	4	5.0000	8	10.000	-1	20.000	2	50.000	-12	75.000	-6	100.00	-9
1,2-Dichloropropane			0.5000	18	2.0000	4	5.0000	6	10.000	1	20.000	4	50.000	-8	75.000	-9	100.00	-15
Bromodichloromethane			0.5000	3	2.0000	1	5.0000	5	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-6
Dibromomethane			0.5000	-1	2.0000	3	5.0000	3	10.000	2	20.000	7	50.000	-8	75.000	-1	100.00	-5
4-Methyl-2-Pentanone					2.0000	0	5.0000	4	10.000	-1	20.000	6	50.000	-4	75.000	-2	100.00	-3
cis-1,3-Dichloropropene			0.5000	4	2.0000	2	5.0000	5	10.000	1	20.000	6	50.000	-8	75.000	-2	100.00	-8
Toluene			0.5000	11	2.0000	2	5.0000	8	10.000	6	20.000	2	50.000	-10	75.000	-8	100.00	-11
trans-1,3-Dichloropropene			0.5000	1	2.0000	-1	5.0000	7	10.000	2	20.000	8	50.000	-5	75.000	-5	100.00	-8
1,1,2-Trichloroethane			0.5000	1	2.0000	-2	5.0000	2	10.000	9	20.000	3	50.000	-3	75.000	-5	100.00	-4
2-Hexanone					2.0000	-6	5.0000	4	10.000	10	20.000	11	50.000	-6	75.000	-4	100.00	-9
1,3-Dichloropropane			0.5000	7	2.0000	0	5.0000	3	10.000	6	20.000	8	50.000	-9	75.000	-5	100.00	-9
Tetrachloroethene			0.5000	12	2.0000	-3	5.0000	8	10.000	0	20.000	-1	50.000	-5	75.000	-5	100.00	-6
Dibromochloromethane			0.5000	7	2.0000	-2	5.0000	4	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-7
1,2-Dibromoethane			0.5000	-2	2.0000	-4	5.0000	2	10.000	7	20.000	7	50.000	-4	75.000	-2	100.00	-4
Chlorobenzene			0.5000	11	2.0000	4	5.0000	5	10.000	7	20.000	3	50.000	-5	75.000	-11	100.00	-14
1,1,1,2-Tetrachloroethane			0.5000	3	2.0000	2	5.0000	5	10.000	4	20.000	4	50.000	-4	75.000	-6	100.00	-9
Ethylbenzene			0.5000	20	2.0000	3	5.0000	7	10.000	7	20.000	4	50.000	-8	75.000	-15	100.00	-19

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	20	1.0000	12	4.0000	5	10.000	7	20.000	1	40.000	-1	100.00	-10	150.00	-18	200.00	-16
o-Xylene			0.5000	8	2.0000	1	5.0000	12	10.000	7	20.000	1	50.000	-6	75.000	-7	100.00	-16
Styrene			0.5000	10	2.0000	2	5.0000	6	10.000	10	20.000	5	50.000	-9	75.000	-9	100.00	-15
Bromoform			0.5000	4	2.0000	-8	5.0000	2	10.000	5	20.000	5	50.000	-2	75.000	-2	100.00	-3
Isopropylbenzene			0.5000	13	2.0000	-2	5.0000	12	10.000	-1	20.000	4	50.000	-6	75.000	-8	100.00	-12
1,1,2,2-Tetrachloroethane			0.5000	3	2.0000	-4	5.0000	-1	10.000	4	20.000	5	50.000	0	75.000	-2	100.00	-5
1,2,3-Trichloropropane			0.5000	-2	2.0000	-6	5.0000	1	10.000	3	20.000	6	50.000	1	75.000	-3	100.00	0
Propylbenzene			0.5000	19	2.0000	1	5.0000	15	10.000	2	20.000	2	50.000	-11	75.000	-12	100.00	-15
Bromobenzene			0.5000	6	2.0000	0	5.0000	10	10.000	2	20.000	3	50.000	-7	75.000	-6	100.00	-8
1,3,5-Trimethylbenzene			0.5000	12	2.0000	0	5.0000	10	10.000	1	20.000	3	50.000	-3	75.000	-10	100.00	-14
2-Chlorotoluene			0.5000	17	2.0000	2	5.0000	10	10.000	-1	20.000	4	50.000	-6	75.000	-12	100.00	-14
4-Chlorotoluene			0.5000	12	2.0000	2	5.0000	13	10.000	-3	20.000	5	50.000	-4	75.000	-12	100.00	-12
tert-Butylbenzene			0.5000	17	2.0000	0	5.0000	10	10.000	-3	20.000	1	50.000	-5	75.000	-7	100.00	-12
1,2,4-Trimethylbenzene			0.5000	8	2.0000	1	5.0000	11	10.000	3	20.000	3	50.000	-3	75.000	-11	100.00	-13
sec-Butylbenzene			0.5000	20	2.0000	-4	5.0000	16	10.000	-3	20.000	2	50.000	-9	75.000	-10	100.00	-13
para-Isopropyl Toluene			0.5000	15	2.0000	-5	5.0000	17	10.000	0	20.000	-1	50.000	-6	75.000	-9	100.00	-11
1,3-Dichlorobenzene			0.5000	10	2.0000	6	5.0000	12	10.000	-2	20.000	0	50.000	-3	75.000	-10	100.00	-13
1,4-Dichlorobenzene			0.5000	17	2.0000	-2	5.0000	10	10.000	0	20.000	3	50.000	-8	75.000	-8	100.00	-12
n-Butylbenzene			0.5000	**21**	2.0000	-2	5.0000	11	10.000	0	20.000	2	50.000	-10	75.000	-7	100.00	-15
1,2-Dichlorobenzene			0.5000	6	2.0000	2	5.0000	11	10.000	-2	20.000	7	50.000	-7	75.000	-6	100.00	-11
1,2-Dibromo-3-Chloropropane			0.5000	-18	2.0000	-6	5.0000	7	10.000	6	20.000	5	50.000	0	75.000	5	100.00	2
1,2,4-Trichlorobenzene			0.5000	-1	2.0000	-3	5.0000	7	10.000	0	20.000	3	50.000	-3	75.000	1	100.00	-4
Hexachlorobutadiene			0.5000	2	2.0000	-14	5.0000	10	10.000	-1	20.000	0	50.000	-1	75.000	3	100.00	0
Naphthalene			0.5000	-6	2.0000	-12	5.0000	5	10.000	2	20.000	8	50.000	1	75.000	2	100.00	0
1,2,3-Trichlorobenzene			0.5000	-3	2.0000	-10	5.0000	9	10.000	0	20.000	4	50.000	0	75.000	4	100.00	-3
Dibromofluoromethane	50.000	1	50.000	3	50.000	0	50.000	-1	50.000	1	50.000	-1	50.000	-2	50.000	-1	50.000	-1
1,2-Dichloroethane-d4	50.000	6	50.000	0	50.000	2	50.000	-3	50.000	4	50.000	1	50.000	-3	50.000	-2	50.000	-7
Toluene-d8	50.000	1	50.000	2	50.000	-1	50.000	1	50.000	2	50.000	1	50.000	-3	50.000	-1	50.000	1
Bromofluorobenzene	50.000	3	50.000	2	50.000	-2	50.000	-1	50.000	-2	50.000	-1	50.000	-4	50.000	1	50.000	4

DJA 06/26/15 [Ethanol]: Corrected fronting or tailing peak integration in multiple levels.

DJA 06/26/15 [Acetone]: Corrected fronting or tailing peak integration in (hfp10).

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Cal Date : 25-JUN-2015 Type : WATER

ICV 475253923017 (hfp17 25-JUN-2015) stds: S26064 (10000X), S27244 (5000X)
ICV 475253923018 (hfp18 25-JUN-2015) stds: S27331 (10000X), S27404 (10000X), S27533 (10000X), S27244 (5000X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	475253923017	20.00	25.38	ug/L	**27**	20	v+ ***
Chloromethane	475253923017	20.00	19.54	ug/L	-2	20	
Vinyl Chloride	475253923017	20.00	20.18	ug/L	1	20	
Bromomethane	475253923017	20.00	19.54	ug/L	-2	20	
Chloroethane	475253923017	20.00	18.42	ug/L	-8	20	
Trichlorofluoromethane	475253923017	20.00	20.66	ug/L	3	20	
Acetone	475253923018	25.00	20.00	ug/L	-20	20	
Freon 113	475253923018	25.00	19.09	ug/L	**-24**	20	v- ***
1,1-Dichloroethene	475253923018	25.00	21.38	ug/L	-14	20	
Methylene Chloride	475253923018	25.00	23.31	ug/L	-7	20	
Carbon Disulfide	475253923018	25.00	18.77	ug/L	**-25**	20	v- ***
MTBE	475253923018	25.00	24.72	ug/L	-1	20	
trans-1,2-Dichloroethene	475253923018	25.00	22.57	ug/L	-10	20	
Vinyl Acetate	475253923018	25.00	32.45	ug/L	**30**	20	v+ ***
1,1-Dichloroethane	475253923018	25.00	22.75	ug/L	-9	20	
2-Butanone	475253923018	25.00	23.98	ug/L	-4	20	
2,2-Dichloropropane	475253923018	25.00	22.60	ug/L	-10	20	
cis-1,2-Dichloroethene	475253923018	25.00	24.30	ug/L	-3	20	
Chloroform	475253923018	25.00	23.92	ug/L	-4	20	
Bromochloromethane	475253923018	25.00	24.42	ug/L	-2	20	
1,1,1-Trichloroethane	475253923018	25.00	24.02	ug/L	-4	20	
1,1-Dichloropropene	475253923018	25.00	22.74	ug/L	-9	20	
Carbon Tetrachloride	475253923018	25.00	24.08	ug/L	-4	20	
1,2-Dichloroethane	475253923018	25.00	23.25	ug/L	-7	20	
Benzene	475253923018	25.00	23.36	ug/L	-7	20	
Trichloroethene	475253923018	25.00	22.70	ug/L	-9	20	
1,2-Dichloropropane	475253923018	25.00	22.01	ug/L	-12	20	
Bromodichloromethane	475253923018	25.00	22.78	ug/L	-9	20	
Dibromomethane	475253923018	25.00	23.64	ug/L	-5	20	
4-Methyl-2-Pentanone	475253923018	25.00	23.16	ug/L	-7	20	
cis-1,3-Dichloropropene	475253923018	25.00	23.42	ug/L	-6	20	
Toluene	475253923018	25.00	24.30	ug/L	-3	20	
trans-1,3-Dichloropropene	475253923018	25.00	22.10	ug/L	-12	20	
1,1,2-Trichloroethane	475253923018	25.00	24.93	ug/L	0	20	
2-Hexanone	475253923018	25.00	25.36	ug/L	1	20	
1,3-Dichloropropane	475253923018	25.00	24.96	ug/L	0	20	
Tetrachloroethene	475253923018	25.00	24.15	ug/L	-3	20	
Dibromochloromethane	475253923018	25.00	24.48	ug/L	-2	20	
1,2-Dibromoethane	475253923018	25.00	24.67	ug/L	-1	20	
Chlorobenzene	475253923018	25.00	23.11	ug/L	-8	20	
1,1,1,2-Tetrachloroethane	475253923018	25.00	23.85	ug/L	-5	20	
Ethylbenzene	475253923018	25.00	23.76	ug/L	-5	20	
m,p-Xylenes	475253923018	50.00	48.45	ug/L	-3	20	
o-Xylene	475253923018	25.00	24.72	ug/L	-1	20	
Styrene	475253923018	25.00	25.11	ug/L	0	20	
Bromoform	475253923018	25.00	24.91	ug/L	0	20	
Isopropylbenzene	475253923018	25.00	24.38	ug/L	-2	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	475253923018	25.00	26.77	ug/L	7	20	
1,2,3-Trichloropropane	475253923018	25.00	25.78	ug/L	3	20	
Propylbenzene	475253923018	25.00	24.98	ug/L	0	20	
Bromobenzene	475253923018	25.00	25.71	ug/L	3	20	
1,3,5-Trimethylbenzene	475253923018	25.00	25.45	ug/L	2	20	
2-Chlorotoluene	475253923018	25.00	24.35	ug/L	-3	20	
4-Chlorotoluene	475253923018	25.00	25.97	ug/L	4	20	
tert-Butylbenzene	475253923018	25.00	25.13	ug/L	1	20	
1,2,4-Trimethylbenzene	475253923018	25.00	24.23	ug/L	-3	20	
sec-Butylbenzene	475253923018	25.00	24.65	ug/L	-1	20	
para-Isopropyl Toluene	475253923018	25.00	25.08	ug/L	0	20	
1,3-Dichlorobenzene	475253923018	25.00	25.51	ug/L	2	20	
1,4-Dichlorobenzene	475253923018	25.00	24.94	ug/L	0	20	
n-Butylbenzene	475253923018	25.00	24.68	ug/L	-1	20	
1,2-Dichlorobenzene	475253923018	25.00	25.91	ug/L	4	20	
1,2-Dibromo-3-Chloropropane	475253923018	25.00	25.00	ug/L	0	20	
1,2,4-Trichlorobenzene	475253923018	25.00	25.19	ug/L	1	20	
Hexachlorobutadiene	475253923018	25.00	24.66	ug/L	-1	20	
Naphthalene	475253923018	25.00	24.72	ug/L	-1	20	
1,2,3-Trichlorobenzene	475253923018	25.00	26.69	ug/L	7	20	

475253923017: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15
475253923018: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

+=high bias -=low bias v=ICV

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 MSVOA Water: EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Date : 07-JUL-2015 13:45 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	ig707	485271359007	.25/.5PPB	07-JUL-2015 13:45	S26360 (2000000X), S27559 (2000000X), S27416 (2000000X), S26220 (1000000X), S27403 (5000X)
L2	ig708	485271359008	.5/1PPB	07-JUL-2015 14:19	S27403 (5000X), S26360 (1000000X), S27559 (1000000X), S27416 (1000000X), S26220 (500000X)
L3	ig709	485271359009	2PPB	07-JUL-2015 14:54	S26360 (500000X), S27559 (250000X), S27416 (250000X), S26220 (250000X), S27403 (5000X)
L4	ig710	485271359010	5PPB	07-JUL-2015 15:28	S27403 (5000X), S26360 (200000X), S27559 (100000X), S27416 (100000X), S26220 (100000X)
L5	ig711	485271359011	10PPB	07-JUL-2015 16:03	S27403 (5000X), S26360 (100000X), S27559 (50000X), S27416 (50000X), S26220 (50000X)
L6	ig712	485271359012	20PPB	07-JUL-2015 16:37	S27403 (5000X), S26360 (50000X), S27559 (25000X), S27416 (25000X), S26220 (25000X)
L7	ig713	485271359013	50PPB	07-JUL-2015 17:12	S27403 (5000X), S26360 (20000X), S27559 (10000X), S27416 (10000X), S26220 (10000X)
L8	ig714	485271359014	75PPB	07-JUL-2015 17:46	S27403 (5000X), S26360 (13330X), S27559 (6667X), S27416 (6667X), S26220 (6667X)
L9	ig715	485271359015	100PPB	07-JUL-2015 18:21	S27403 (5000X), S26360 (10000X), S27559 (5000X), S27416 (5000X), S26220 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.8295	0.7813	0.8144	0.6552	0.7846	0.6493	0.6678	0.6451	AVRG		1.37286		0.7284	11	15	0.100	0.99	
Chloromethane	1.4221	1.2354	1.2133	1.1468	1.1031	1.0288	0.8902	0.8250		QUAD	-0.1818	0.87534	0.005523	1.1081	1.000	15	0.100	0.99	
Vinyl Chloride	0.9594	0.8834	0.9021	0.8573	0.8247	0.8347	0.7011	0.6584	0.6550	AVRG		1.23693		0.8085	14	15	0.100	0.99	
Bromomethane	0.3703	0.3463	0.3273	0.3389	0.3913	0.4129	0.4326	0.4392	0.4531	AVRG		2.56273		0.3902	12	15	0.100	0.99	
Chloroethane		0.5011	0.5101	0.4605	0.4740	0.4547	0.4197	0.4025	0.4115	AVRG		2.20135		0.4543	9	15	0.100	0.99	
Trichlorofluoromethane		0.9266	0.8918	0.8934	0.7925	0.8509	0.7560	0.7660	0.7547	AVRG		1.20628		0.8290	8	15	0.100	0.99	
Acetone					0.1253	0.1173	0.1009	0.0988	0.0912	AVRG		9.37147		0.1067	13	15	0.100	0.99	
Freon 113		0.4516	0.4408	0.3838	0.3133	0.3629	0.3697	0.3676	0.3779	AVRG		2.60781		0.3835	12	15	0.100	0.99	
1,1-Dichloroethene		0.4474	0.4412	0.3831	0.3641	0.3812	0.3783	0.3744	0.3850	AVRG		2.53584		0.3943	8	15	0.100	0.99	
Methylene Chloride		0.5494	0.5419	0.5096	0.5224	0.5092	0.4725	0.4693	0.4867	AVRG		1.96998		0.5076	6	15	0.100	0.99	
Carbon Disulfide		1.9206	1.8268	1.6855	1.5744	1.6561	1.6287	1.5930	1.6540	AVRG		0.59088		1.6924	7	15	0.100	0.99	
MTBE		1.0283	0.9704	0.9057	0.9460	0.9147	0.8685	0.8049	0.8488	AVRG		1.09780		0.9109	8	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5061	0.4780	0.4547	0.4449	0.4560	0.4366	0.4309	0.4498	AVRG		2.18771		0.4571	5	15	0.100	0.99	
Vinyl Acetate			0.9013	0.8434	0.8447m	0.8124	0.8086	0.7391	0.7099	AVRG		1.23685		0.8085	8	15	0.05	0.99	
1,1-Dichloroethane		1.1778	1.1309	1.0599	1.0637	1.0344	0.9859	0.9304	0.9196	AVRG		0.96354		1.0378	9	15	0.200	0.99	
2-Butanone				0.1789m	0.1844m	0.1720	0.1528	0.1441	0.1430	AVRG		6.15295		0.1625	11	15	0.100	0.99	
2,2-Dichloropropane		0.8777	0.8404	0.7520	0.7256	0.7140	0.6927	0.6436	0.6415	AVRG		1.35883		0.7359	12	15	0.05	0.99	
cis-1,2-Dichloroethene		0.5377	0.5208	0.4903	0.5051	0.5124	0.4938	0.4903	0.4998	AVRG		1.97523		0.5063	3	15	0.100	0.99	
Chloroform		1.0887	1.0251	0.9871	0.9904	0.9670	0.9210	0.8761	0.8819	AVRG		1.03394		0.9672	7	15	0.200	0.99	
Bromochloromethane		0.2495	0.2350	0.2228	0.2367	0.2303	0.2308	0.2306	0.2362	AVRG		4.27375		0.2340	3	15	0.05	0.99	
1,1,1-Trichloroethane		0.9251	0.8694	0.7549	0.7266	0.7538	0.7030	0.6554	0.6447	AVRG		1.32609		0.7541	13	15	0.100	0.99	
1,1-Dichloropropene		0.5433	0.4687	0.4309	0.4143	0.4334	0.4352	0.4324	0.4234	AVRG		2.23364		0.4477	9	15	0.05	0.99	
Carbon Tetrachloride		0.4543	0.4462	0.3967	0.3820	0.4058	0.4043	0.3907	0.4003	AVRG		2.43872		0.4101	6	15	0.100	0.99	
1,2-Dichloroethane		0.4570	0.4412	0.4005	0.4380	0.4223	0.3959	0.3688	0.3572	AVRG		2.43833		0.4101	9	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.2719	1.1909	1.1415	1.1618	1.1768	1.1616	1.1345	1.1345	AVRG		0.85347		1.1717	4	15	0.500	0.99	
Trichloroethene		0.3438	0.3238	0.3025	0.2899	0.3037	0.2998	0.3034	0.3086	AVRG		3.23179		0.3094	5	15	0.200	0.99	
1,2-Dichloropropane		0.4042	0.3727	0.3520	0.3678	0.3647	0.3575	0.3448	0.3469	AVRG		2.74868		0.3638	5	15	0.100	0.99	
Bromodichloromethane		0.4517	0.4301	0.4195	0.4485	0.4405	0.4356	0.4114	0.4210	AVRG		2.31329		0.4323	3	15	0.200	0.99	
Dibromomethane		0.1828	0.1777	0.1761	0.1830	0.1781	0.1774	0.1713	0.1713	AVRG		5.64265		0.1772	2	15	0.05	0.99	
4-Methyl-2-Pentanone				0.2363	0.2522	0.2397	0.2329	0.2180	0.2203	AVRG		4.28742		0.2332	5	15	0.100	0.99	
cis-1,3-Dichloropropene		0.4907	0.4789	0.4503	0.4869	0.4865	0.4935	0.4771	0.4633	AVRG		2.09036		0.4784	3	15	0.200	0.99	
Toluene		0.7808	0.7551	0.7291	0.7092	0.7357	0.7898	0.7038	0.6966	AVRG		1.35591		0.7375	5	15	0.400	0.99	
trans-1,3-Dichloropropene		0.4597	0.4333	0.4395	0.4494	0.4452	0.4546	0.4309	0.4297	AVRG		2.25839		0.4428	3	15	0.100	0.99	
1,1,2-Trichloroethane		0.1161	0.1189	0.1260	0.1325	0.1270	0.1282	0.1278	0.1301	AVRG		7.94672		0.1258	4	15	0.100	0.99	
2-Hexanone				0.1896	0.2000	0.1928	0.1863	0.1825	0.1756	AVRG		5.32480		0.1878	4	15	0.100	0.99	
1,3-Dichloropropane		0.4358	0.4038	0.3887	0.4103	0.3997	0.4115	0.4038	0.3983	AVRG		2.46008		0.4065	3	15	0.05	0.99	
Tetrachloroethene		0.3060	0.2788	0.2574	0.2532	0.2703	0.2900	0.3042	0.3181	AVRG		3.51202		0.2847	8	15	0.200	0.99	
Dibromochloromethane		0.2617	0.2811	0.2852	0.2973	0.3028	0.3129	0.3166	0.3233	AVRG		3.36012		0.2976	7	15	0.100	0.99	
1,2-Dibromoethane		0.2322	0.2216	0.2167	0.2330	0.2274	0.2308	0.2312	0.2365	AVRG		4.37318		0.2287	3	15	0.100	0.99	
Chlorobenzene		0.8902	0.8061	0.7658	0.8022	0.8092	0.8475	0.7970	0.8509	AVRG		1.21786		0.8211	5	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3005	0.2887	0.2885	0.3093	0.3073	0.3322	0.3303	0.3314	AVRG		3.21520		0.3110	6	15	0.05	0.99	
Ethylbenzene		1.5424	1.4178	1.3655	1.3606	1.4054	1.5201	1.4634	1.4252	AVRG		0.69563		1.4375	5	15	0.100	0.99	
m,p-Xylenes	0.5300	0.4926	0.4844	0.4759	0.4728	0.5243	0.5442	0.5198	0.4742	AVRG		1.99190		0.5020	5	15	0.100	0.99	
o-Xylene		0.4862	0.4758	0.4691	0.4611	0.4912	0.5411	0.5121	0.5130	AVRG		2.02550		0.4937	5	15	0.300	0.99	
Styrene		0.7481	0.7797	0.7989	0.8092	0.8820	0.8714	0.7329	0.7298	AVRG		1.25946		0.7940	7	15	0.300	0.99	
Bromoform		0.1202	0.1277	0.1346	0.1510	0.1604	0.1722			AVRG		6.92676		0.1444	14	15	0.100	0.99	
Isopropylbenzene		2.6387	2.5460	2.3177	2.2775	2.4711	2.5384	2.4757	2.3593	AVRG		0.40765		2.4531	5	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.5434	0.4928	0.4839	0.4921	0.4869	0.4694	0.4740	0.4692	AVRG		2.04512		0.4890	5	15	0.300	0.99	
1,2,3-Trichloropropane		0.1113	0.1097	0.1143	0.1161	0.1151	0.1174	0.1193	0.1102	AVRG		8.75751		0.1142	3	15	0.05	0.99	
Propylbenzene		3.4780	3.1989	2.9912	2.6888	3.0160	3.0118	2.8107	2.6131	AVRG		0.33601		2.9761	9	15	0.05	0.99	
Bromobenzene		0.6356	0.6028	0.6117	0.6139	0.6471	0.6995	0.6873	0.6497	AVRG		1.55413		0.6434	5	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.1558	2.0613	1.9250	1.9030	1.9268	1.9589	1.9008	1.7172	AVRG		0.51451		1.9436	7	15	0.05	0.99	
2-Chlorotoluene		2.3248	2.2157	2.0843	2.0248	2.0289	1.9443	1.8629	1.6931	AVRG		0.49448		2.0223	10	15	0.05	0.99	
4-Chlorotoluene		2.0603	1.9210	1.8486	1.7922	1.7785	1.9025	1.7886	1.7498	AVRG		0.53903		1.8552	6	15	0.05	0.99	
tert-Butylbenzene		1.7452	1.7453	1.5931	1.5102	1.6336	1.7629	1.7935	1.7091	AVRG		0.59291		1.6866	6	15	0.05	0.99	
1,2,4-Trimethylbenzene		1.9650	2.0111	1.8972	1.8755	1.8802	2.0229	1.8894	1.8653	AVRG		0.51925		1.9258	3	15	0.05	0.99	
sec-Butylbenzene		2.6336	2.5834	2.4127	2.2117	2.4269	2.6807	2.6479	2.5521	AVRG		0.39704		2.5186	6	15	0.05	0.99	
para-Isopropyl Toluene		1.9652	1.9373	1.8083	1.6544	1.8685	2.0534	1.9723	1.9666	AVRG		0.52542		1.9032	7	15	0.05	0.99	
1,3-Dichlorobenzene		1.0908	1.0254	0.9804	1.0120	1.0442	1.1274	1.1969	1.1821	AVRG		0.92387		1.0824	7	15	0.600	0.99	
1,4-Dichlorobenzene		1.2126	1.1003	1.0731	1.0813	1.1114	1.1291	1.1544	1.1496	AVRG		0.88773		1.1265	4	15	0.500	0.99	
n-Butylbenzene		2.0226	1.8854	1.6866	1.5564	1.6771	1.7684	1.8237	1.6974	AVRG		0.56667		1.7647	8	15	0.05	0.99	
1,2-Dichlorobenzene		1.0183	0.9661	0.9315	0.9287	0.9089	0.9959	1.0485	1.0610	AVRG		1.01796		0.9824	6	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane			0.0720	0.0759	0.0760	0.0797	0.0754	0.0753	0.0730	AVRG		13.2772		0.0753	3	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.5224	0.4755	0.4535	0.4367	0.4725	0.4796	0.5037	0.5299	AVRG		2.06517		0.4842	7	15	0.200	0.99	
Hexachlorobutadiene		0.2693	0.2630	0.2204	0.2103	0.2332	0.2440	0.2642	0.2691	AVRG		4.05386		0.2467	9	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		0.8151	0.7628	0.7478	0.7542	0.7943	0.7789	0.8153	0.8463	AVRG		1.26688		0.7893	4	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.4428	0.4119	0.3943	0.3982	0.4187	0.4258	0.4441	0.4612	AVRG		2.35501		0.4246	6	15	0.05	0.99	
Dibromofluoromethane	0.6868	0.6789	0.6843	0.6726	0.6651	0.6678	0.6353	0.6092	0.6036	AVRG		1.52449		0.6560	5	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3951	0.3944	0.3953	0.3913	0.3786	0.3828	0.3381	0.3084	0.2890	AVRG		2.74978		0.3637	11	15	0.05	0.99	
Toluene-d8	1.3774	1.4049	1.3863	1.3636	1.3956	1.3798	1.3651	1.3614	1.3608	AVRG		0.72611		1.3772	1	15	0.05	0.99	
Bromofluorobenzene	1.0471	1.0449	1.0348	1.0110	0.9983	0.9760	0.9224	0.9355	0.9218	AVRG		1.01217		0.9880	5	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	14	2.0000	7	5.0000	12	10.000	-10	20.000	8	50.000	-11	75.000	-8	100.00	-11
Chloromethane	0.5000	-11	1.0000	-9	2.0000	-1	5.0000	0	10.000	1	20.000	1	50.000	-1	75.000	0		
Vinyl Chloride	0.5000	19	1.0000	9	2.0000	12	5.0000	6	10.000	2	20.000	3	50.000	-13	75.000	-19	100.00	-19
Bromomethane	0.5000	-5	1.0000	-11	2.0000	-16	5.0000	-13	10.000	0	20.000	6	50.000	11	75.000	13	100.00	16
Chloroethane			1.0000	10	2.0000	12	5.0000	1	10.000	4	20.000	0	50.000	-8	75.000	-11	100.00	-9
Trichlorofluoromethane			1.0000	12	2.0000	8	5.0000	8	10.000	-4	20.000	3	50.000	-9	75.000	-8	100.00	-9
Acetone									10.000	17	20.000	10	50.000	-5	75.000	-7	100.00	-15
Freon 113			0.5000	18	2.0000	15	5.0000	0	10.000	-18	20.000	-5	50.000	-4	75.000	-4	100.00	-1
1,1-Dichloroethene			0.5000	13	2.0000	12	5.0000	-3	10.000	-8	20.000	-3	50.000	-4	75.000	-5	100.00	-2
Methylene Chloride			0.5000	8	2.0000	7	5.0000	0	10.000	3	20.000	0	50.000	-7	75.000	-8	100.00	-4
Carbon Disulfide			0.5000	13	2.0000	8	5.0000	0	10.000	-7	20.000	-2	50.000	-4	75.000	-6	100.00	-2
MTBE			0.5000	13	2.0000	7	5.0000	-1	10.000	4	20.000	0	50.000	-5	75.000	-12	100.00	-7
trans-1,2-Dichloroethene			0.5000	11	2.0000	5	5.0000	-1	10.000	-3	20.000	0	50.000	-4	75.000	-6	100.00	-2
Vinyl Acetate					2.0000	11	5.0000	4	10.000	4	20.000	0	50.000	0	75.000	-9	100.00	-12
1,1-Dichloroethane			0.5000	13	2.0000	9	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-10	100.00	-11
2-Butanone							5.0000	10	10.000	13	20.000	6	50.000	-6	75.000	-11	100.00	-12
2,2-Dichloropropane			0.5000	19	2.0000	14	5.0000	2	10.000	-1	20.000	-3	50.000	-6	75.000	-13	100.00	-13
cis-1,2-Dichloroethene			0.5000	6	2.0000	3	5.0000	-3	10.000	0	20.000	1	50.000	-2	75.000	-3	100.00	-1
Chloroform			0.5000	13	2.0000	6	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-9	100.00	-9
Bromochloromethane			0.5000	7	2.0000	0	5.0000	-5	10.000	1	20.000	-2	50.000	-1	75.000	-1	100.00	1
1,1,1-Trichloroethane			0.5000	**23**	2.0000	15	5.0000	0	10.000	-4	20.000	0	50.000	-7	75.000	-13	100.00	-15
1,1-Dichloropropene			0.5000	**21**	2.0000	5	5.0000	-4	10.000	-7	20.000	-3	50.000	-3	75.000	-3	100.00	-5
Carbon Tetrachloride			0.5000	11	2.0000	9	5.0000	-3	10.000	-7	20.000	-1	50.000	-1	75.000	-5	100.00	-2
1,2-Dichloroethane			0.5000	11	2.0000	8	5.0000	-2	10.000	7	20.000	3	50.000	-3	75.000	-10	100.00	-13
Benzene			0.5000	9	2.0000	2	5.0000	-3	10.000	-1	20.000	0	50.000	-1	75.000	-3	100.00	-3
Trichloroethene			0.5000	11	2.0000	5	5.0000	-2	10.000	-6	20.000	-2	50.000	-3	75.000	-2	100.00	0
1,2-Dichloropropane			0.5000	11	2.0000	2	5.0000	-3	10.000	1	20.000	0	50.000	-2	75.000	-5	100.00	-5
Bromodichloromethane			0.5000	4	2.0000	-1	5.0000	-3	10.000	4	20.000	2	50.000	1	75.000	-5	100.00	-3
Dibromomethane			0.5000	3	2.0000	0	5.0000	-1	10.000	3	20.000	0	50.000	0	75.000	-3	100.00	-3
4-Methyl-2-Pentanone							5.0000	1	10.000	8	20.000	3	50.000	0	75.000	-7	100.00	-6
cis-1,3-Dichloropropene			0.5000	3	2.0000	0	5.0000	-6	10.000	2	20.000	2	50.000	3	75.000	0	100.00	-3
Toluene			0.5000	6	2.0000	2	5.0000	-1	10.000	-4	20.000	0	50.000	7	75.000	-5	100.00	-6
trans-1,3-Dichloropropene			0.5000	4	2.0000	-2	5.0000	-1	10.000	1	20.000	1	50.000	3	75.000	-3	100.00	-3
1,1,2-Trichloroethane			0.5000	-8	2.0000	-5	5.0000	0	10.000	5	20.000	1	50.000	2	75.000	2	100.00	3
2-Hexanone							5.0000	1	10.000	6	20.000	3	50.000	-1	75.000	-3	100.00	-7
1,3-Dichloropropane			0.5000	7	2.0000	-1	5.0000	-4	10.000	1	20.000	-2	50.000	1	75.000	-1	100.00	-2
Tetrachloroethene			0.5000	7	2.0000	-2	5.0000	-10	10.000	-11	20.000	-5	50.000	2	75.000	7	100.00	12
Dibromochloromethane			0.5000	-12	2.0000	-6	5.0000	-4	10.000	0	20.000	2	50.000	5	75.000	6	100.00	9
1,2-Dibromoethane			0.5000	2	2.0000	-3	5.0000	-5	10.000	2	20.000	-1	50.000	1	75.000	1	100.00	3
Chlorobenzene			0.5000	8	2.0000	-2	5.0000	-7	10.000	-2	20.000	-1	50.000	3	75.000	-3	100.00	4
1,1,1,2-Tetrachloroethane			0.5000	-3	2.0000	-7	5.0000	-7	10.000	-1	20.000	-1	50.000	7	75.000	6	100.00	7
Ethylbenzene			0.5000	7	2.0000	-1	5.0000	-5	10.000	-5	20.000	-2	50.000	6	75.000	2	100.00	-1

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	6	1.0000	-2	4.0000	-4	10.000	-5	20.000	-6	40.000	4	100.00	8	150.00	4	200.00	-6
o-Xylene			0.5000	-2	2.0000	-4	5.0000	-5	10.000	-7	20.000	-1	50.000	10	75.000	4	100.00	4
Styrene			0.5000	-6	2.0000	-2	5.0000	1	10.000	2	20.000	11	50.000	10	75.000	-8	100.00	-8
Bromoform			0.5000	-17	2.0000	-12	5.0000	-7	10.000	5	20.000	11	50.000	19				
Isopropylbenzene			0.5000	8	2.0000	4	5.0000	-6	10.000	-7	20.000	1	50.000	3	75.000	1	100.00	-4
1,1,2,2-Tetrachloroethane			0.5000	11	2.0000	1	5.0000	-1	10.000	1	20.000	0	50.000	-4	75.000	-3	100.00	-4
1,2,3-Trichloropropane			0.5000	-3	2.0000	-4	5.0000	0	10.000	2	20.000	1	50.000	3	75.000	5	100.00	-3
Propylbenzene			0.5000	17	2.0000	7	5.0000	1	10.000	-10	20.000	1	50.000	1	75.000	-6	100.00	-12
Bromobenzene			0.5000	-1	2.0000	-6	5.0000	-5	10.000	-5	20.000	1	50.000	9	75.000	7	100.00	1
1,3,5-Trimethylbenzene			0.5000	11	2.0000	6	5.0000	-1	10.000	-2	20.000	-1	50.000	1	75.000	-2	100.00	-12
2-Chlorotoluene			0.5000	15	2.0000	10	5.0000	3	10.000	0	20.000	0	50.000	-4	75.000	-8	100.00	-16
4-Chlorotoluene			0.5000	11	2.0000	4	5.0000	0	10.000	-3	20.000	-4	50.000	3	75.000	-4	100.00	-6
tert-Butylbenzene			0.5000	3	2.0000	3	5.0000	-6	10.000	-10	20.000	-3	50.000	5	75.000	6	100.00	1
1,2,4-Trimethylbenzene			0.5000	2	2.0000	4	5.0000	-1	10.000	-3	20.000	-2	50.000	5	75.000	-2	100.00	-3
sec-Butylbenzene			0.5000	5	2.0000	3	5.0000	-4	10.000	-12	20.000	-4	50.000	6	75.000	5	100.00	1
para-Isopropyl Toluene			0.5000	3	2.0000	2	5.0000	-5	10.000	-13	20.000	-2	50.000	8	75.000	4	100.00	3
1,3-Dichlorobenzene			0.5000	1	2.0000	-5	5.0000	-9	10.000	-7	20.000	-4	50.000	4	75.000	11	100.00	9
1,4-Dichlorobenzene			0.5000	8	2.0000	-2	5.0000	-5	10.000	-4	20.000	-1	50.000	0	75.000	2	100.00	2
n-Butylbenzene			0.5000	15	2.0000	7	5.0000	-4	10.000	-12	20.000	-5	50.000	0	75.000	3	100.00	-4
1,2-Dichlorobenzene			0.5000	4	2.0000	-2	5.0000	-5	10.000	-5	20.000	-7	50.000	1	75.000	7	100.00	8
1,2-Dibromo-3-Chloropropane					2.0000	-4	5.0000	1	10.000	1	20.000	6	50.000	0	75.000	0	100.00	-3
1,2,4-Trichlorobenzene			0.5000	8	2.0000	-2	5.0000	-6	10.000	-10	20.000	-2	50.000	-1	75.000	4	100.00	9
Hexachlorobutadiene			0.5000	9	2.0000	7	5.0000	-11	10.000	-15	20.000	-5	50.000	-1	75.000	7	100.00	9
Naphthalene			0.5000	3	2.0000	-3	5.0000	-5	10.000	-4	20.000	1	50.000	-1	75.000	3	100.00	7
1,2,3-Trichlorobenzene			0.5000	4	2.0000	-3	5.0000	-7	10.000	-6	20.000	-1	50.000	0	75.000	5	100.00	9
Dibromofluoromethane	50.000	5	50.000	3	50.000	4	50.000	3	50.000	1	50.000	2	50.000	-3	50.000	-7	50.000	-8
1,2-Dichloroethane-d4	50.000	9	50.000	8	50.000	9	50.000	8	50.000	4	50.000	5	50.000	-7	50.000	-15	50.000	**-21**
Toluene-d8	50.000	0	50.000	2	50.000	1	50.000	-1	50.000	1	50.000	0	50.000	-1	50.000	-1	50.000	-1
Bromofluorobenzene	50.000	6	50.000	6	50.000	5	50.000	2	50.000	1	50.000	-1	50.000	-7	50.000	-5	50.000	-7

DAR 07/08/15 [Vinyl Acetate]: Combined split peak in 10PPB (ig711).

DAR 07/08/15 [2-Butanone]: Combined split peak in multiple levels.

Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; QUAD=Quadratic regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Cal Date : 07-JUL-2015 Type : WATER

ICV 485271359016 (ig716 07-JUL-2015) stds: S26358 (10000X), S27403 (5000X)
ICV 485271359017 (ig717 07-JUL-2015) stds: S27558 (10000X), S27556 (10000X), S27533 (10000X), S27403 (5000X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	485271359016	20.00	14.29	ug/L	**-29**	20	v- ***
Chloromethane	485271359016	20.00	16.82	ug/L	-16	20	
Vinyl Chloride	485271359016	20.00	16.27	ug/L	-19	20	
Bromomethane	485271359016	20.00	17.31	ug/L	-13	20	
Chloroethane	485271359016	20.00	18.80	ug/L	-6	20	
Trichlorofluoromethane	485271359016	20.00	17.41	ug/L	-13	20	
Acetone	485271359017	25.00	22.76	ug/L	-9	20	
Freon 113	485271359017	25.00	21.56	ug/L	-14	20	
1,1-Dichloroethene	485271359017	25.00	23.34	ug/L	-7	20	
Methylene Chloride	485271359017	25.00	23.47	ug/L	-6	20	
Carbon Disulfide	485271359017	25.00	21.03	ug/L	-16	20	
MTBE	485271359017	25.00	22.99	ug/L	-8	20	
trans-1,2-Dichloroethene	485271359017	25.00	24.14	ug/L	-3	20	
Vinyl Acetate	485271359017	25.00	26.60	ug/L	6	20	
1,1-Dichloroethane	485271359017	25.00	22.68	ug/L	-9	20	
2-Butanone	485271359017	25.00	22.78	ug/L	-9	20	
2,2-Dichloropropane	485271359017	25.00	22.39	ug/L	-10	20	
cis-1,2-Dichloroethene	485271359017	25.00	24.75	ug/L	-1	20	
Chloroform	485271359017	25.00	23.52	ug/L	-6	20	
Bromochloromethane	485271359017	25.00	24.56	ug/L	-2	20	
1,1,1-Trichloroethane	485271359017	25.00	23.24	ug/L	-7	20	
1,1-Dichloropropene	485271359017	25.00	23.49	ug/L	-6	20	
Carbon Tetrachloride	485271359017	25.00	24.64	ug/L	-1	20	
1,2-Dichloroethane	485271359017	25.00	23.61	ug/L	-6	20	
Benzene	485271359017	25.00	24.51	ug/L	-2	20	
Trichloroethene	485271359017	25.00	24.18	ug/L	-3	20	
1,2-Dichloropropane	485271359017	25.00	22.46	ug/L	-10	20	
Bromodichloromethane	485271359017	25.00	23.36	ug/L	-7	20	
Dibromomethane	485271359017	25.00	24.06	ug/L	-4	20	
4-Methyl-2-Pentanone	485271359017	25.00	23.54	ug/L	-6	20	
cis-1,3-Dichloropropene	485271359017	25.00	23.93	ug/L	-4	20	
Toluene	485271359017	25.00	26.13	ug/L	5	20	
trans-1,3-Dichloropropene	485271359017	25.00	22.36	ug/L	-11	20	
1,1,2-Trichloroethane	485271359017	25.00	24.68	ug/L	-1	20	
2-Hexanone	485271359017	25.00	24.97	ug/L	0	20	
1,3-Dichloropropane	485271359017	25.00	25.33	ug/L	1	20	
Tetrachloroethene	485271359017	25.00	26.39	ug/L	6	20	
Dibromochloromethane	485271359017	25.00	25.02	ug/L	0	20	
1,2-Dibromoethane	485271359017	25.00	24.56	ug/L	-2	20	
Chlorobenzene	485271359017	25.00	25.69	ug/L	3	20	
1,1,1,2-Tetrachloroethane	485271359017	25.00	24.85	ug/L	-1	20	
Ethylbenzene	485271359017	25.00	25.96	ug/L	4	20	
m,p-Xylenes	485271359017	50.00	54.43	ug/L	9	20	
o-Xylene	485271359017	25.00	26.06	ug/L	4	20	
Styrene	485271359017	25.00	28.24	ug/L	13	20	
Bromoform	485271359017	25.00	27.85	ug/L	11	20	
Isopropylbenzene	485271359017	25.00	26.53	ug/L	6	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	485271359017	25.00	24.86	ug/L	-1	20	
1,2,3-Trichloropropane	485271359017	25.00	25.68	ug/L	3	20	
Propylbenzene	485271359017	25.00	26.48	ug/L	6	20	
Bromobenzene	485271359017	25.00	26.98	ug/L	8	20	
1,3,5-Trimethylbenzene	485271359017	25.00	28.15	ug/L	13	20	
2-Chlorotoluene	485271359017	25.00	26.64	ug/L	7	20	
4-Chlorotoluene	485271359017	25.00	25.74	ug/L	3	20	
tert-Butylbenzene	485271359017	25.00	26.83	ug/L	7	20	
1,2,4-Trimethylbenzene	485271359017	25.00	27.02	ug/L	8	20	
sec-Butylbenzene	485271359017	25.00	25.87	ug/L	3	20	
para-Isopropyl Toluene	485271359017	25.00	26.43	ug/L	6	20	
1,3-Dichlorobenzene	485271359017	25.00	26.43	ug/L	6	20	
1,4-Dichlorobenzene	485271359017	25.00	26.16	ug/L	5	20	
n-Butylbenzene	485271359017	25.00	25.97	ug/L	4	20	
1,2-Dichlorobenzene	485271359017	25.00	26.50	ug/L	6	20	
1,2-Dibromo-3-Chloropropane	485271359017	25.00	24.31	ug/L	-3	20	
1,2,4-Trichlorobenzene	485271359017	25.00	26.13	ug/L	5	20	
Hexachlorobutadiene	485271359017	25.00	26.11	ug/L	4	20	
Naphthalene	485271359017	25.00	23.59	ug/L	-6	20	
1,2,3-Trichlorobenzene	485271359017	25.00	26.60	ug/L	6	20	

485271359016: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15
485271359017: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

-=low bias v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 IDF : 1.0
Seqnum : 475304292008.1 File : hgu08 Time : 30-JUL-2015 12:08
Cal : 475253923002 Caldate : 25-JUN-2015 Caltype : WATER
Standards: S26360 (25000X), S27559 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.4691	0.4400	20.00	18.76	ug/L	-6	20	0.1000	v+ ***
Chloromethane	0.7984	0.8754	20.00	21.93	ug/L	10	20	0.1000	
Vinyl Chloride	0.6642	0.6927	20.00	20.86	ug/L	4	20	0.1000	
Bromomethane	0.3569	0.3455	20.00	19.36	ug/L	-3	20	0.1000	
Chloroethane	0.4789	0.4292	20.00	17.92	ug/L	-10	20	0.1000	
Trichlorofluoromethane	0.7498	0.6491	20.00	17.31	ug/L	-13	20	0.1000	
Acetone	0.1763	0.1451	20.00	16.47	ug/L	-18	20	0.1000	
Freon 113	0.4380	0.3372	20.00	15.40	ug/L	**-23**	20	0.1000	c- v- ***
1,1-Dichloroethene	0.4652	0.3766	20.00	16.19	ug/L	-19	20	0.1000	
Methylene Chloride	0.5883	0.5293	20.00	17.99	ug/L	-10	20	0.1000	
Carbon Disulfide	1.9197	1.6308	20.00	16.99	ug/L	-15	20	0.1000	v- ***
MTBE	1.3099	1.1843	20.00	18.08	ug/L	-10	20	0.1000	
trans-1,2-Dichloroethene	0.5291	0.4729	20.00	17.88	ug/L	-11	20	0.1000	
Vinyl Acetate	0.8079	0.9759	20.00	24.16	ug/L	**21**	20	0.0500	c+ v+ ***
1,1-Dichloroethane	1.1779	1.1074	20.00	18.80	ug/L	-6	20	0.2000	
2-Butanone	0.2244	0.1986	20.00	17.70	ug/L	-11	20	0.1000	
2,2-Dichloropropane	0.7326	0.8278	20.00	22.60	ug/L	13	20	0.0500	
cis-1,2-Dichloroethene	0.5930	0.5452	20.00	18.39	ug/L	-8	20	0.1000	
Chloroform	1.0077	0.9423	20.00	18.70	ug/L	-6	20	0.2000	
Bromochloromethane	0.2784	0.2457	20.00	17.65	ug/L	-12	20	0.0500	
1,1,1-Trichloroethane	0.7213	0.6762	20.00	18.75	ug/L	-6	20	0.1000	
1,1-Dichloropropene	0.4966	0.4689	20.00	18.88	ug/L	-6	20	0.0500	
Carbon Tetrachloride	0.3839	0.3606	20.00	18.79	ug/L	-6	20	0.1000	
1,2-Dichloroethane	0.4749	0.4858	20.00	20.46	ug/L	2	20	0.1000	
Benzene	1.4114	1.2808	20.00	18.15	ug/L	-9	20	0.5000	
Trichloroethene	0.3451	0.3101	20.00	17.98	ug/L	-10	20	0.2000	
1,2-Dichloropropane	0.4377	0.4182	20.00	19.11	ug/L	-4	20	0.1000	
Bromodichloromethane	0.4845	0.4739	20.00	19.57	ug/L	-2	20	0.2000	
Dibromomethane	0.2104	0.1916	20.00	18.21	ug/L	-9	20	0.0500	
4-Methyl-2-Pentanone	0.3230	0.2656	20.00	16.45	ug/L	-18	20	0.1000	
cis-1,3-Dichloropropene	0.5891	0.5685	20.00	19.30	ug/L	-4	20	0.2000	
Toluene	0.9206	0.8179	20.00	17.77	ug/L	-11	20	0.4000	
trans-1,3-Dichloropropene	0.5580	0.5136	20.00	18.41	ug/L	-8	20	0.1000	
1,1,2-Trichloroethane	0.1704	0.1501	20.00	17.62	ug/L	-12	20	0.1000	
2-Hexanone	0.2611	0.2213	20.00	16.95	ug/L	-15	20	0.1000	
1,3-Dichloropropane	0.5589	0.5009	20.00	17.92	ug/L	-10	20	0.0500	
Tetrachloroethene	0.3631	0.3357	20.00	18.49	ug/L	-8	20	0.2000	
Dibromochloromethane	0.3917	0.3546	20.00	18.11	ug/L	-9	20	0.1000	
1,2-Dibromoethane	0.3104	0.2743	20.00	17.67	ug/L	-12	20	0.1000	
Chlorobenzene	1.0341	0.9907	20.00	19.16	ug/L	-4	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3771	0.3492	20.00	18.52	ug/L	-7	20	0.0500	
Ethylbenzene	1.7475	1.7009	20.00	19.47	ug/L	-3	20	0.1000	
m,p-Xylenes	0.6412	0.6184	40.00	38.58	ug/L	-4	20	0.1000	
o-Xylene	0.6535	0.6184	20.00	18.92	ug/L	-5	20	0.3000	
Styrene	1.0883	1.0447	20.00	19.20	ug/L	-4	20	0.3000	
Bromoform	0.2379	0.1923	20.00	16.17	ug/L	-19	20	0.1000	
Isopropylbenzene	3.0957	2.9717	20.00	19.20	ug/L	-4	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.6825	0.6128	20.00	17.96	ug/L	-10	20	0.3000	
1,2,3-Trichloropropane	0.1575	0.1366	20.00	17.35	ug/L	-13	20	0.0500	
Propylbenzene	3.6999	3.7466	20.00	20.25	ug/L	1	20	0.0500	
Bromobenzene	0.8605	0.8484	20.00	19.72	ug/L	-1	20	0.0500	
1,3,5-Trimethylbenzene	2.4787	2.4397	20.00	19.69	ug/L	-2	20	0.0500	
2-Chlorotoluene	2.5575	2.5850	20.00	20.22	ug/L	1	20	0.0500	
4-Chlorotoluene	2.2917	2.3107	20.00	20.17	ug/L	1	20	0.0500	
tert-Butylbenzene	2.2669	2.0980	20.00	18.51	ug/L	-7	20	0.0500	
1,2,4-Trimethylbenzene	2.5691	2.5780	20.00	20.07	ug/L	0	20	0.0500	
sec-Butylbenzene	3.3351	3.1672	20.00	18.99	ug/L	-5	20	0.0500	
para-Isopropyl Toluene	2.6261	2.6049	20.00	19.84	ug/L	-1	20	0.0500	
1,3-Dichlorobenzene	1.5310	1.4604	20.00	19.08	ug/L	-5	20	0.6000	
1,4-Dichlorobenzene	1.5176	1.4631	20.00	19.28	ug/L	-4	20	0.5000	
n-Butylbenzene	2.3327	2.3951	20.00	20.54	ug/L	3	20	0.0500	
1,2-Dichlorobenzene	1.4680	1.4040	20.00	19.13	ug/L	-4	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1094	0.0979	20.00	17.89	ug/L	-11	20	0.0500	
1,2,4-Trichlorobenzene	0.8434	0.7768	20.00	18.42	ug/L	-8	20	0.2000	
Hexachlorobutadiene	0.4036	0.4006	20.00	19.85	ug/L	-1	20	0.0500	
Naphthalene	1.6896	1.5104	20.00	17.88	ug/L	-11	20	0.0500	
1,2,3-Trichlorobenzene	0.7623	0.6858	20.00	17.99	ug/L	-10	20	0.0500	
Dibromofluoromethane	0.5429	0.5689	50.00	52.39	ug/L	5	20	0.0500	
1,2-Dichloroethane-d4	0.3471	0.3758	50.00	54.14	ug/L	8	20	0.0500	
Toluene-d8	1.2180	1.2181	50.00	50.00	ug/L	0	20	0.0500	
Bromofluorobenzene	0.9779	1.0037	50.00	51.32	ug/L	3	20	0.0500	

ISTD (ICAL hfp14)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	1032422	1602604	55.23	10.06	10.04	-0.02
1,4-Difluorobenzene	1647573	2511787	52.45	11.26	11.24	-0.02
Chlorobenzene-d5	1426621	2143831	50.27	15.76	15.74	-0.02
1,4-Dichlorobenzene-d4	722873	1112721	53.93	18.61	18.59	-0.02

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : 20PPB IDF : 1.0
Seqnum : 485305964004.1 File : igv04 Time : 31-JUL-2015 12:35
Cal : 485271359002 Caldate : 07-JUL-2015 Caltype : WATER
Standards: S26360 (25000X), S27823 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.7284	0.7796	20.00	21.41	ug/L	7	20	0.1000	v- ***
Chloromethane	1.1081	1.1009	20.00	21.77	ug/L	9	20	0.1000	
Vinyl Chloride	0.8085	0.8720	20.00	21.57	ug/L	8	20	0.1000	
Bromomethane	0.3902	0.4069	20.00	20.86	ug/L	4	20	0.1000	
Chloroethane	0.4543	0.4776	20.00	21.03	ug/L	5	20	0.1000	
Trichlorofluoromethane	0.8290	0.8434	20.00	20.35	ug/L	2	20	0.1000	
Acetone	0.1067	0.1221	20.00	22.88	ug/L	14	20	0.1000	
Freon 113	0.3835	0.3650	20.00	19.03	ug/L	-5	20	0.1000	
1,1-Dichloroethene	0.3943	0.3947	20.00	20.02	ug/L	0	20	0.1000	
Methylene Chloride	0.5076	0.5219	20.00	20.56	ug/L	3	20	0.1000	
Carbon Disulfide	1.6924	1.6734	20.00	19.78	ug/L	-1	20	0.1000	
MTBE	0.9109	0.9355	20.00	20.54	ug/L	3	20	0.1000	
trans-1,2-Dichloroethene	0.4571	0.4646	20.00	20.33	ug/L	2	20	0.1000	
Vinyl Acetate	0.8085	1.0786	20.00	26.68	ug/L	**33**	20	0.0500	c+ ***
1,1-Dichloroethane	1.0378	1.1518	20.00	22.20	ug/L	11	20	0.2000	
2-Butanone	0.1625	0.1803	20.00	22.19	ug/L	11	20	0.1000	
2,2-Dichloropropane	0.7359	0.8599	20.00	23.37	ug/L	17	20	0.0500	
cis-1,2-Dichloroethene	0.5063	0.5354	20.00	21.15	ug/L	6	20	0.1000	
Chloroform	0.9672	1.0563	20.00	21.84	ug/L	9	20	0.2000	
Bromochloromethane	0.2340	0.2350	20.00	20.09	ug/L	0	20	0.0500	
1,1,1-Trichloroethane	0.7541	0.8352	20.00	22.15	ug/L	11	20	0.1000	
1,1-Dichloropropene	0.4477	0.4121	20.00	18.41	ug/L	-8	20	0.0500	
Carbon Tetrachloride	0.4101	0.3966	20.00	19.35	ug/L	-3	20	0.1000	
1,2-Dichloroethane	0.4101	0.4071	20.00	19.85	ug/L	-1	20	0.1000	
Benzene	1.1717	1.1500	20.00	19.63	ug/L	-2	20	0.5000	
Trichloroethene	0.3094	0.2819	20.00	18.22	ug/L	-9	20	0.2000	
1,2-Dichloropropane	0.3638	0.3571	20.00	19.63	ug/L	-2	20	0.1000	
Bromodichloromethane	0.4323	0.4245	20.00	19.64	ug/L	-2	20	0.2000	
Dibromomethane	0.1772	0.1688	20.00	19.05	ug/L	-5	20	0.0500	
4-Methyl-2-Pentanone	0.2332	0.2271	20.00	19.47	ug/L	-3	20	0.1000	
cis-1,3-Dichloropropene	0.4784	0.4707	20.00	19.68	ug/L	-2	20	0.2000	
Toluene	0.7375	0.6647	20.00	18.02	ug/L	-10	20	0.4000	
trans-1,3-Dichloropropene	0.4428	0.3940	20.00	17.79	ug/L	-11	20	0.1000	
1,1,2-Trichloroethane	0.1258	0.1128	20.00	17.93	ug/L	-10	20	0.1000	
2-Hexanone	0.1878	0.1654	20.00	17.62	ug/L	-12	20	0.1000	
1,3-Dichloropropane	0.4065	0.3516	20.00	17.30	ug/L	-14	20	0.0500	
Tetrachloroethene	0.2847	0.2108	20.00	14.80	ug/L	**-26**	20	0.2000	c- ***
Dibromochloromethane	0.2976	0.2620	20.00	17.60	ug/L	-12	20	0.1000	
1,2-Dibromoethane	0.2287	0.1933	20.00	16.91	ug/L	-15	20	0.1000	
Chlorobenzene	0.8211	0.7064	20.00	17.21	ug/L	-14	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3110	0.2498	20.00	16.06	ug/L	-20	20	0.0500	
Ethylbenzene	1.4375	1.2121	20.00	16.86	ug/L	-16	20	0.1000	
m,p-Xylenes	0.5020	0.4476	40.00	35.67	ug/L	-11	20	0.1000	
o-Xylene	0.4937	0.4224	20.00	17.11	ug/L	-14	20	0.3000	
Styrene	0.7940	0.7454	20.00	18.78	ug/L	-6	20	0.3000	
Bromoform	0.1444	0.1317	20.00	18.25	ug/L	-9	20	0.1000	
Isopropylbenzene	2.4531	1.9756	20.00	16.11	ug/L	-19	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.4890	0.4297	20.00	17.58	ug/L	-12	20	0.3000	
1,2,3-Trichloropropane	0.1142	0.0984	20.00	17.24	ug/L	-14	20	0.0500	
Propylbenzene	2.9761	2.4140	20.00	16.22	ug/L	-19	20	0.0500	
Bromobenzene	0.6434	0.5537	20.00	17.21	ug/L	-14	20	0.0500	
1,3,5-Trimethylbenzene	1.9436	1.5641	20.00	16.09	ug/L	-20	20	0.0500	
2-Chlorotoluene	2.0223	1.7476	20.00	17.28	ug/L	-14	20	0.0500	
4-Chlorotoluene	1.8552	1.5561	20.00	16.78	ug/L	-16	20	0.0500	
tert-Butylbenzene	1.6866	1.2426	20.00	14.73	ug/L	**-26**	20	0.0500	c- ***
1,2,4-Trimethylbenzene	1.9258	1.5528	20.00	16.13	ug/L	-19	20	0.0500	
sec-Butylbenzene	2.5186	1.8402	20.00	14.61	ug/L	**-27**	20	0.0500	c- ***
para-Isopropyl Toluene	1.9032	1.3630	20.00	14.32	ug/L	**-28**	20	0.0500	c- ***
1,3-Dichlorobenzene	1.0824	0.8903	20.00	16.45	ug/L	-18	20	0.6000	
1,4-Dichlorobenzene	1.1265	0.9781	20.00	17.37	ug/L	-13	20	0.5000	
n-Butylbenzene	1.7647	1.2454	20.00	14.11	ug/L	**-29**	20	0.0500	c- ***
1,2-Dichlorobenzene	0.9824	0.8372	20.00	17.04	ug/L	-15	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.0753	0.0648	20.00	17.22	ug/L	-14	20	0.0500	
1,2,4-Trichlorobenzene	0.4842	0.3455	20.00	14.27	ug/L	**-29**	20	0.2000	c- ***
Hexachlorobutadiene	0.2467	0.1603	20.00	12.99	ug/L	**-35**	20	0.0500	c- ***
Naphthalene	0.7893	0.5369	20.00	13.60	ug/L	**-32**	20	0.0500	c- ***
1,2,3-Trichlorobenzene	0.4246	0.3064	20.00	14.43	ug/L	**-28**	20	0.0500	c- ***
Dibromofluoromethane	0.6560	0.7598	50.00	57.92	ug/L	16	20	0.0500	
1,2-Dichloroethane-d4	0.3637	0.4146	50.00	57.01	ug/L	14	20	0.0500	
Toluene-d8	1.3772	1.3423	50.00	48.73	ug/L	-3	20	0.0500	
Bromofluorobenzene	0.9880	0.9827	50.00	49.73	ug/L	-1	20	0.0500	

ISTD (ICAL ig713)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	987439	1158431	17.32	11.04	11.00	-0.04
1,4-Difluorobenzene	1506110	2022004	34.25	12.30	12.27	-0.03
Chlorobenzene-d5	1326780	1944148	46.53	16.67	16.64	-0.03
1,4-Dichlorobenzene-d4	740445	1008685	36.23	19.10	19.09	-0.01

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 475304292

Date : 07/30/15 Reference : hfp14
Sequence : MSVOA08 hgu Analyzed : 06/25/15 15:23

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	1032422	10.06	1647573	11.26	1426621	15.76	722873	18.61
		LOWER LIMIT	516211	9.56	823787	10.76	713311	15.26	361437	18.11
		UPPER LIMIT	2064844	10.56	3295146	11.76	2853242	16.26	1445746	19.11
007	CCV		1536059	10.05	2400302	11.24	2003421	15.75	1046223	18.60
008	CCV		1602604	10.04	2511787	11.24	2143831	15.74	1112721	18.59
010	BS	QC797679	1532749	10.05	2447306	11.24	2019881	15.74	1093012	18.59
011	BSD	QC797680	1541975	10.04	2417296	11.25	2051568	15.74	1078812	18.60
013	BLANK	QC797681	1549473	10.05	2436563	11.25	2082560	15.75	1098204	18.60
014	SAMPLE	268513-011	1547385	10.05	2292614	11.25	1937012	15.75	1086319	18.60
015	SAMPLE	268513-024	1497442	10.05	2160319	11.26	1907787	15.75	1050251	18.60
016	SAMPLE	268556-010	1403002	10.05	2135879	11.25	1875977	15.75	1025472	18.60
017	SAMPLE	268556-005	1362728	10.06	2118798	11.25	1775532	15.75	994659	18.60
018	SAMPLE	268556-008	1370659	10.05	2068173	11.25	1772585	15.75	957631	18.60
019	SAMPLE	268556-001	1298928	10.05	2060177	11.25	1705574	15.75	950946	18.60
020	SAMPLE	268556-003	1331713	10.05	2031081	11.25	1800034	15.75	1019609	18.60
021	SAMPLE	268513-015	1238123	10.06	1928962	11.25	1579063	15.75	895394	18.60
022	MSS	268557-001	1274003	10.05	2011628	11.25	1749847	15.75	939487	18.60
023	SAMPLE	268558-001	1262242	10.05	1890393	11.25	1710485	15.75	927632	18.60
024	MS	QC797770	1210709	10.05	1856895	11.25	1617821	15.75	946824	18.60
025	MSD	QC797771	1260902	10.05	2052580	11.25	1774853	15.75	992628	18.60

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 485305964

Date : 07/31/15 Reference : ig713
Sequence : MSVOA09 igv Analyzed : 07/07/15 17:12

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	987439	11.04	1506110	12.30	1326780	16.67	740445	19.10
		LOWER LIMIT	493720	10.54	753055	11.80	663390	16.17	370223	18.60
		UPPER LIMIT	1974878	11.54	3012220	12.80	2653560	17.17	1480890	19.60
001	IB		1124730	11.03	2017597	12.29	1954760	16.66	870367	19.09
004	CCV	20PPB	1158431	11.00	2022004	12.27	1944148	16.64	1008685	19.09
005	BS	QC797874	1186250	11.01	2036955	12.28	1950523	16.65	971246	19.09
008	BSD	QC797875	1150168	11.03	1973923	12.29	1867942	16.66	947535	19.09
010	BLANK	QC797876	1180346	11.03	1963006	12.29	1779358	16.66	837186	19.09
011	SAMPLE	268513-011	1117020	11.03	1911656	12.29	1756524	16.66	816318	19.09
012	SAMPLE	268513-015	1114428	11.03	1911849	12.29	1677544	16.66	794489	19.09
013	SAMPLE	268513-024	1033295	11.03	1789625	12.30	1694700	16.66	775036	19.10
014	SAMPLE	268556-001	1035138	11.04	1806514	12.30	1706129	16.66	786188	19.10
015	SAMPLE	268556-003	1044423	11.04	1805906	12.30	1669828	16.66	842533	19.10
016	SAMPLE	268556-005	1017130	11.03	1788480	12.30	1689575	16.66	759948	19.10
017	SAMPLE	268556-008	1012762	11.03	1791963	12.29	1671011	16.66	772586	19.09
018	SAMPLE	268556-010	1020796	11.03	1794274	12.29	1691555	16.66	777212	19.10
019	SAMPLE	268557-001	1031442	11.03	1797054	12.29	1696769	16.65	781778	19.10
020	SAMPLE	268558-001	1014447	11.03	1776847	12.29	1666425	16.66	778900	19.09
021	SAMPLE	268563-015	1094064	11.03	1861286	12.29	1682953	16.66	780511	19.10
022	SAMPLE	268569-010	998292	11.03	1748221	12.29	1638246	16.66	744861	19.10

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475253923

Instrument : MSVOA08 Begun : 06/25/15 08:03
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hfp01	IB				06/25/15 08:03	1.0	1	?t
002	hfp02	IB				06/25/15 08:37	1.0	1	?t
003	hfp03	TUN	BFB			06/25/15 09:42	1.0	2	
004	hfp04	TUN	BFB			06/25/15 09:53	1.0	2	
005	hfp05	TUN	BFB			06/25/15 10:29	1.0	2	
006	hfp06	X	IB			06/25/15 10:53	1.0	1	
007	hfp07	IB	CALIB			06/25/15 11:26	1.0	1	
008	hfp08	ICAL				06/25/15 12:00	1.0	3 4 5 6 1	
009	hfp09	ICAL				06/25/15 12:34	1.0	3 4 5 6 1	
010	hfp10	ICAL				06/25/15 13:07	1.0	3 4 5 6 1	
011	hfp11	ICAL				06/25/15 13:41	1.0	3 4 5 6 1	
012	hfp12	ICAL				06/25/15 14:15	1.0	3 4 5 6 1	
013	hfp13	ICAL				06/25/15 14:49	1.0	3 4 5 6 1	
014	hfp14	ICAL				06/25/15 15:23	1.0	3 4 5 6 1	
015	hfp15	ICAL				06/25/15 15:57	1.0	3 4 5 6 1	
016	hfp16	ICAL				06/25/15 16:31	1.0	3 4 5 6 1	
017	hfp17	ICV				06/25/15 17:05	1.0	7 1	
018	hfp18	ICV				06/25/15 17:39	1.0	8 9 10 1	
019	hfp19	X	IB			06/25/15 18:13	1.0	1	
020	hfp20	X	IB			06/25/15 18:47	1.0	1	
021	hfp21	X	IB			06/25/15 19:20	1.0	1	
022	hfp22	X	IB			06/25/15 19:54	1.0	3 4 11 12 1	cc- cs

DJA 06/26/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 22.

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

Standards used: 1=S27244 2=S27180 3=S26360 4=S27172 5=S27416 6=S26220 7=S26064 8=S27331 9=S27404 10=S27533 11=S27151 12=S25155

Flags used: -=low bias ?t=missing tune cc=CCV CCC failure cs=CCV SPCC failure

Page 1 of 1

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475304292

Instrument : MSVOA08 Begun : 07/30/15 07:32
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hgu01	X	HG			07/30/15 07:32	1.0	1	
002	hgu02	X	IB			07/30/15 08:05	1.0	1	
003	hgu03	TUN	BFB			07/30/15 08:42	1.0	2	t
004	hgu04	TUN	BFB			07/30/15 08:59	1.0	2	t
005	hgu05	TUN	BFB			07/30/15 09:35	1.0	2	t
006	hgu06	TUN	BFB			07/30/15 10:16	1.0	2	
007	hgu07	CCV				07/30/15 10:43	1.0	3 4 5 6 1	cc+
008	hgu08	CCV				07/30/15 12:08	1.0	3 4 5 6 1	
009	hgu09	X				07/30/15 12:51	1.0	7 1	
010	hgu10	BS	QC797679	Water	225639	07/30/15 13:24	1.0	8 9 10 11 1	
011	hgu11	BSD	QC797680	Water	225639	07/30/15 13:58	1.0	8 9 10 11 1	
012	hgu12	X	IB			07/30/15 14:32	1.0	1	
013	hgu13	BLANK	QC797681	Water	225639	07/30/15 15:05	1.0	1	
014	hgu14	SAMPLE	268513-011	Water	225639	07/30/15 15:39	1.0	1	
015	hgu15	SAMPLE	268513-024	Water	225639	07/30/15 16:13	1.0	1	
016	hgu16	SAMPLE	268556-010	Water	225639	07/30/15 16:47	1.0	1	
017	hgu17	SAMPLE	268556-005	Water	225639	07/30/15 17:21	1.0	1	
018	hgu18	SAMPLE	268556-008	Water	225639	07/30/15 17:55	1.0	1	
019	hgu19	SAMPLE	268556-001	Water	225639	07/30/15 18:29	2.0	1	foamer
020	hgu20	SAMPLE	268556-003	Water	225639	07/30/15 19:02	3.333	1	foamer
021	hgu21	SAMPLE	268513-015	Water	225639	07/30/15 19:36	3.333	1	foamer
022	hgu22	MSS	268557-001	Water	225639	07/30/15 20:10	5.0	1	foamer
023	hgu23	SAMPLE	268558-001	Water	225639	07/30/15 20:44	250.0	1	foamer
024	hgu24	MS	QC797770	Water	225639	07/30/15 21:18	5.0	8 9 10 11 1	
025	hgu25	MSD	QC797771	Water	225639	07/30/15 21:51	5.0	8 9 10 11 1	foamer
026	hgu26	X	IB			07/30/15 22:25	1.0	1	
027	hgu27	X	IB			07/30/15 22:59	1.0	1	

DJA 07/31/15 : retuned after file 4

DJA 07/31/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 27.

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27559 5=S27699 6=S26220 7=S27642 8=S27558 9=S27556 10=S27533 11=S26064

Flags used: +=high bias cc=CCV CCC failure t=tune failure

Page 1 of 1

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 485271359

Instrument : MSVOA09 Begun : 07/07/15 10:38
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	ig701	TUN	BFB			07/07/15 10:38	1.0	1	
002	ig702	TUN	BFB			07/07/15 10:49	1.0	1	
003	ig703	IB				07/07/15 11:27	1.0	2	
004	ig704	IB				07/07/15 12:02	1.0	2	
005	ig705	IB				07/07/15 12:36	1.0	2	
006	ig706	IB	CALIB			07/07/15 13:11	1.0	2	
007	ig707	ICAL	.25/.5PPB			07/07/15 13:45	1.0	3 4 5 6 2	
008	ig708	ICAL	.5/1PPB			07/07/15 14:19	1.0	2 3 4 5 6	
009	ig709	ICAL	2PPB			07/07/15 14:54	1.0	3 4 5 6 2	
010	ig710	ICAL	5PPB			07/07/15 15:28	1.0	2 3 4 5 6	
011	ig711	ICAL	10PPB			07/07/15 16:03	1.0	2 3 4 5 6	
012	ig712	ICAL	20PPB			07/07/15 16:37	1.0	2 3 4 5 6	
013	ig713	ICAL	50PPB			07/07/15 17:12	1.0	2 3 4 5 6	
014	ig714	ICAL	75PPB			07/07/15 17:46	1.0	2 3 4 5 6	
015	ig715	ICAL	100PPB			07/07/15 18:21	1.0	2 3 4 5 6	
016	ig716	ICV	GAS			07/07/15 18:56	1.0	7 2	
017	ig717	ICV				07/07/15 19:30	1.0	8 9 10 2	
018	ig718	IB				07/07/15 20:04	1.0	2	

DAR 07/08/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 18.

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

Standards used: 1=S27180 2=S27403 3=S26360 4=S27559 5=S27416 6=S26220 7=S26358 8=S27558 9=S27556 10=S27533

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 485305964

Instrument : MSVOA09 Begun : 07/31/15 11:24
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	igv01	IB				07/31/15 11:24	1.0	1	?t
002	igv02	TUN	BFB			07/31/15 11:52	1.0	2	t
003	igv03	TUN	BFB			07/31/15 12:08	1.0	2	
004	igv04	CCV	20PPB			07/31/15 12:35	1.0	3 4 5 6 1	
005	igv05	BS	QC797874	Water	225691	07/31/15 13:23	1.0	7 8 9 10 1	
006	igv06	X	QC797875	Water	225691	07/31/15 13:57	1.0	7 8 9 10 1	spk
007	igv07	X	IB			07/31/15 14:32	1.0	1	
008	igv08	BSD	QC797875	Water	225691	07/31/15 15:06	1.0	7 8 9 10 1	
009	igv09	X	IB			07/31/15 15:50	1.0	1	
010	igv10	BLANK	QC797876	Water	225691	07/31/15 16:25	1.0	1	
011	igv11	SAMPLE	268513-011	Water	225691	07/31/15 17:00	1.0	1	
012	igv12	SAMPLE	268513-015	Water	225691	07/31/15 17:34	3.333	1	foamer
013	igv13	SAMPLE	268513-024	Water	225691	07/31/15 18:09	1.0	1	
014	igv14	SAMPLE	268556-001	Water	225691	07/31/15 18:43	2.0	1	foamer
015	igv15	SAMPLE	268556-003	Water	225691	07/31/15 19:17	3.333	1	foamer, headspace <= 1 mL
016	igv16	SAMPLE	268556-005	Water	225691	07/31/15 19:52	1.0	1	
017	igv17	SAMPLE	268556-008	Water	225691	07/31/15 20:26	1.0	1	
018	igv18	SAMPLE	268556-010	Water	225691	07/31/15 21:01	1.0	1	
019	igv19	SAMPLE	268557-001	Water	225691	07/31/15 21:35	5.0	1	foamer
020	igv20	SAMPLE	268558-001	Water	225691	07/31/15 22:10	250.0	1	foamer
021	igv21	SAMPLE	268563-015	Water	225691	07/31/15 22:45	33.33	1	foamer, pH > 2
022	igv22	SAMPLE	268569-010	Water	225691	07/31/15 23:19	1.0	1	1:ACE=490
023	igv23	X	IB			07/31/15 23:53	1.0	1	
024	igv24	X	IB			08/01/15 00:28	1.0	1	

NJT 08/01/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 24.

NJT 08/01/15 : Matrix spikes were not performed for this analysis in batch 225691 due to insufficient sample amount.

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/04/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27823 5=S27699 6=S26220 7=S27007 8=S27558 9=S27556 10=S27533

Flags used: ?t=missing tune spk=5% spike rule t=tune failure

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MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJA 7/30/15

For Undiluted samples, pH checked (initials/date): ZJA 7/31/15

Batch #: 225639

Prep Date: 7/30/15

Instrument: MS 8

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268556-1	B	✓			1		2x	foamer				
2	~~-2~~							~~3x~~	↓ DJA 7/30				
3	268557-1	B	✓			3		5x	foamer				
4	-1MS	↓	✓			A1		↓	↓ QC 797770				
5	-1MSD	↓	✓			A1		↓	↓ ↓ 1				
6	268558-1	B	✓			4		250x	↓				
7	~~268460-1~~						1	~~1x~~	~~F12 ✓~~ DJA 7/30				
8	268513-15	B	✓			5		3.33x	foamer				
9	-11	A	✓					1x	EB				
10	-24	A	✓					1x	EB				
11	268556-3	C	✓			6		3x	foamer				
12	-5	B	✓					1x					
13	-8	B	✓					1x					
14	-10	B	✓					1x	SB				
15													
16													
17													
18													
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): NJT 7/31/15
For Undiluted samples, pH checked (initials/date): ~~NJT 8/1/15~~

Batch #: 225691
Prep Date: 7/31/15
Instrument: MS9

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268513-15	C	✓			12		3.33x	foamer, V-/L-Acetone + CS2, TCE hit w/ ↑Surr				
2	-11	B	✓					1x					
3	-24	C	✓										
4	268556-10	C	✓					1x					
5	-5		✓										
6	-8		✓										
7	-1		✓			9		2x	foamer, TCE + Benzene hit w/ surr↑				
8	-3	B	✓		Small Bubble	11		3.33x	foamer,				
9	268557-1	C	✓			10		5x					
10	268558-1		✓			5		250x					
11	268563-15	B		7		12	1	33.3x	Foamer, 2-clave		8/6		
12	268569-10	B	✓					1x					
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

Dilutions for 268557 MSVOA Water
Curtis & Tompkins Laboratories

Type	Sample ID	IDFs
SAMPLE	268557-001	5X
MS	QC797770	5X
MSD	QC797771	5X

Case Narrative Addendum: Manual Integrations for 268557 GC/MS VOA (Water)

For Calibration MSVOA08 (475253923002):
Acetone: Corrected fronting or tailing peak integration in (hfp10).
Ethanol: Corrected fronting or tailing peak integration in multiple levels.

For Calibration MSVOA09 (485271359002):
2-Butanone: Combined split peak in multiple levels.
Vinyl Acetate: Combined split peak in 10PPB (ig711).

Sample Raw Data

CURTIS & TOMPKINS SAMPLE USER REPORT FOR EPA 8260C

Inst	: MSVOA08	Lab ID	: 268557-001	Client ID	: DIC85W07-072815
Seqnum	: 475304292022	Matrix	: Water	Acct	: JMW (TLB)
File	: hgu22	Batch	: 225639	Time	: 30-JUL-2015 20:10
Cal	: 475253923002	Caldate	: 25-JUN-2015	Caltype	: WATER
IDF	: 5.0	Raw Units	: ug/L	Units	: ug/L

Analyte	Raw	Result	RTS	RL	Blank	Flags
Freon 12	0	ND		5.0		u v+
Chloromethane	0.05470	ND		5.0		u
Vinyl Chloride	0.04360	ND		2.5		u
Bromomethane	0	ND		5.0		u
Chloroethane	0.04260	ND		5.0		u
Trichlorofluoromethane	0	ND		5.0		u
Acetone	0.5569	ND		50		u
Freon 113	0	ND		10		c- v- **b***
1,1-Dichloroethene	0	ND		2.5		u
Methylene Chloride	0	ND		50		u
Carbon Disulfide	0.1688	0.8 J		2.5		v- **b***
MTBE	0	ND		2.5		u
trans-1,2-Dichloroethene	0.07880	ND		2.5		u
Vinyl Acetate	0.04000	ND		50		c+ u v+
1,1-Dichloroethane	0	ND		2.5		u
2-Butanone	0.03650	ND		50		u
cis-1,2-Dichloroethene	0.08720	ND		2.5		u
2,2-Dichloropropane	0	ND		2.5		u
Chloroform	0	ND		2.5		u
Bromochloromethane	0	ND		2.5		u
1,1,1-Trichloroethane	0	ND		2.5		u
1,1-Dichloropropene	6.337	32	-0.244	2.5		u x
Carbon Tetrachloride	8.260	41	-0.215	2.5		u x
1,2-Dichloroethane	0	ND		2.5		u
Benzene	0.04800	ND		2.5		u
Trichloroethene	4.518	23	-0.392	2.5		u x
1,2-Dichloropropane	0	ND		2.5		u
Bromodichloromethane	0	ND		2.5		u
Dibromomethane	0	ND		2.5		u
4-Methyl-2-Pentanone	1.402	7.0 J	0.190	50		u x
cis-1,3-Dichloropropene	0	ND		2.5		u
Toluene	0.03400	ND		2.5		u
trans-1,3-Dichloropropene	0	ND		2.5		u
1,1,2-Trichloroethane	0	ND		2.5		u
2-Hexanone	0	ND		50		u
1,3-Dichloropropane	0	ND		2.5		u
Tetrachloroethene	0	ND		2.5		u
Dibromochloromethane	0	ND		2.5		u
1,2-Dibromoethane	0	ND		2.5		u
Chlorobenzene	2.172	11		2.5		u
1,1,1,2-Tetrachloroethane	0	ND		2.5		u
Ethylbenzene	0.06260	ND		2.5		u
m,p-Xylenes	0	ND		2.5		u
o-Xylene	0	ND		2.5		u
Styrene	0	ND		2.5		u
Bromoform	0	ND		5.0		u
Isopropylbenzene	0	ND		2.5		u
1,1,2,2-Tetrachloroethane	0.04630	ND		2.5		u
1,2,3-Trichloropropane	0.1706	0.9 J	-0.254	2.5		u x

Analyte	Raw	Result	RTS	RL	Blank	Flags
Propylbenzene	0.06230	ND		2.5		u
Bromobenzene	0	ND		2.5		u
1,3,5-Trimethylbenzene	0.03160	ND		2.5		u
2-Chlorotoluene	0.09010	ND		2.5		u
4-Chlorotoluene	0	ND		2.5		u
tert-Butylbenzene	0	ND		2.5		u
1,2,4-Trimethylbenzene	0	ND		2.5		u
sec-Butylbenzene	0	ND		2.5		u
para-Isopropyl Toluene	0	ND		2.5		u
1,3-Dichlorobenzene	0.2916	1.5 J		2.5		u
1,4-Dichlorobenzene	1.428	7.1		2.5		u
n-Butylbenzene	0.07040	ND		2.5		u
1,2-Dichlorobenzene	0.1337	0.7 J		2.5		u
1,2-Dibromo-3-Chloropropane	0	ND		10		u
1,2,4-Trichlorobenzene	0	ND		2.5		u
Hexachlorobutadiene	0	ND		10		u
Naphthalene	0	ND		10		u
1,2,3-Trichlorobenzene	0	ND		2.5		u

Surrogate	Raw	Spiked	Result	%Rec	Limits	Flags
Dibromofluoromethane	53.92	250.0	269.6	108	85-115	u
1,2-Dichloroethane-d4	61.70	250.0	308.5	**123***	70-120	u
Toluene-d8	47.91	250.0	239.6	96	85-120	u
Bromofluorobenzene	50.17	250.0	250.8	100	75-120	u

ISTD (ICAL hfp14)	ICAL Area	MSS Area	%Drift	ICAL RT	MSS RT	Drift
Pentafluorobenzene	1032422	1274003	23.40	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	2011628	22.10	11.26	11.25	-0.01
Chlorobenzene-d5	1426621	1749847	22.66	15.76	15.75	-0.01
1,4-Dichlorobenzene-d4	722873	939487	29.97	18.61	18.60	-0.01

07/30/15 : Was diluted due to foaming.

DJA 07/31/15 : RR @ 5x for c-/v- Freon 113 and CS2

DJA 07/31/15 [1,2-Dichloroethane-d4]: Analytes associated with high surrogate recovery are ND

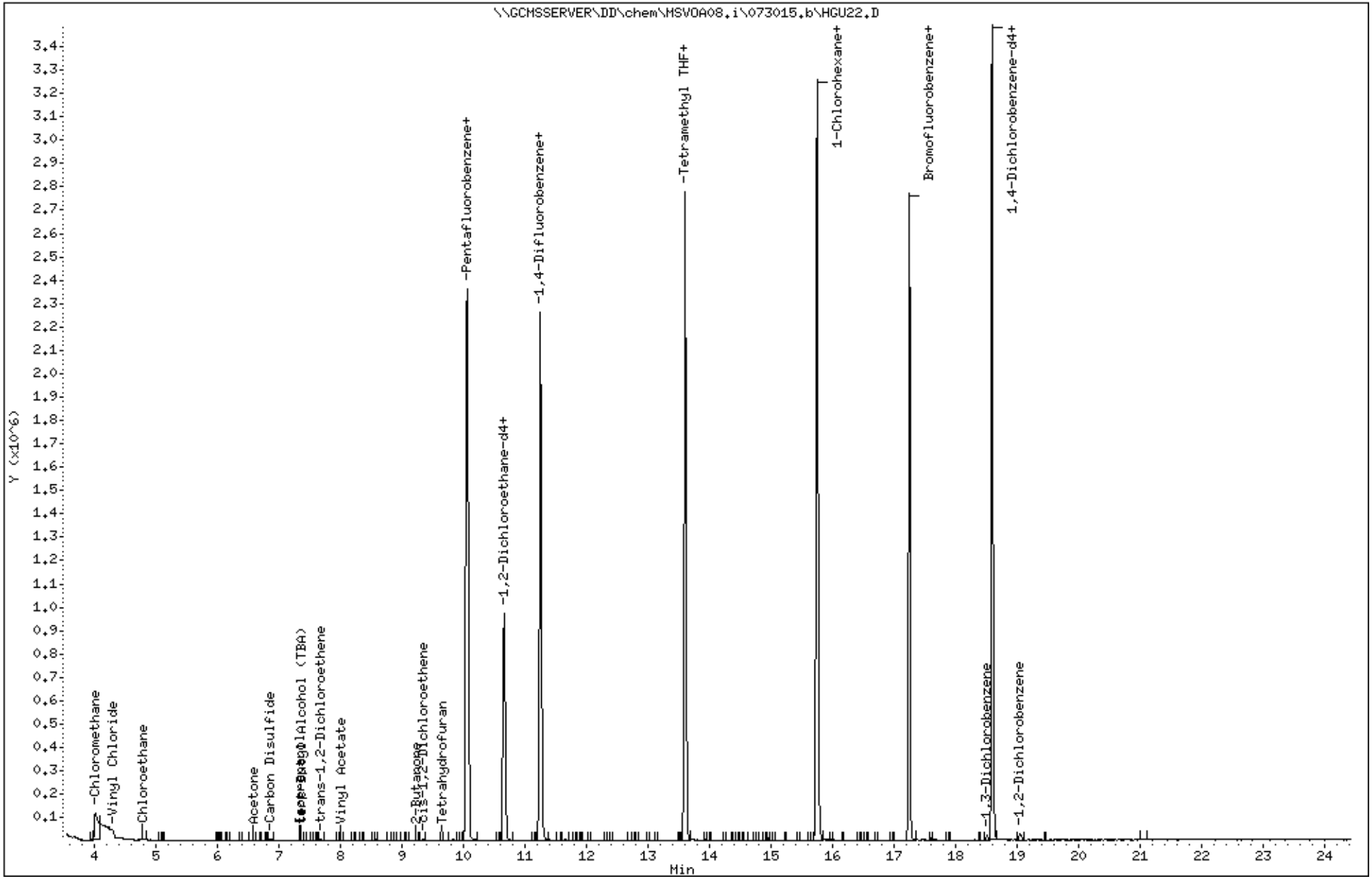
(not in upper half)

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV x=false positive

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D
Date : 30-JUL-2015 20:10
Client ID: DYNA P&T
Sample Info: s,268557-001
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D
Report Date: 30-Jul-2015 20:40

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 20:10 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : s,268557-001
Misc Info : 225639,10/50//foamer
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 22
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
2 Chloromethane	50	4.113	4.103	(0.409)	1112	0.05470	0.0546(a)
3 Vinyl Chloride	62	4.311	4.310	(0.429)	737	0.04357	0.0435(a)
5 Chloroethane	64	4.853	5.148	(0.483)	519	0.04258	0.0425(a)
10 Acetone	43	6.628	6.598	(0.659)	2501	0.55694	0.5569
11 Isopropanol	45	7.181	6.726	(0.714)	129	0.20965	0.2096(a)
13 Carbon Disulfide	76	6.865	6.854	(0.683)	8258	0.16883	0.1688(a)
15 tert-Butyl Alcohol (TBA)	59	7.378	7.357	(0.734)	248	0.31224	0.3122(a)
17 trans-1,2-Dichloroethene	96	7.694	7.673	(0.765)	1062	0.07885	0.0788(a)
20 Vinyl Acetate	43	8.059	8.383	(0.802)	822	0.03996	0.0399(a)
24 2-Butanone	43	9.213	9.320	(0.917)	208	0.03653	0.0365(a)
25 cis-1,2-Dichloroethene	96	9.351	9.330	(0.930)	1317	0.08722	0.0872(a)
26 Tetrahydrofuran	42	9.735	9.714	(0.969)	244	0.07990	0.0799(a)
* 29 Pentafluorobenzene	168	10.051	10.040	(1.000)	1274003	50.0000	
30 Dibromofluoromethane	113	10.071	10.050	(1.002)	745957	53.9244	53.9244
32 Carbon Tetrachloride	117	10.051	10.267	(0.893)	127586	8.26008	8.2600
33 1,1-Dichloropropene	75	10.051	10.306	(0.893)	126615	6.33726	6.3372

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D
Report Date: 30-Jul-2015 20:40

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
34 1,2-Dichloroethane-d4	65	10.662	10.651	(0.947)	861597	61.6979	61.6979
36 Benzene	78	10.652	10.642	(0.947)	2726	0.04801	0.0480(a)
* 38 1,4-Difluorobenzene	114	11.254	11.233	(1.000)	2011628	50.0000	
39 Trichloroethene	95	11.254	11.648	(1.000)	62716	4.51762	4.5176
45 Tetramethyl THF	43	13.601	13.166	(1.209)	18019	0.51016	0.5101
47 4-Methyl-2-Pentanone	43	13.601	13.413	(1.209)	18219	1.40208	1.4020
48 Toluene-d8	98	13.601	13.591	(0.863)	2042279	47.9104	47.9104
49 Toluene	92	13.710	13.699	(0.870)	1096	0.03403	0.0340(a)
57 1-Chlorohexane	91	15.752	15.642	(1.000)	3828	0.20220	0.2021(a)
* 58 Chlorobenzene-d5	117	15.752	15.741	(1.000)	1749847	50.0000	
59 Chlorobenzene	112	15.791	15.780	(1.002)	78604	2.17196	2.1719
60 Ethylbenzene	91	15.752	15.839	(1.000)	3828	0.06260	0.0626(a)
67 Bromofluorobenzene	95	17.251	17.240	(0.927)	921786	50.1654	50.1654
68 1,1,2,2-Tetrachloroethane	83	17.251	17.417	(0.927)	594	0.04633	0.0463(a)
70 Propylbenzene	91	17.251	17.457	(0.927)	4331	0.06231	0.0623(a)
71 1,2,3-Trichloropropane	110	17.251	17.506	(0.927)	504	0.17061	0.1706(a)
72 2-Chlorotoluene	91	17.251	17.634	(0.927)	4331	0.09014	0.0901(a)
73 1,3,5-Trimethylbenzene	105	17.251	17.654	(0.927)	1471	0.03158	0.0315(a)
79 1,3-Dichlorobenzene	146	18.523	18.512	(0.996)	8388	0.29159	0.2915(a)
* 80 1,4-Dichlorobenzene-d4	152	18.602	18.591	(1.000)	939487	50.0000	
81 1,4-Dichlorobenzene	146	18.632	18.621	(1.002)	40719	1.42800	1.4279
82 n-Butylbenzene	91	18.602	18.897	(1.000)	3086	0.07042	0.0704(a)
83 1,2-Dichlorobenzene	146	19.075	19.065	(1.025)	3687	0.13370	0.1337(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

[Carbon Disulfide; 0.8 J]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

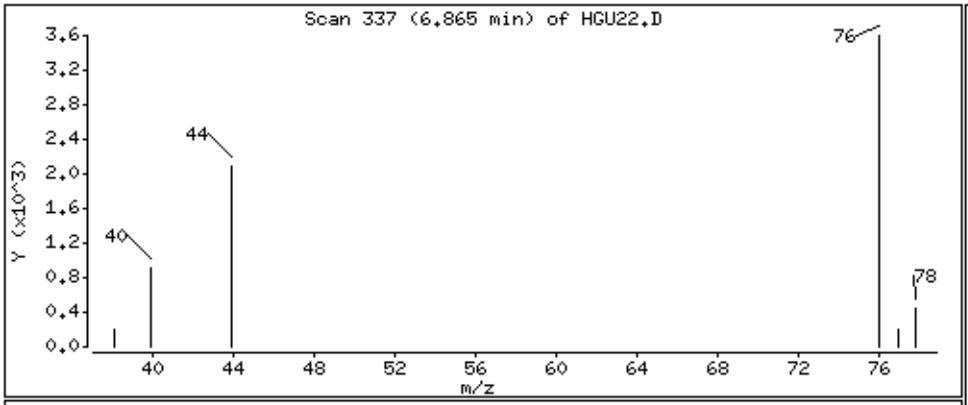
Client ID: DYNA P&T | Instrument: MSVOA08.i

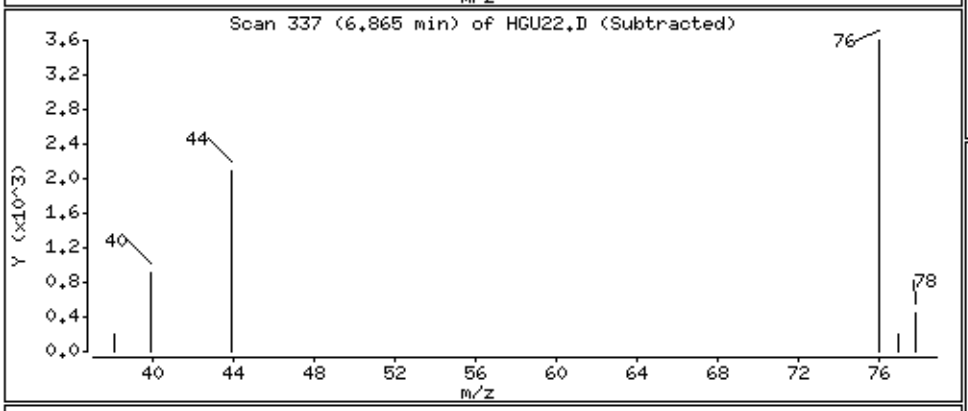
Sample Info: s,268557-001

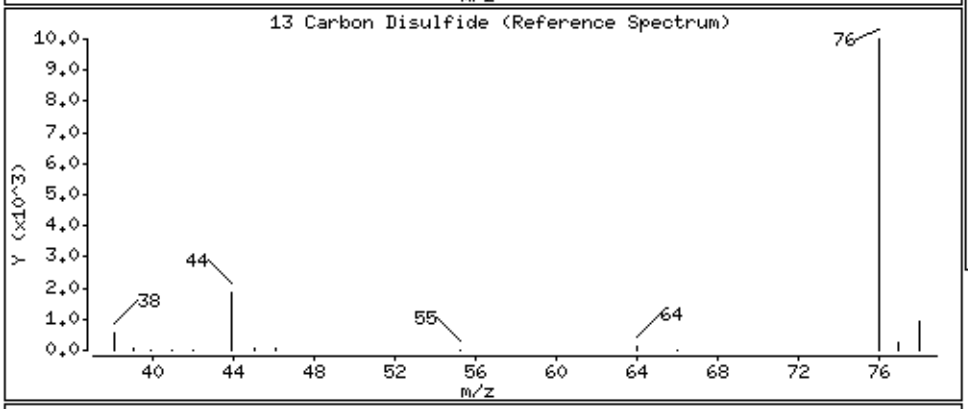
Purge Volume: 5.0 | Operator: VOC

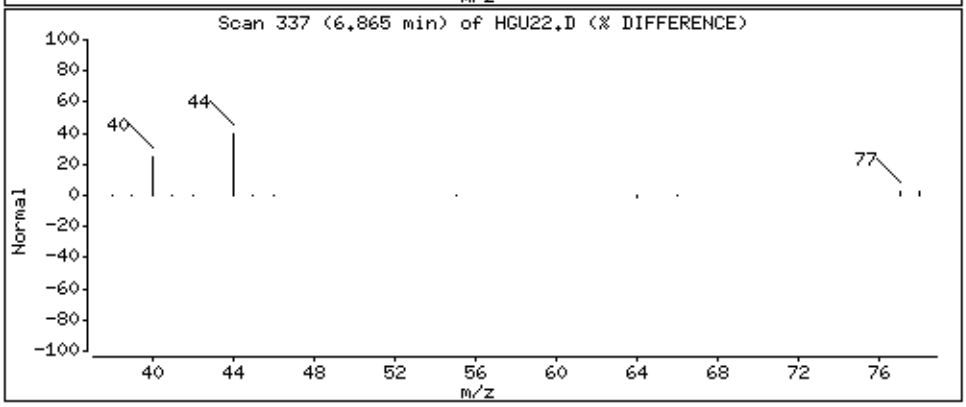
Column phase: RTX 624 | Column diameter: 0.25

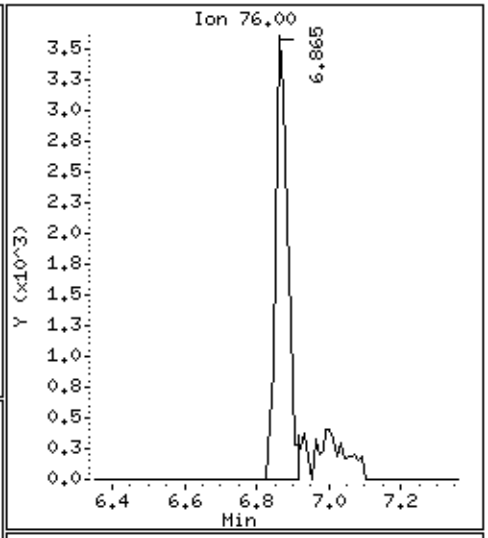
13 Carbon Disulfide | Concentration: 0.1688 UG/L

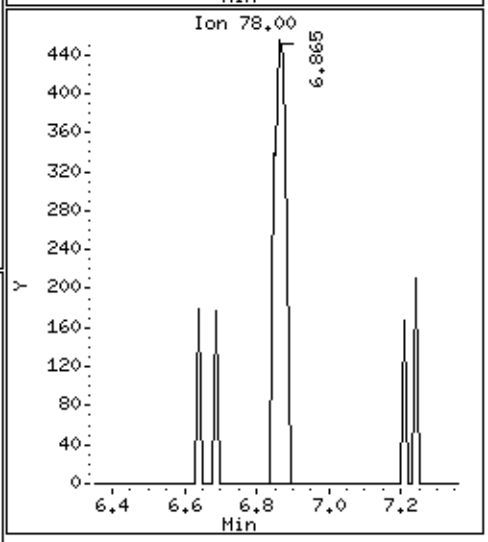












[Carbon Tetrachloride; 41; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

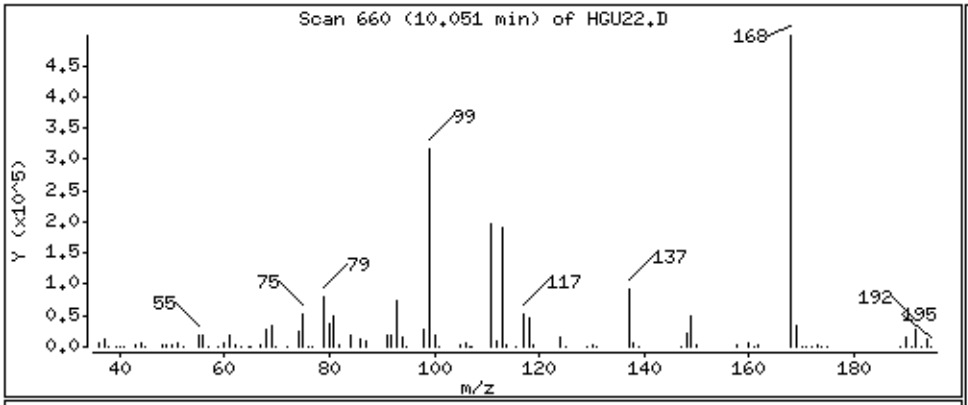
Client ID: DYNA P&T | Instrument: MSVOA08.i

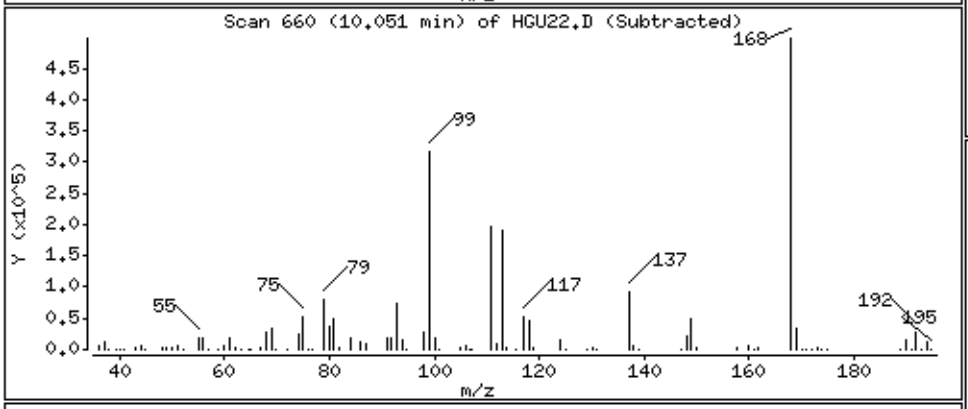
Sample Info: s,268557-001

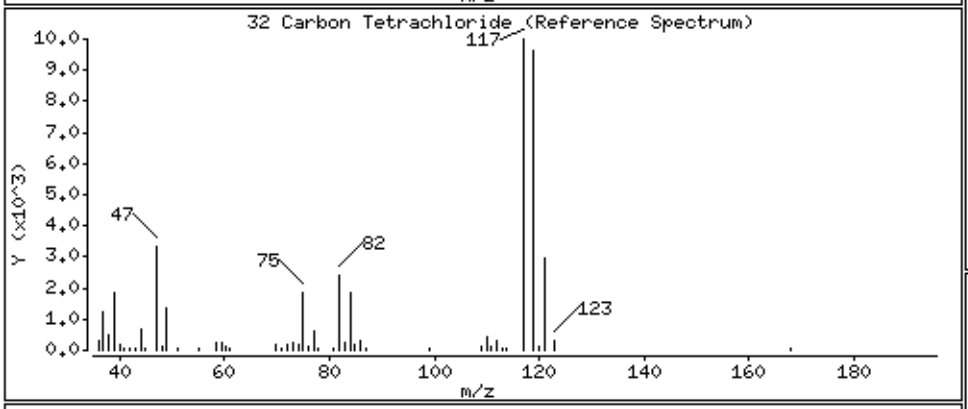
Purge Volume: 5.0 | Operator: VOC

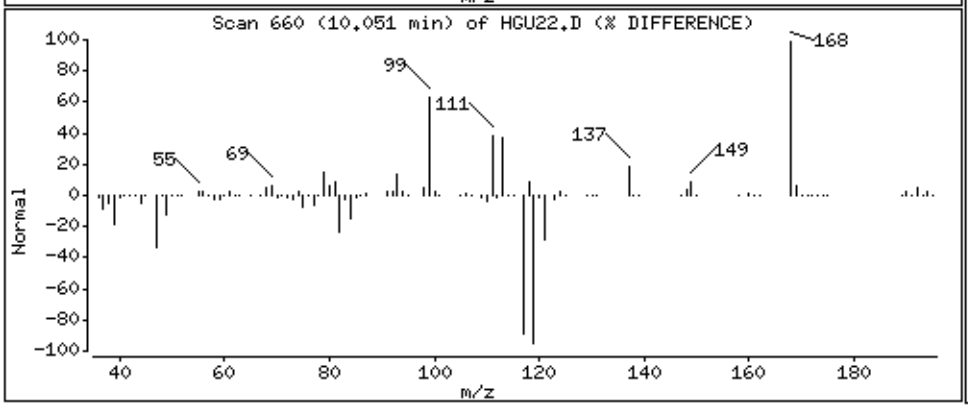
Column phase: RTX 624 | Column diameter: 0.25

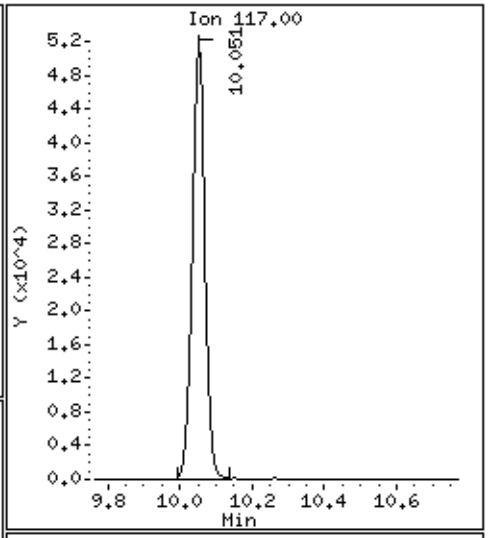
32 Carbon Tetrachloride | Concentration: 8.2600 UG/L

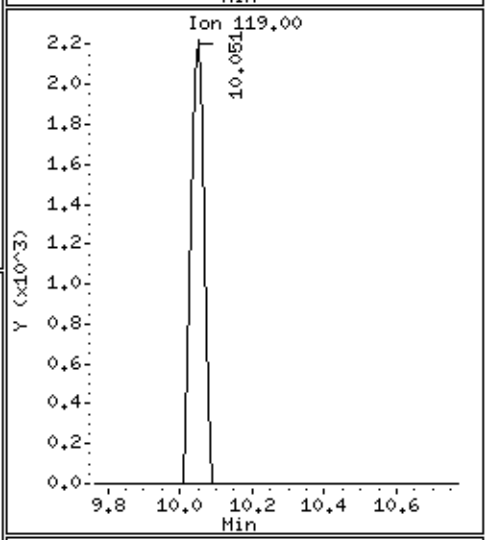


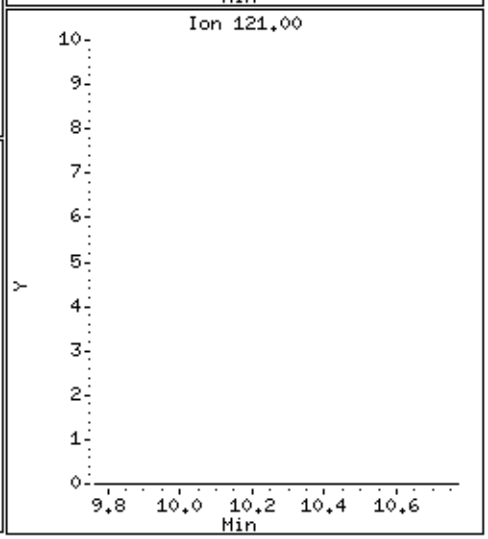












[1,1-Dichloropropene; 32; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

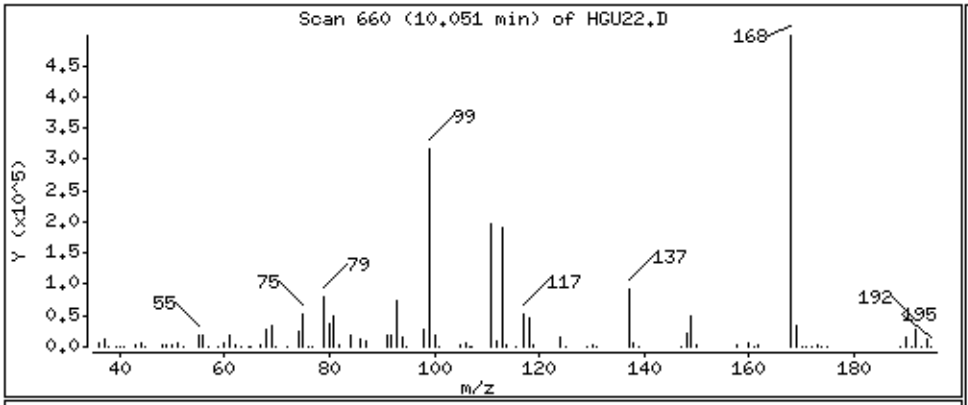
Client ID: DYNA P&T | Instrument: MSVOA08.i

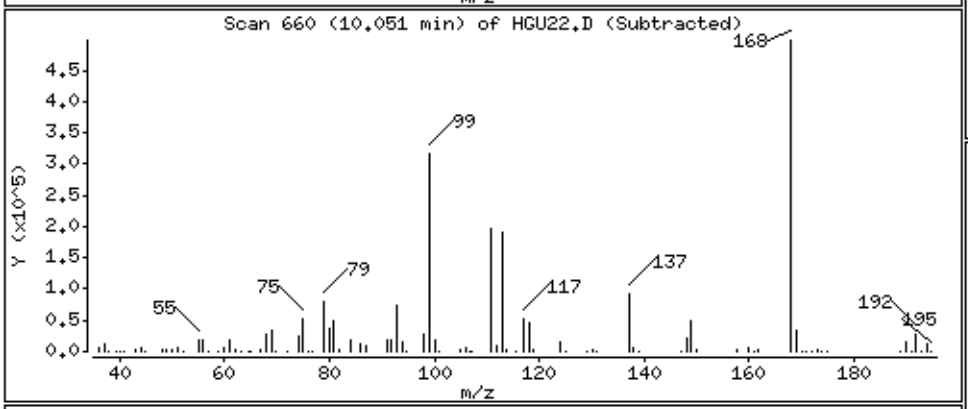
Sample Info: s,268557-001

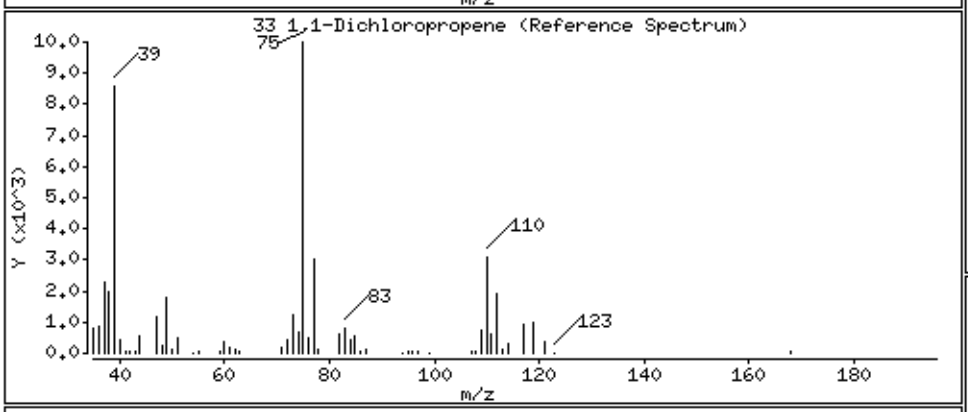
Purge Volume: 5.0 | Operator: VOC

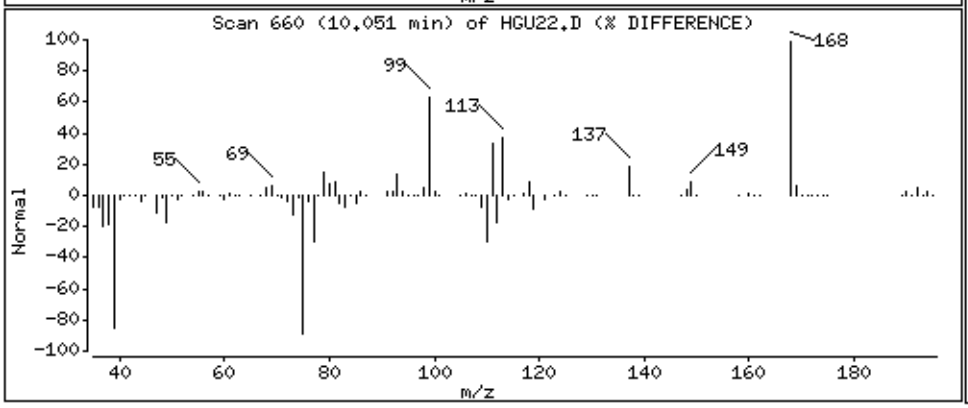
Column phase: RTX 624 | Column diameter: 0.25

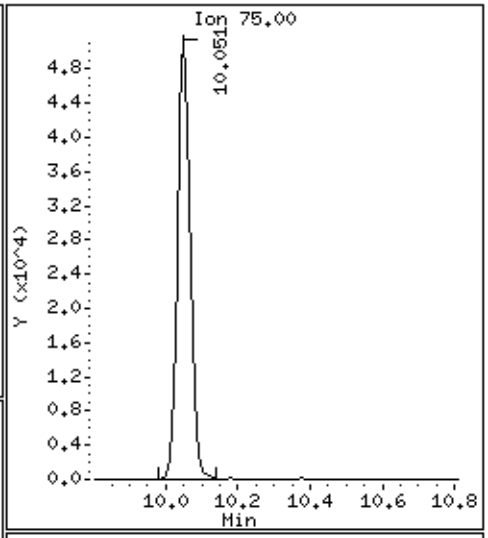
33 1,1-Dichloropropene | Concentration: 6.3372 UG/L

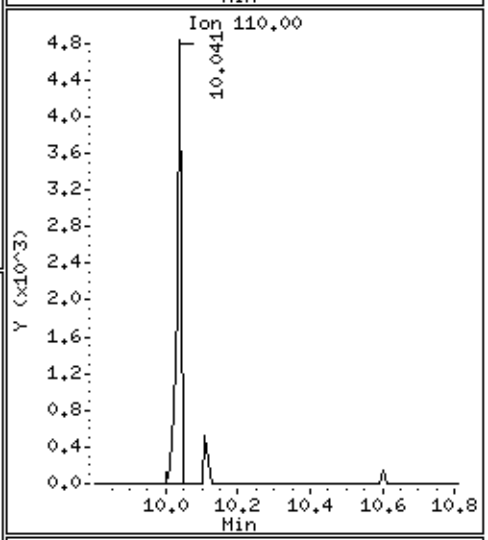


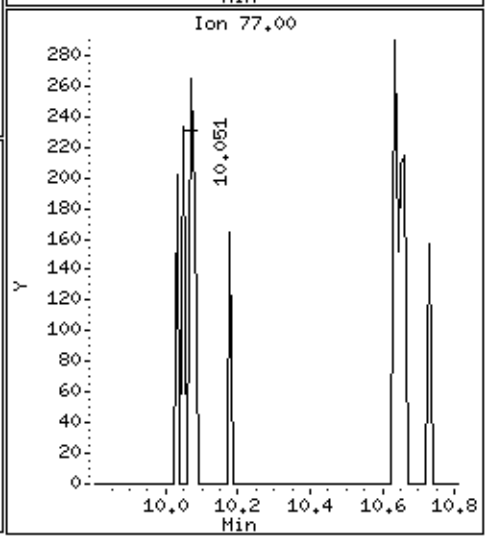












[Trichloroethene; 23; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

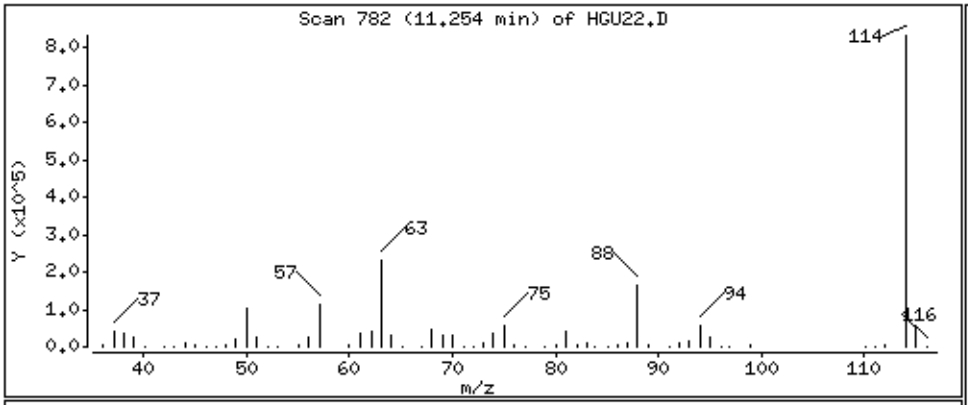
Client ID: DYNA P&T | Instrument: MSVOA08.i

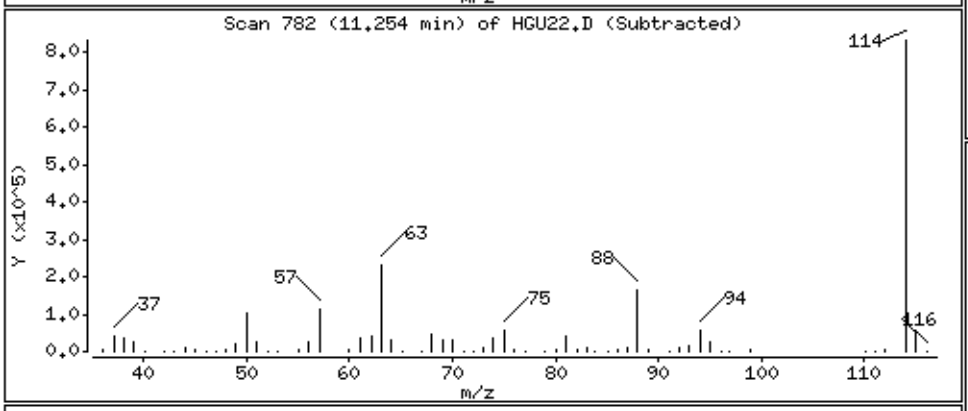
Sample Info: s,268557-001

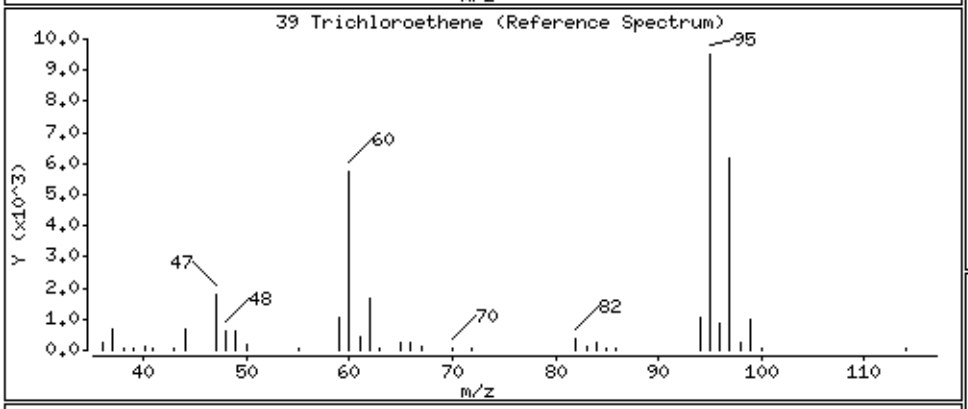
Purge Volume: 5.0 | Operator: VOC

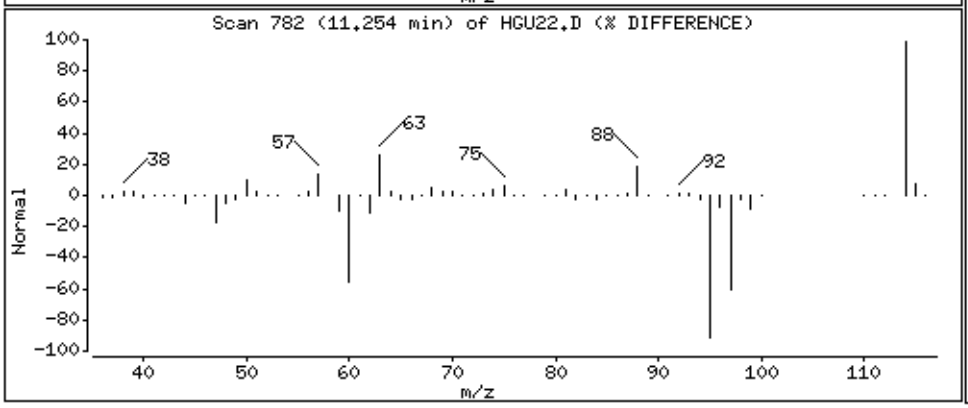
Column phase: RTX 624 | Column diameter: 0.25

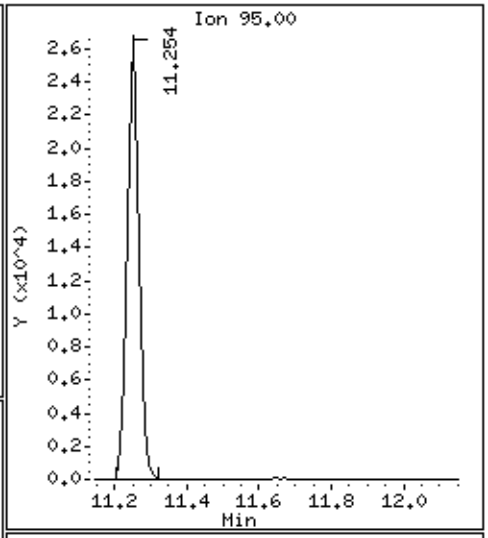
39 Trichloroethene | Concentration: 4.5176 UG/L

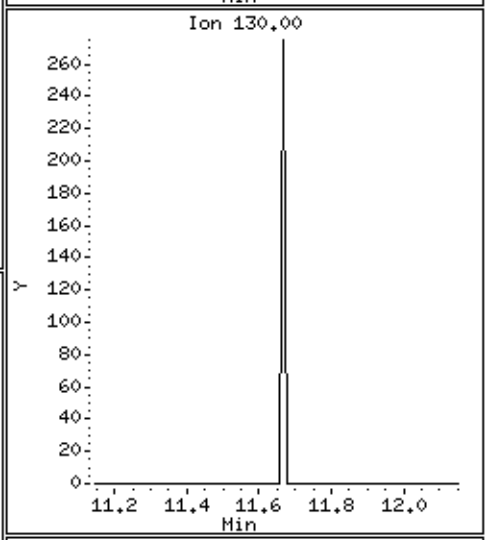


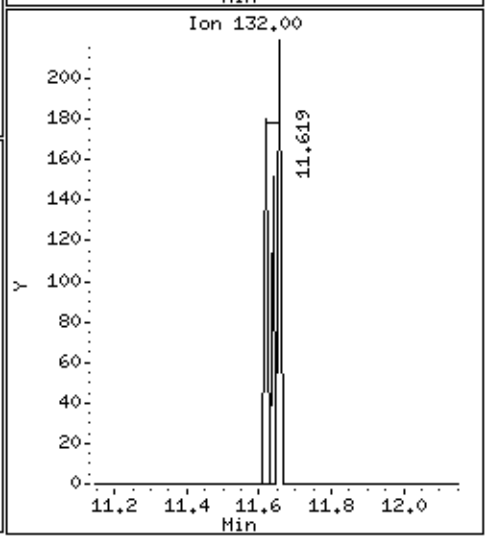












[4-Methyl-2-Pentanone; 7.0 J; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

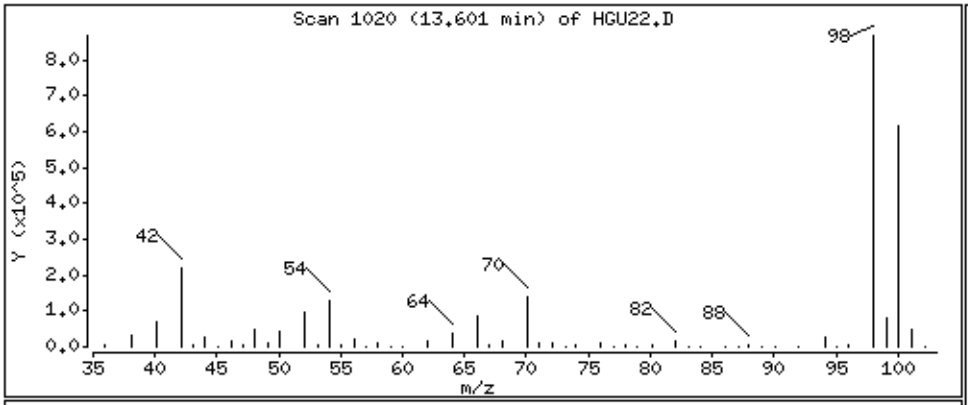
Client ID: DYNA P&T | Instrument: MSVOA08.i

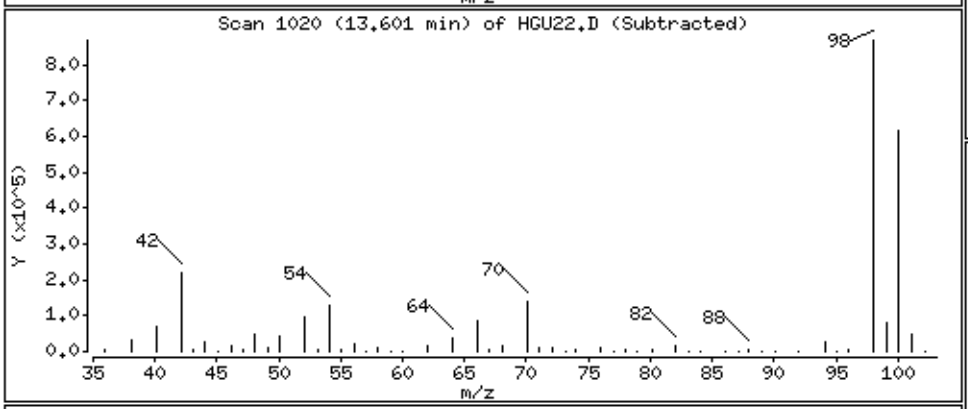
Sample Info: s,268557-001

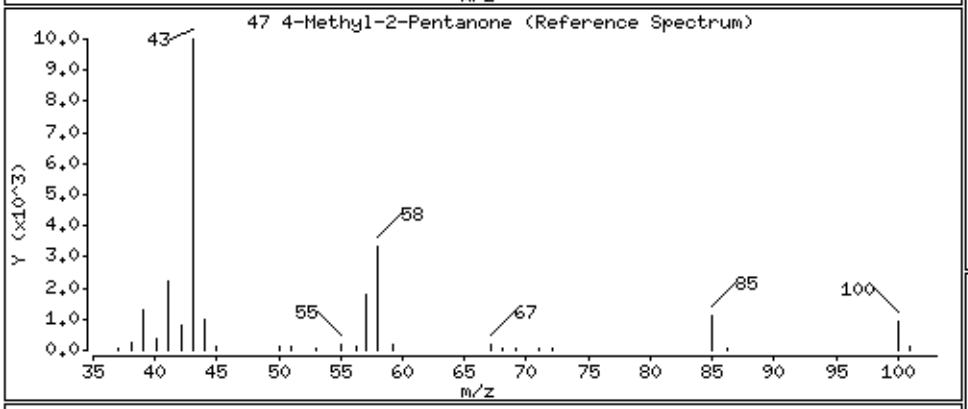
Purge Volume: 5.0 | Operator: VOC

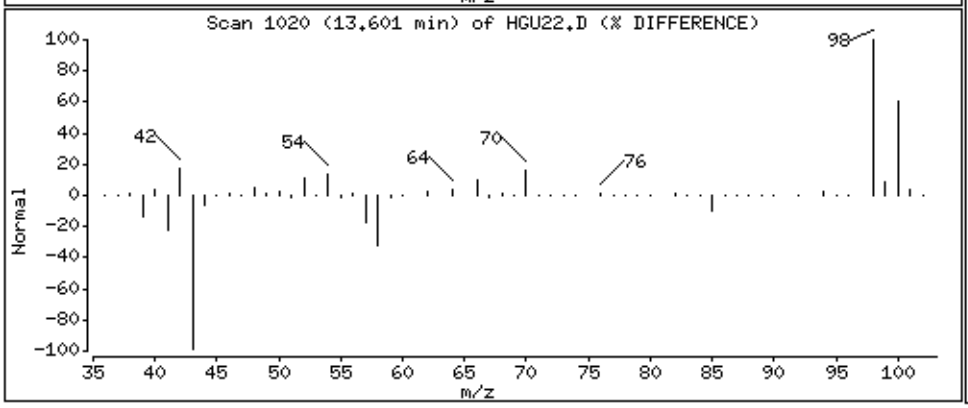
Column phase: RTX 624 | Column diameter: 0.25

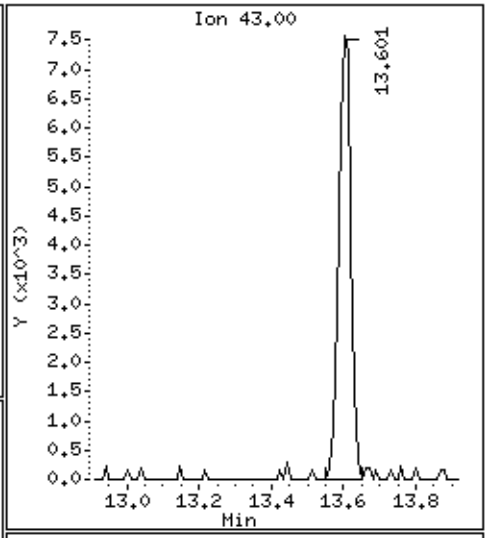
47 4-Methyl-2-Pentanone | Concentration: 1.4020 UG/L

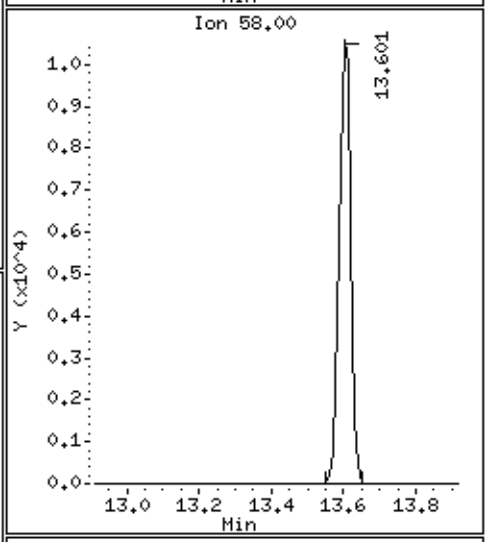


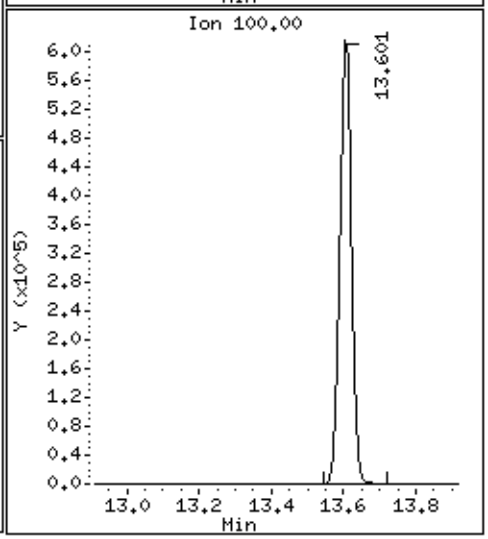












[Chlorobenzene; 11; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

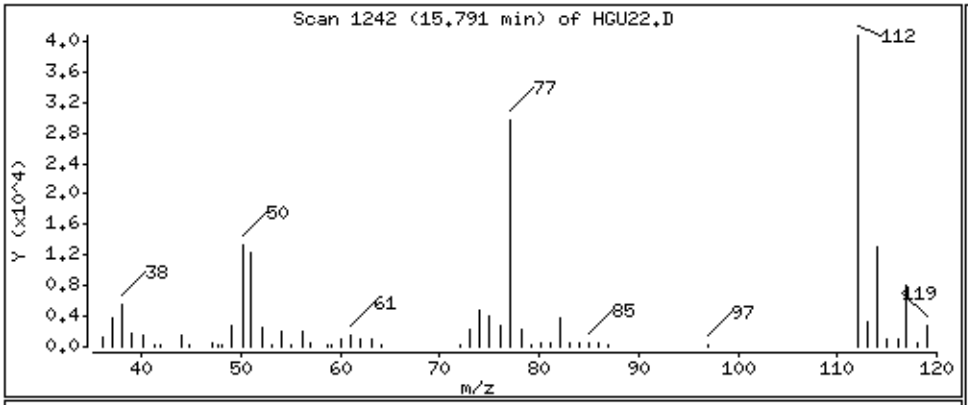
Client ID: DYNA P&T | Instrument: MSVOA08.i

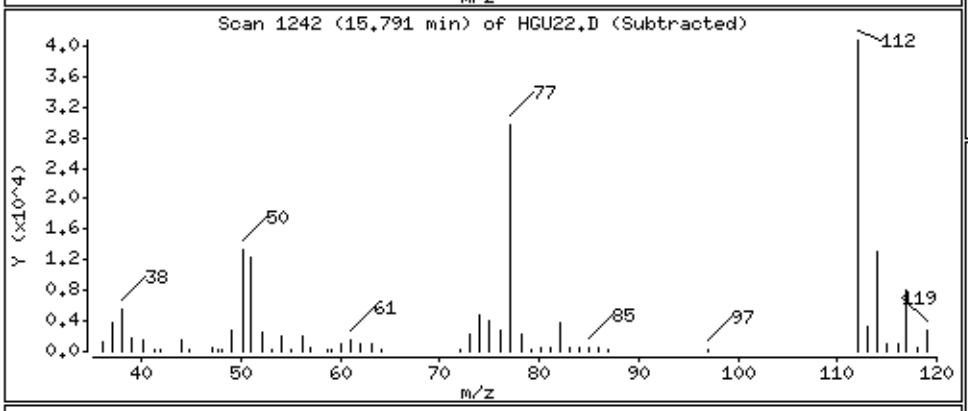
Sample Info: s,268557-001

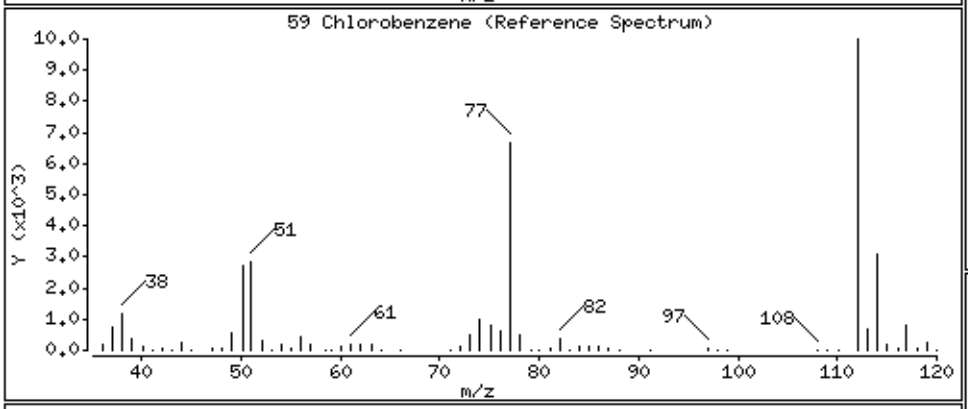
Purge Volume: 5.0 | Operator: VOC

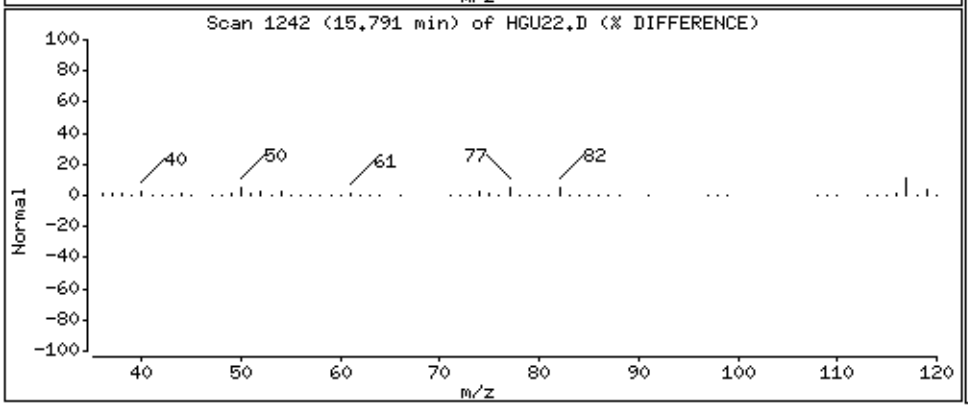
Column phase: RTX 624 | Column diameter: 0.25

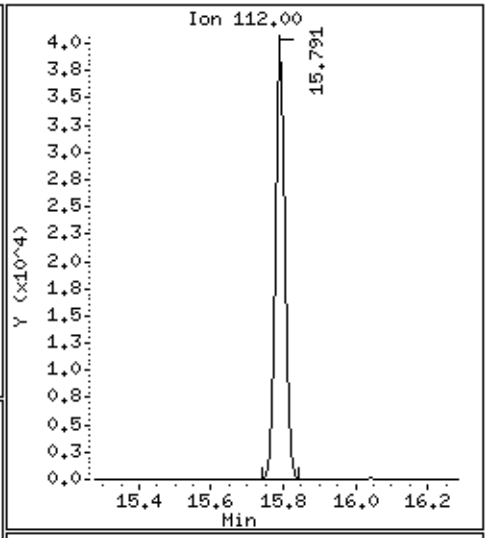
59 Chlorobenzene | Concentration: 2.1719 UG/L

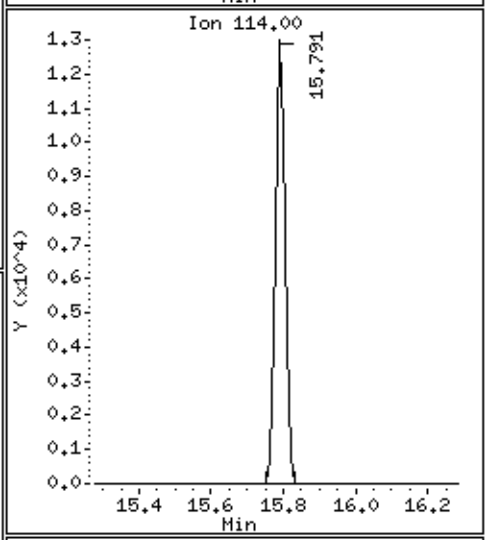


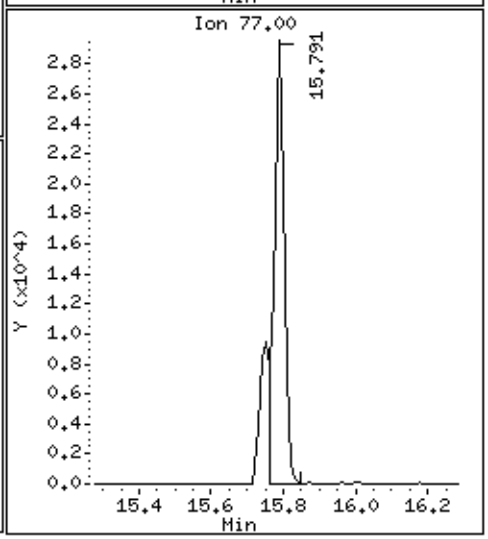












[1,2,3-Trichloropropane; 0.9 J; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

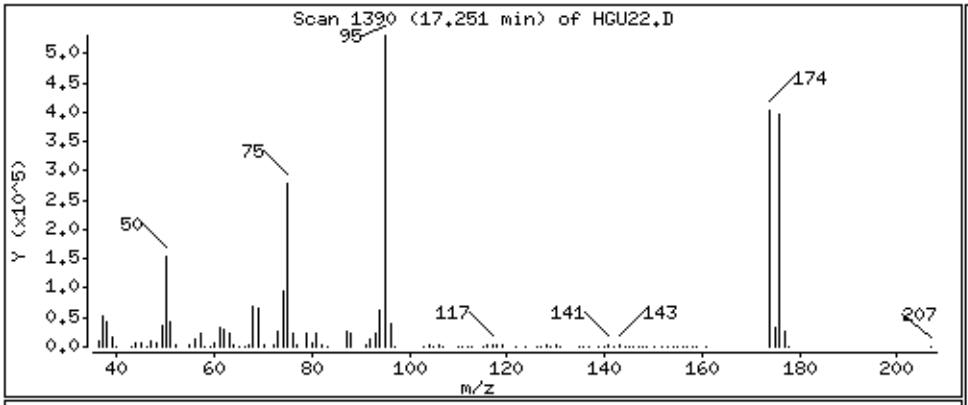
Client ID: DYNA P&T | Instrument: MSVOA08.i

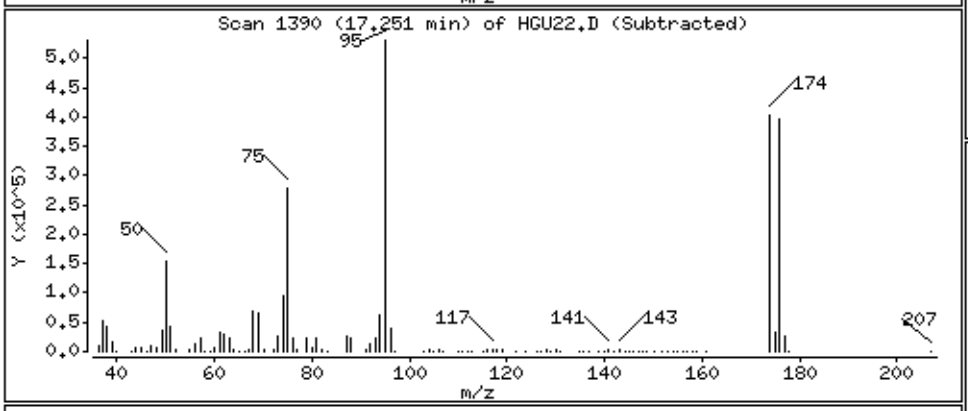
Sample Info: s,268557-001

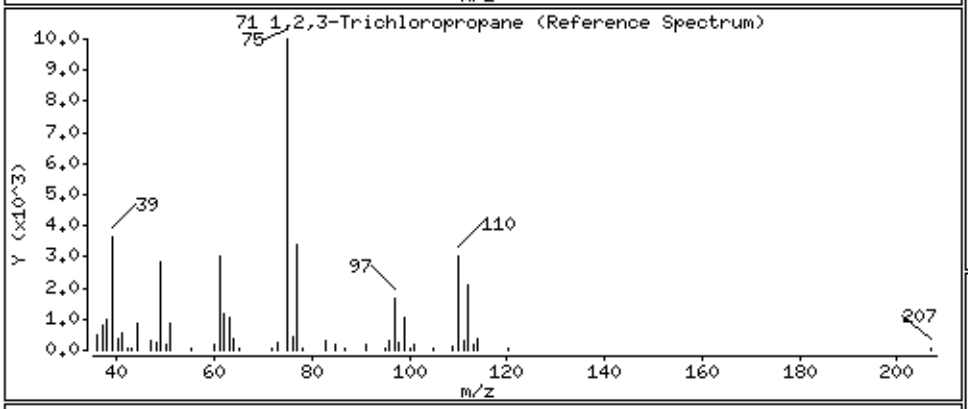
Purge Volume: 5.0 | Operator: VOC

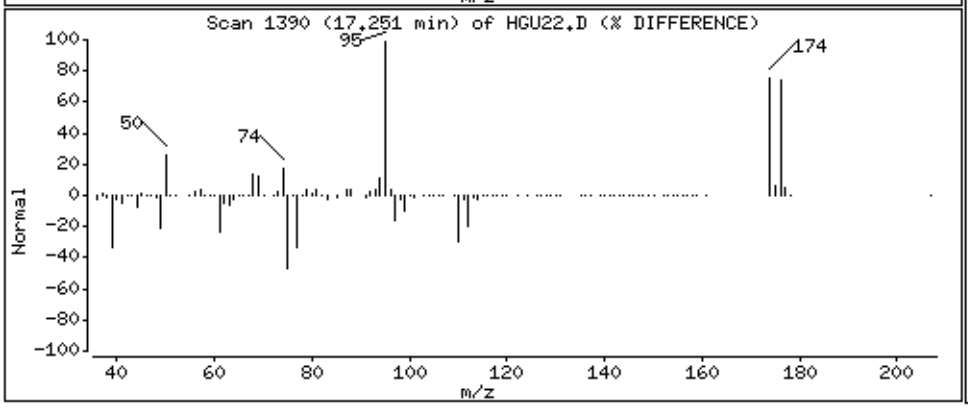
Column phase: RTX 624 | Column diameter: 0.25

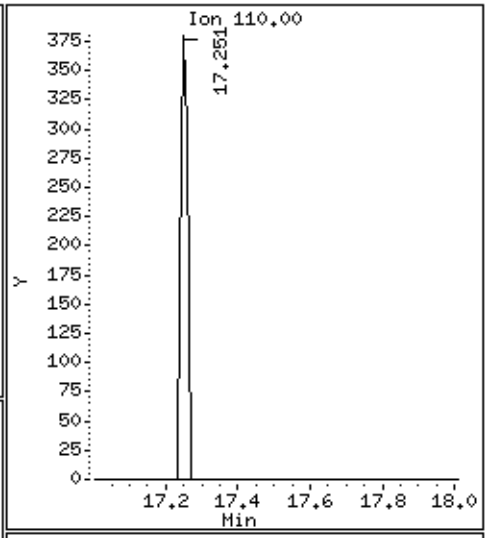
71 1,2,3-Trichloropropane | Concentration: 0.1706 UG/L

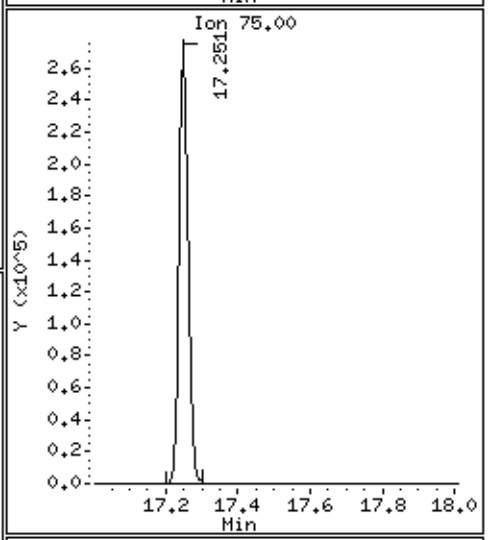


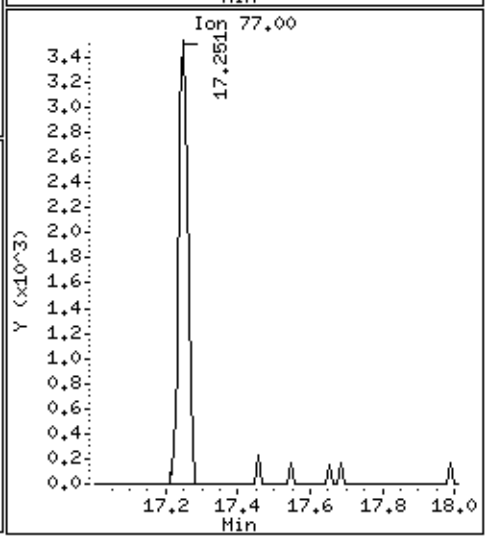












[1,3-Dichlorobenzene; 1.5 J; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

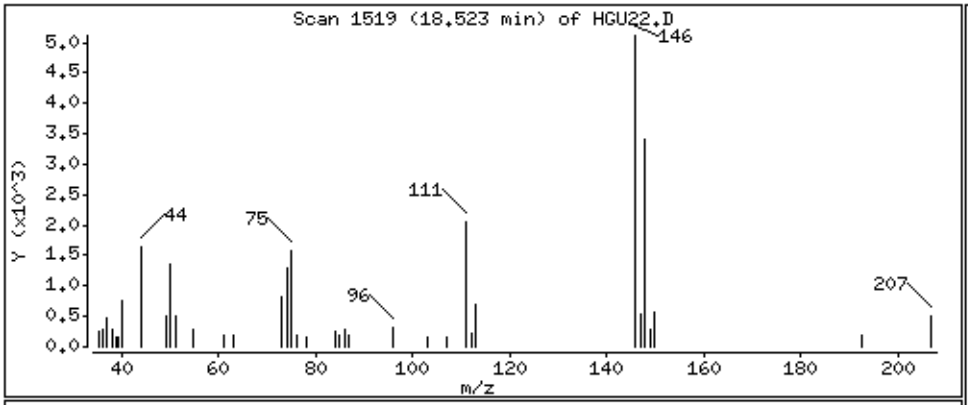
Client ID: DYNA P&T | Instrument: MSVOA08.i

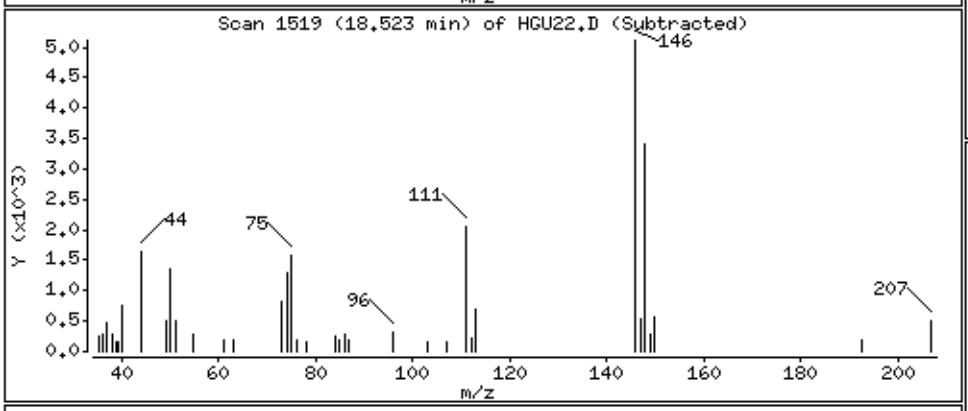
Sample Info: s,268557-001

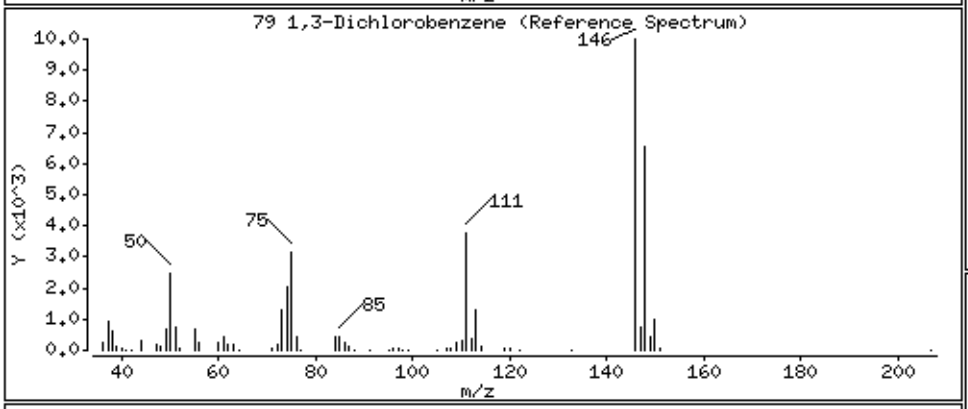
Purge Volume: 5.0 | Operator: VOC

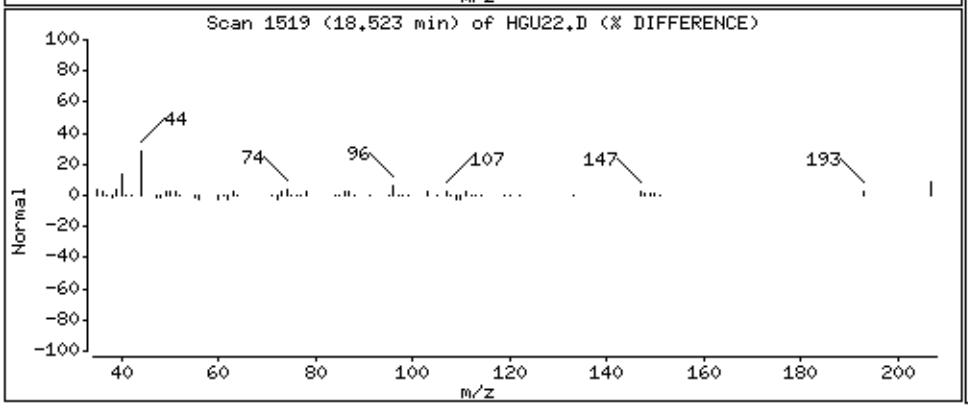
Column phase: RTX 624 | Column diameter: 0.25

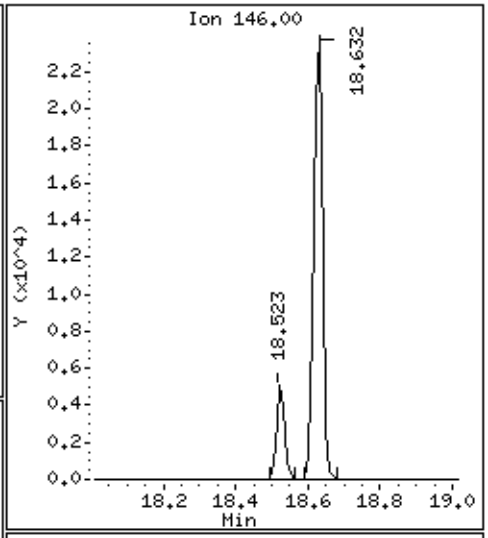
79 1,3-Dichlorobenzene | Concentration: 0.2915 UG/L

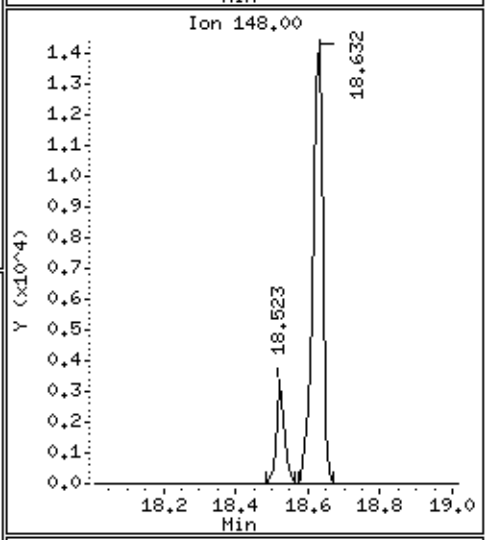


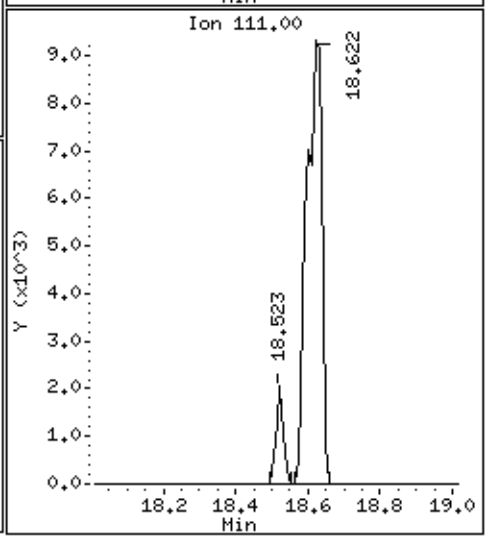












[1,4-Dichlorobenzene; 7.1; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

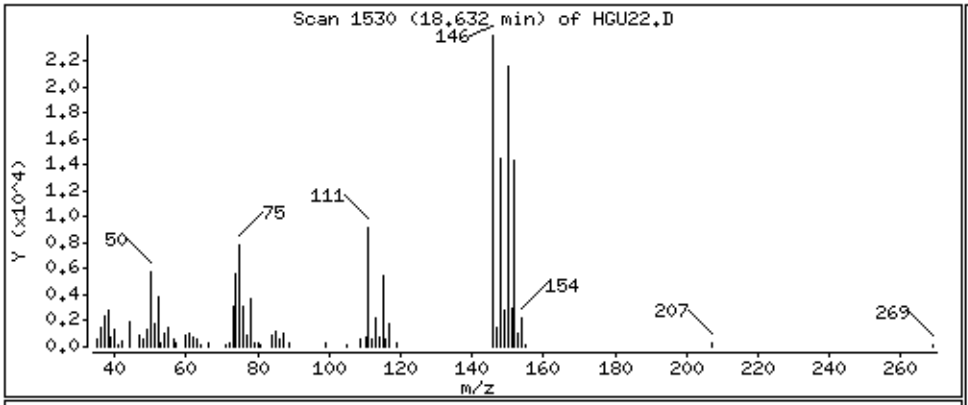
Client ID: DYNA P&T | Instrument: MSVOA08.i

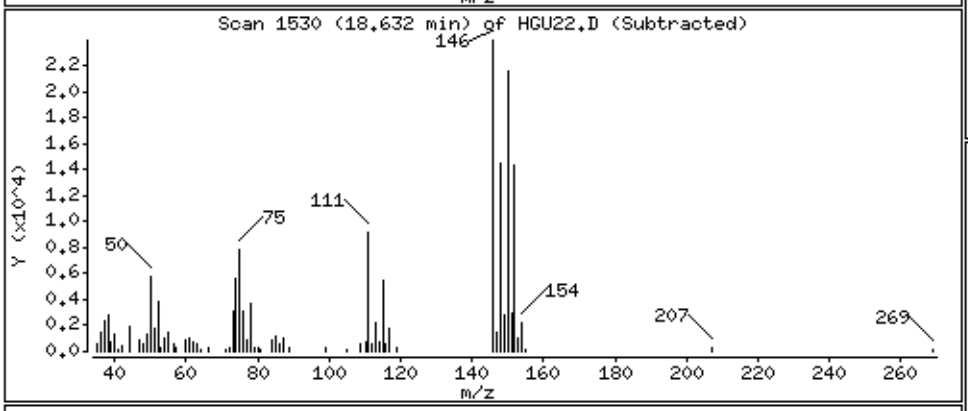
Sample Info: s,268557-001

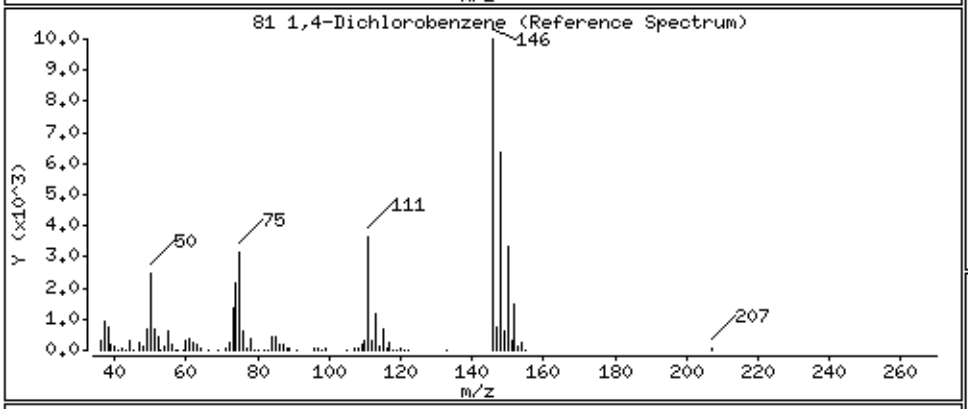
Purge Volume: 5.0 | Operator: VOC

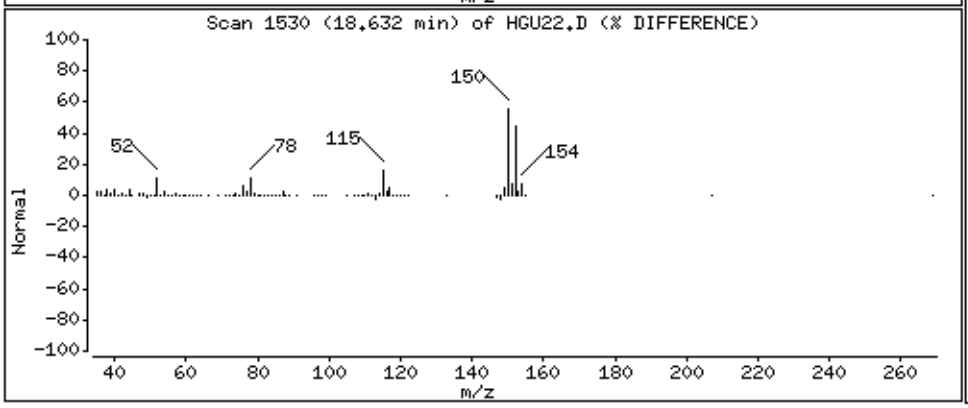
Column phase: RTX 624 | Column diameter: 0.25

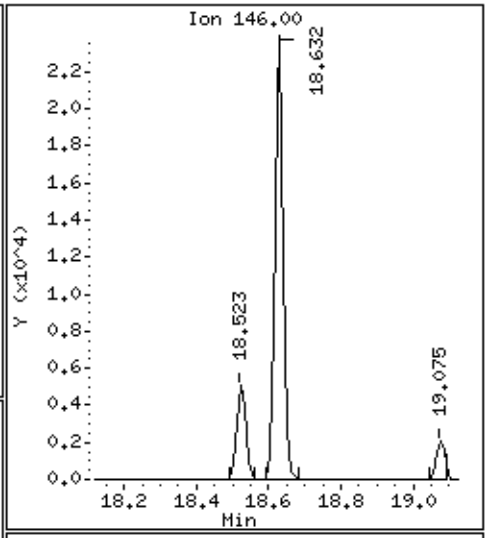
81 1,4-Dichlorobenzene | Concentration: 1.4279 UG/L

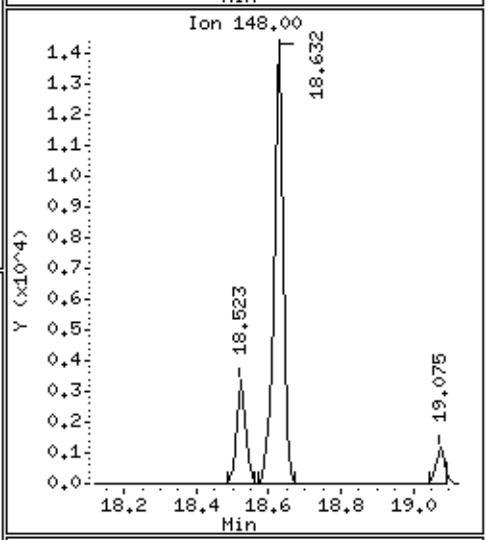


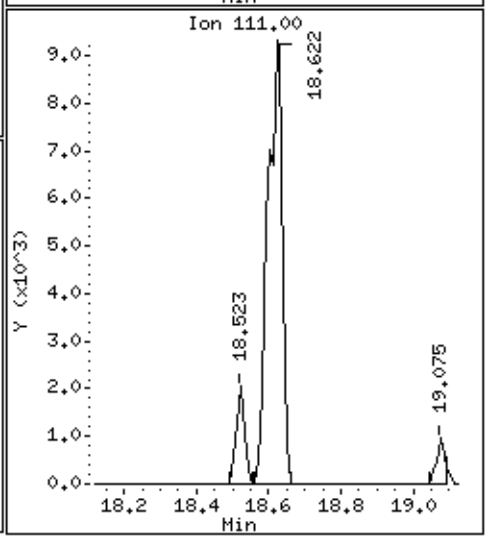












[1,2-Dichlorobenzene; 0.7 J; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU22.D

Date : 30-JUL-2015 20:10

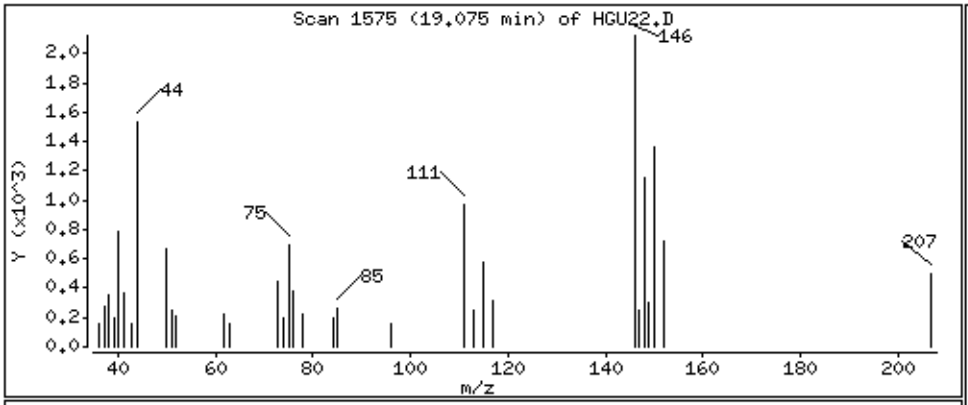
Client ID: DYNA P&T | Instrument: MSVOA08.i

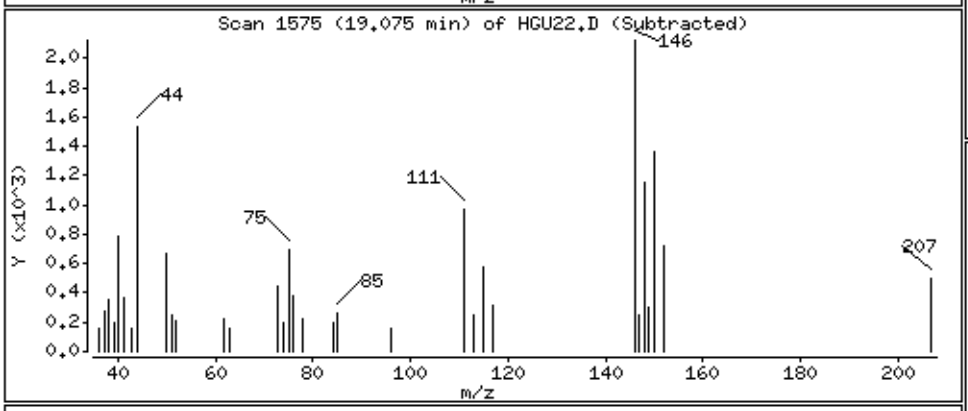
Sample Info: s,268557-001

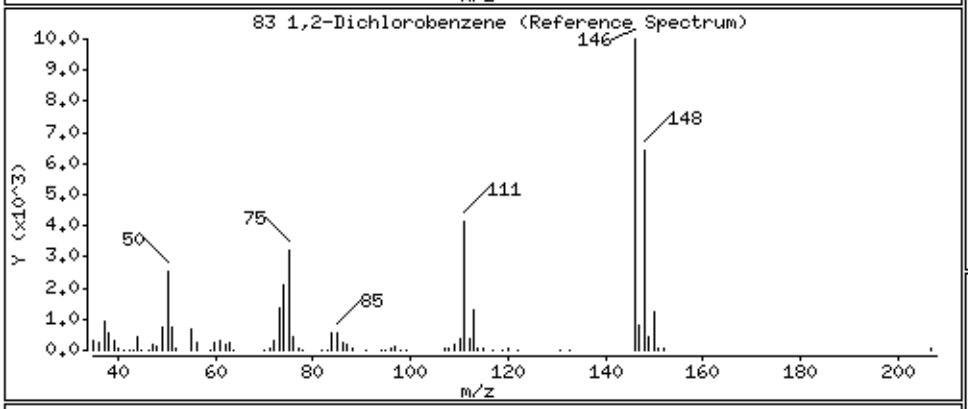
Purge Volume: 5.0 | Operator: VOC

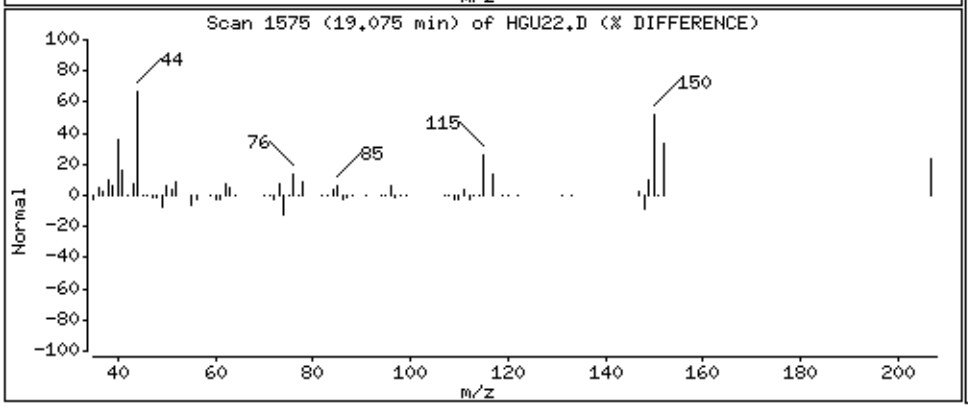
Column phase: RTX 624 | Column diameter: 0.25

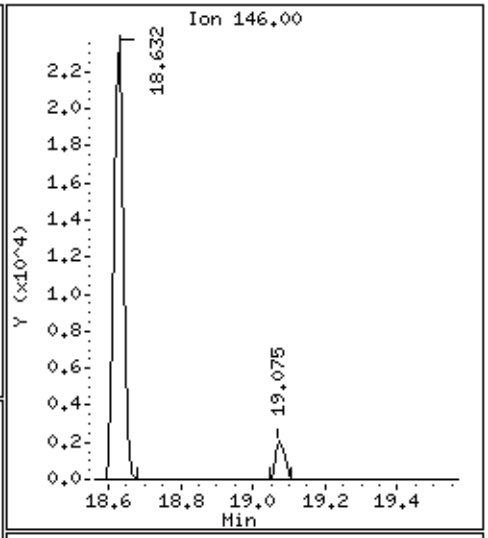
83 1,2-Dichlorobenzene | Concentration: 0.1337 UG/L

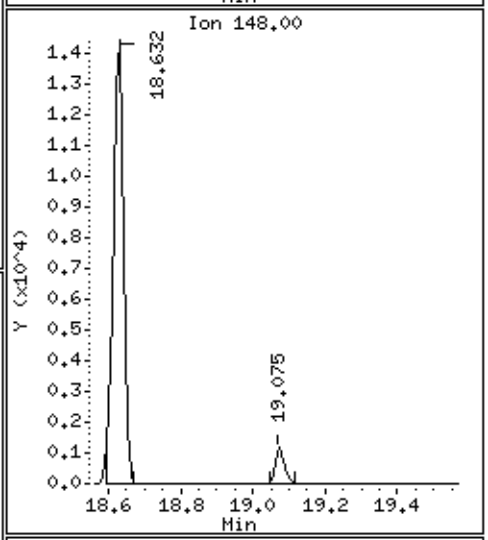


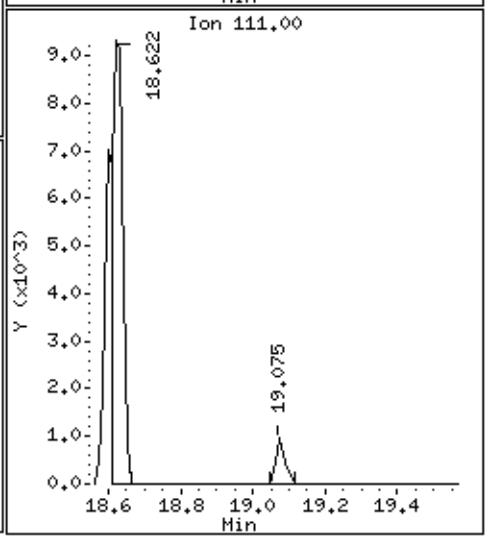












CURTIS & TOMPKINS SAMPLE USER REPORT FOR EPA 8260C

Inst	: MSVOA09	Lab ID	: 268557-001	Client ID	: DIC85W07-072815
Seqnum	: 485305964019	Matrix	: Water	Acct	: JMW (TLB)
File	: igv19	Batch	: 225691	Time	: 31-JUL-2015 21:35
Cal	: 485271359002	Caldate	: 07-JUL-2015	Caltype	: WATER
IDF	: 5.0	Raw Units	: ug/L	Units	: ug/L

Analyte	Raw	Result	RTS	RL	Blank	Flags
Freon 12	0	ND		5.0		v-
Chloromethane	0	ND		5.0		
Vinyl Chloride	0.03050	ND		2.5		
Bromomethane	0	ND		5.0		
Chloroethane	0	ND		5.0		
Trichlorofluoromethane	0	ND		5.0		
Acetone	0.5045	ND		50		
Freon 113	0	ND		10		u
1,1-Dichloroethene	0	ND		2.5		
Methylene Chloride	0	ND		50		
Carbon Disulfide	0.05170	ND		2.5		u
MTBE	0	ND		2.5		
trans-1,2-Dichloroethene	0.08500	ND		2.5		
Vinyl Acetate	0	ND		50		c+
1,1-Dichloroethane	0	ND		2.5		
2-Butanone	0	ND		50		
cis-1,2-Dichloroethene	0.1001	0.5 J		2.5		
2,2-Dichloropropane	0	ND		2.5		
Chloroform	0	ND		2.5		
Bromochloromethane	0	ND		2.5		
1,1,1-Trichloroethane	0	ND		2.5		
1,1-Dichloropropene	7.220	36	-0.234	2.5		x
Carbon Tetrachloride	7.641	38	-0.195	2.5		x
1,2-Dichloroethane	0	ND		2.5		
Benzene	0.05190	ND		2.5		
Trichloroethene	5.078	25	-0.402	2.5		x
1,2-Dichloropropane	0	ND		2.5		
Bromodichloromethane	0	ND		2.5		
Dibromomethane	0	ND		2.5		
4-Methyl-2-Pentanone	2.228	11 J	0.199	50		x
cis-1,3-Dichloropropene	0	ND		2.5		
Toluene	0	ND		2.5		
trans-1,3-Dichloropropene	0	ND		2.5		
1,1,2-Trichloroethane	0	ND		2.5		
2-Hexanone	0	ND		50		
1,3-Dichloropropane	0	ND		2.5		
Tetrachloroethene	0	ND		2.5		c- **b***
Dibromochloromethane	0	ND		2.5		
1,2-Dibromoethane	0	ND		2.5		
Chlorobenzene	1.893	9.5		2.5		
1,1,1,2-Tetrachloroethane	0	ND		2.5		
Ethylbenzene	0.08250	ND		2.5		
m,p-Xylenes	0	ND		2.5		
o-Xylene	0	ND		2.5		
Styrene	0	ND		2.5		
Bromoform	0	ND		5.0		
Isopropylbenzene	0.04330	ND		2.5		
1,1,2,2-Tetrachloroethane	0.06310	ND		2.5		
1,2,3-Trichloropropane	0.2236	1.1 J	-0.195	2.5		x

Analyte	Raw	Result	RTS	RL	Blank	Flags
Propylbenzene	0.08490	ND		2.5		
Bromobenzene	0	ND		2.5		
1,3,5-Trimethylbenzene	0.05460	ND		2.5		
2-Chlorotoluene	0.1250	0.6 J	-0.323	2.5		x
4-Chlorotoluene	0.1362	ND		2.5		
tert-Butylbenzene	0	ND		2.5		c- **b***
1,2,4-Trimethylbenzene	0	ND		2.5		
sec-Butylbenzene	0	ND		2.5		c- **b***
para-Isopropyl Toluene	0	ND		2.5		c- **b***
1,3-Dichlorobenzene	0.2060	1.0 J		2.5		
1,4-Dichlorobenzene	1.109	5.5		2.5		
n-Butylbenzene	0.09080	ND		2.5		c- **b***
1,2-Dichlorobenzene	0.1056	0.5 J		2.5		
1,2-Dibromo-3-Chloropropane	0	ND		10		
1,2,4-Trichlorobenzene	0	ND		2.5		c- **b***
Hexachlorobutadiene	0	ND		10		c- **b***
Naphthalene	0	ND		10		c- **b***
1,2,3-Trichlorobenzene	0	ND		2.5		c- **b***

Surrogate	Raw	Spiked	Result	%Rec	Limits	Flags
Dibromofluoromethane	57.46	250.0	287.3	115	85-115	
1,2-Dichloroethane-d4	56.73	250.0	283.6	113	70-120	
Toluene-d8	50.25	250.0	251.3	101	85-120	
Bromofluorobenzene	53.81	250.0	269.0	108	75-120	

ISTD (ICAL ig713)	ICAL Area	SAMPLE Area	%Drift	ICAL RT	SAMPLE RT	Drift
Pentafluorobenzene	987439	1031442	4.46	11.04	11.03	-0.01
1,4-Difluorobenzene	1506110	1797054	19.32	12.30	12.29	-0.01
Chlorobenzene-d5	1326780	1696769	27.89	16.67	16.65	-0.02
1,4-Dichlorobenzene-d4	740445	781778	5.58	19.10	19.10	0.00

07/31/15 : Was diluted due to foaming.

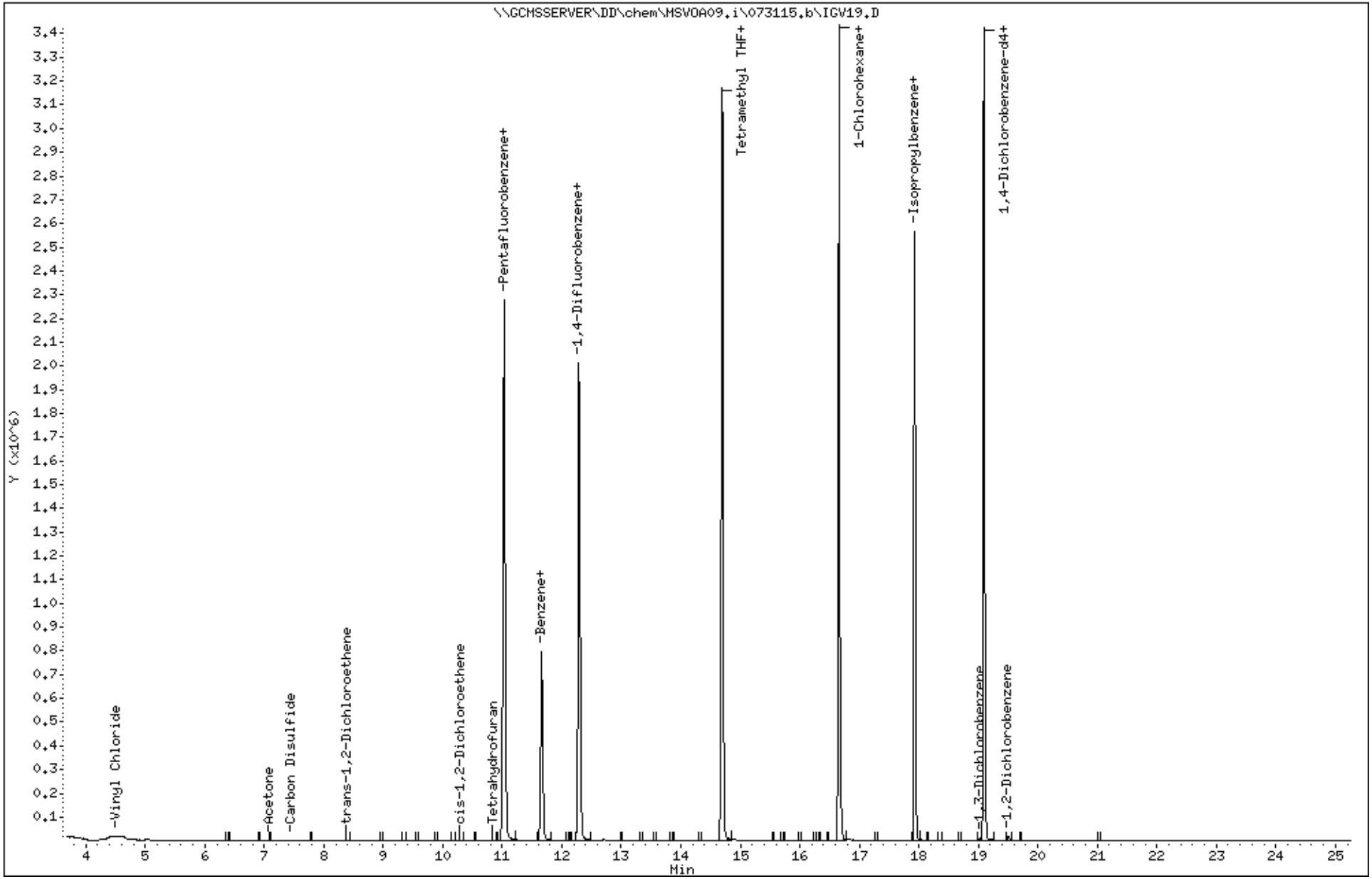
(not in upper half)

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV x=false positive

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D
Date : 31-JUL-2015 21:35
Client ID: DYNA P&T
Sample Info: s,268557-001
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D
Report Date: 31-Jul-2015 21:54

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 31-JUL-2015 21:35 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : s,268557-001
Misc Info : 225691,10/50//foamer
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\826GOX9W.m
Meth Date : 09-Jul-2015 11:11 Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 19
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
3 Vinyl Chloride	62	4.502	4.504	(0.408)	508	0.03047	0.0304(a)
10 Acetone	43	7.193	7.165	(0.652)	1110	0.50450	0.5044
13 Carbon Disulfide	76	7.449	7.451	(0.676)	1804	0.05169	0.0516(a)
17 trans-1,2-Dichloroethene	96	8.405	8.407	(0.762)	801	0.08496	0.0849(a)
24 cis-1,2-Dichloroethene	96	10.238	10.240	(0.928)	1045	0.10006	0.1000(a)
26 Tetrahydrofuran	42	10.740	10.654	(0.974)	150	0.08525	0.0852(a)
* 29 Pentafluorobenzene	168	11.026	11.038	(1.000)	1031442	50.0000	
30 Dibromofluoromethane	113	11.036	11.038	(1.001)	777500	57.4578	57.4577
32 Carbon Tetrachloride	117	11.026	11.255	(0.897)	112611	7.64102	7.6410
33 1,1-Dichloropropene	75	11.026	11.294	(0.897)	116177	7.22015	7.2201
34 Benzene	78	11.647	11.649	(0.948)	2187	0.05194	0.0519(a)
35 1,2-Dichloroethane-d4	65	11.657	11.669	(0.949)	741455	56.7272	56.7271
* 38 1,4-Difluorobenzene	114	12.288	12.300	(1.000)	1797054	50.0000	
39 Trichloroethene	95	12.288	12.723	(1.000)	56467	5.07751	5.0775
45 Tetramethyl THF	43	14.692	14.281	(1.196)	18503	0.75130	0.7513
47 4-Methyl-2-Pentanone	43	14.692	14.517	(1.196)	18677	2.22799	2.2279

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D
Report Date: 31-Jul-2015 21:54

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
48 Toluene-d8	98	14.692	14.704	(0.882)	2348483	50.2500	50.2499
57 1-Chlorohexane	91	16.663	16.567	(1.001)	4026	0.30222	0.3022(a)
* 58 Chlorobenzene-d5	117	16.654	16.665	(1.000)	1696769	50.0000	
59 Chlorobenzene	112	16.693	16.695	(1.002)	52739	1.89271	1.8927
60 Ethylbenzene	91	16.663	16.744	(1.001)	4026	0.08255	0.0825(a)
66 Isopropylbenzene	105	17.935	17.690	(0.939)	1658	0.04325	0.0432(a)
67 Cyclohexanone_	55	17.925	17.937	(0.939)	3645	3.03916	3.0391
68 Bromofluorobenzene	95	17.925	17.937	(0.939)	831222	53.8094	53.8093
69 1,1,2,2-Tetrachloroethane	83	17.935	18.075	(0.939)	482	0.06311	0.0631(a)
70 Propylbenzene	91	17.925	18.104	(0.939)	3951	0.08492	0.0849(a)
72 1,2,3-Trichloropropane	110	17.935	18.154	(0.939)	399	0.22356	0.2235(a)
73 2-Chlorotoluene	91	17.925	18.262	(0.939)	3951	0.12497	0.1249(a)
74 1,3,5-Trimethylbenzene	105	17.935	18.272	(0.939)	1658	0.05459	0.0545(a)
75 4-Chlorotoluene	91	17.925	18.370	(0.939)	3951	0.13623	0.1362(a)
80 1,3-Dichlorobenzene	146	19.029	19.031	(0.996)	3486	0.20601	0.2060(a)
* 81 1,4-Dichlorobenzene-d4	152	19.098	19.100	(1.000)	781778	50.0000	
82 1,4-Dichlorobenzene	146	19.117	19.129	(1.001)	19529	1.10882	1.1088
83 n-Butylbenzene	91	19.098	19.356	(1.000)	2505	0.09081	0.0908(a)
84 1,2-Dichlorobenzene	146	19.531	19.533	(1.023)	1622	0.10562	0.1056(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

[cis-1,2-Dichloroethene; 0.5 J]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

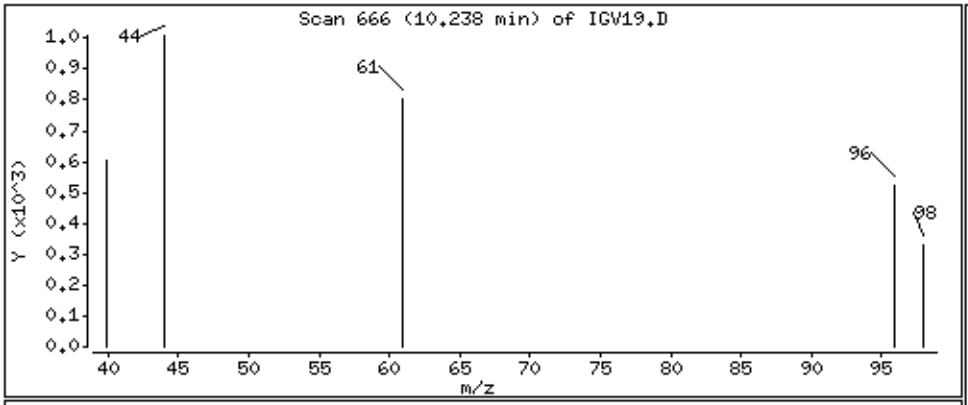
Client ID: DYNA P&T | Instrument: MSVOA09.i

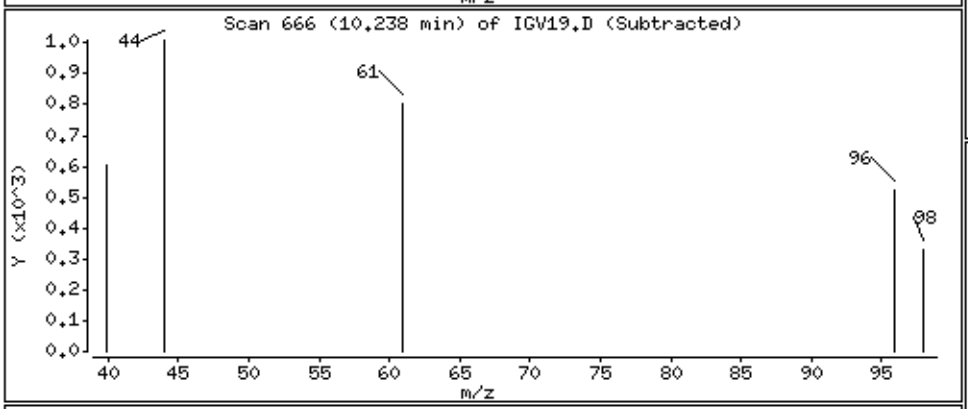
Sample Info: s,268557-001

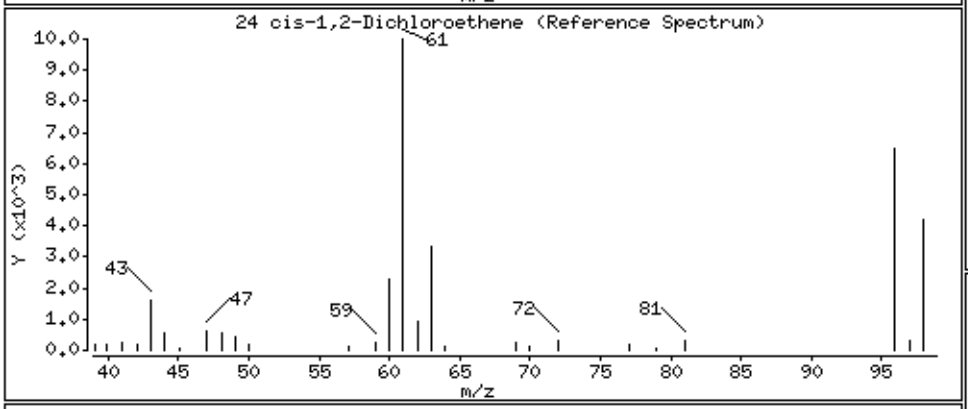
Purge Volume: 5.0 | Operator: VOC

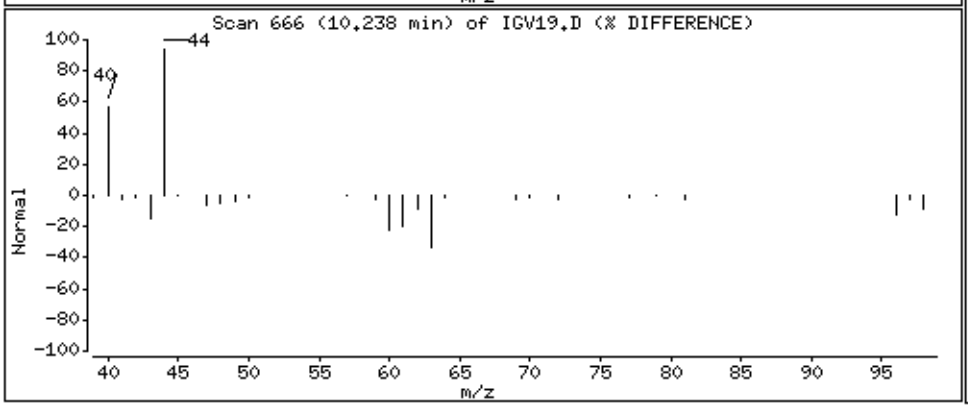
Column phase: RTx Volatiles | Column diameter: 0.25

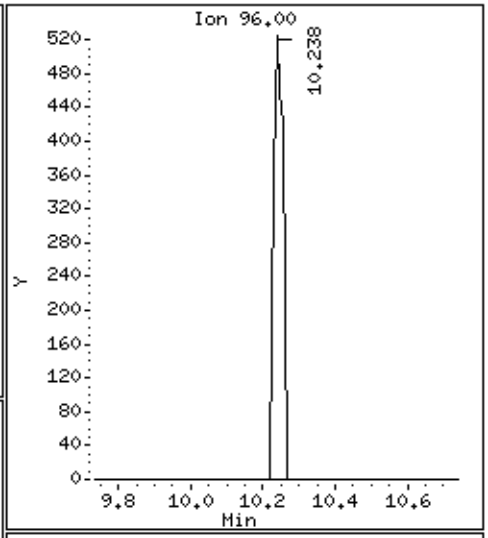
24 cis-1,2-Dichloroethene | Concentration: 0.1000 UG/L

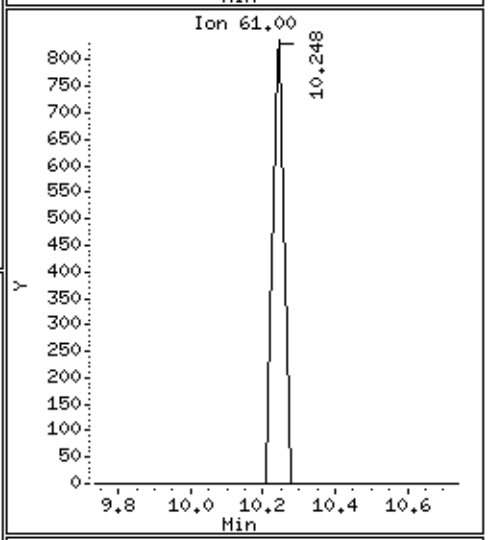


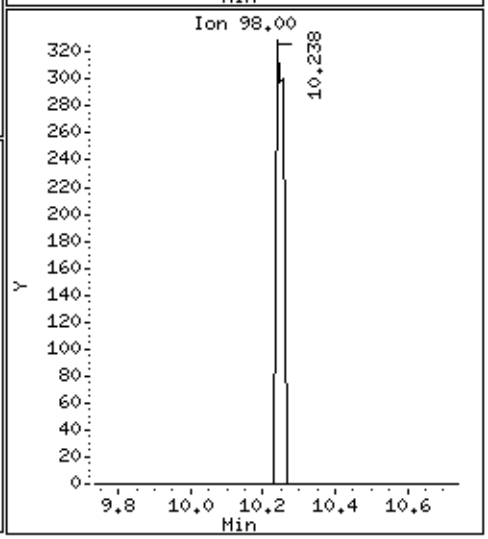












[Carbon Tetrachloride; 38; FP]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

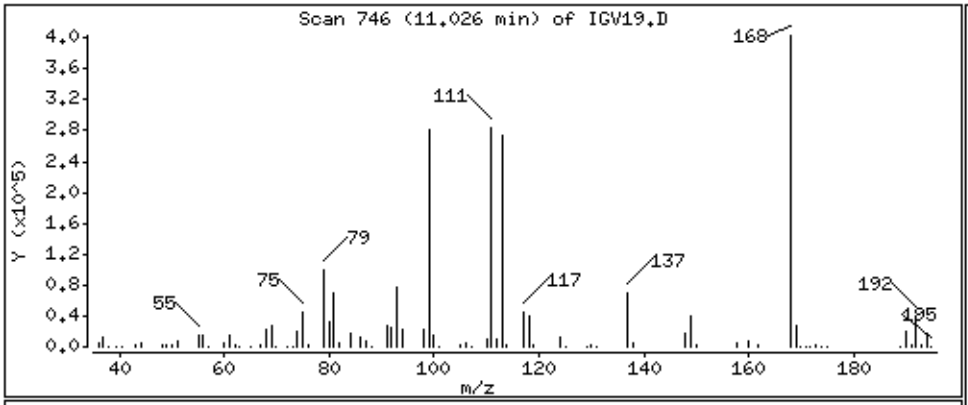
Client ID: DYNA P&T | Instrument: MSVOA09.i

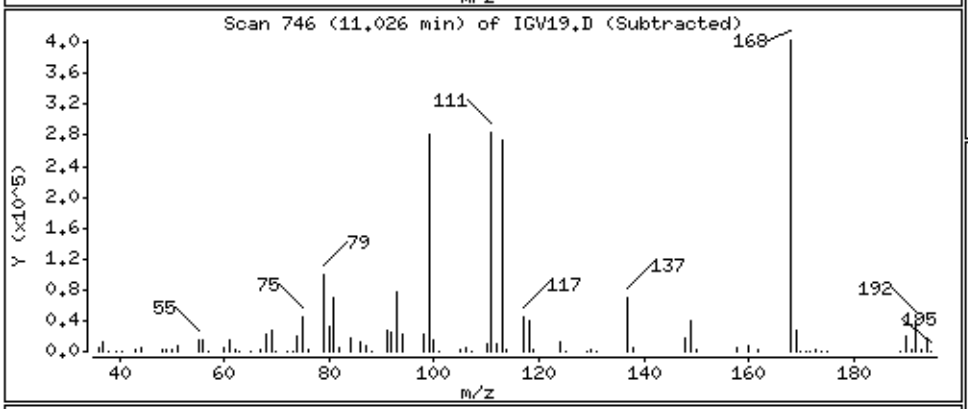
Sample Info: s,268557-001

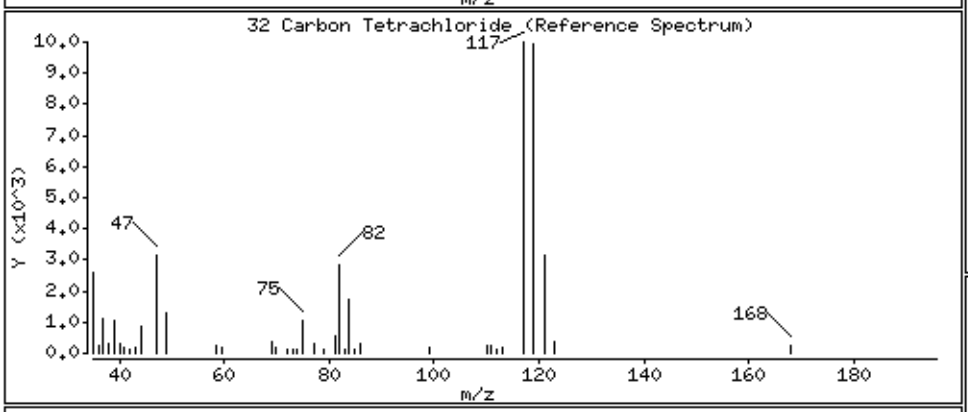
Purge Volume: 5.0 | Operator: VOC

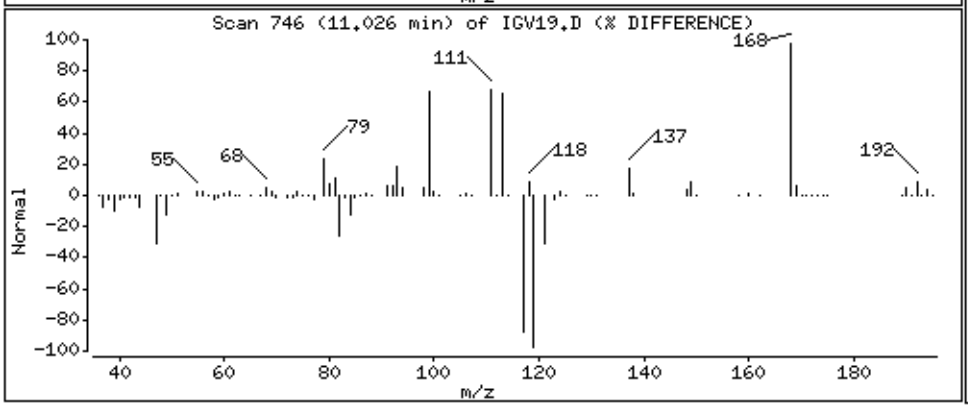
Column phase: RTx Volatiles | Column diameter: 0.25

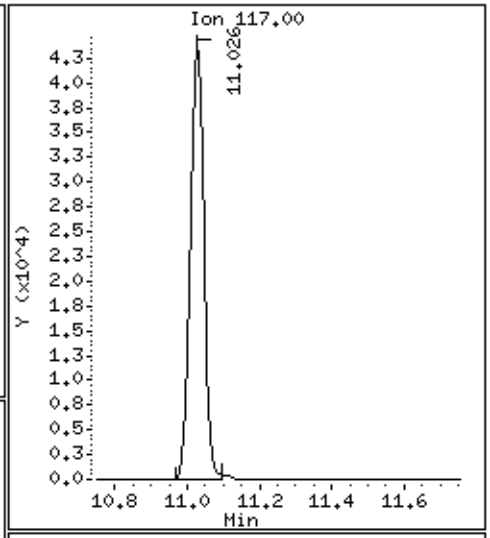
32 Carbon Tetrachloride | Concentration: 7.6410 UG/L

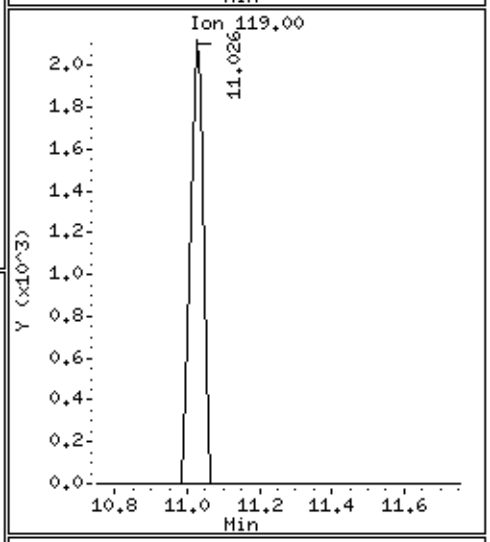


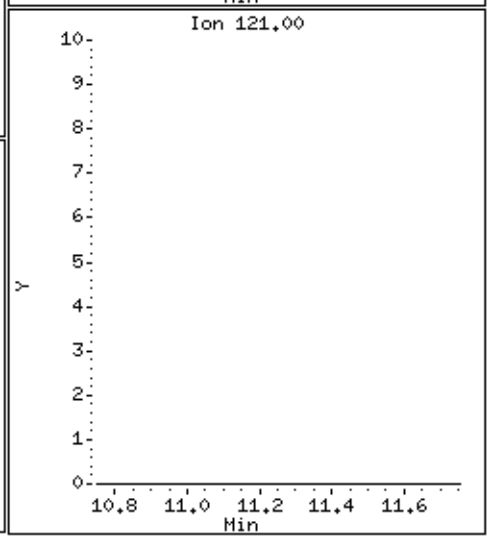












[1,1-Dichloropropene; 36; FP]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

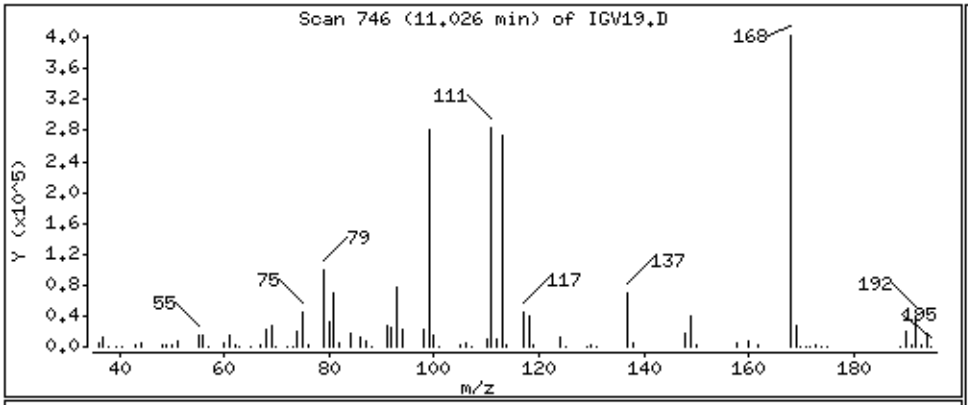
Client ID: DYNA P&T | Instrument: MSVOA09.i

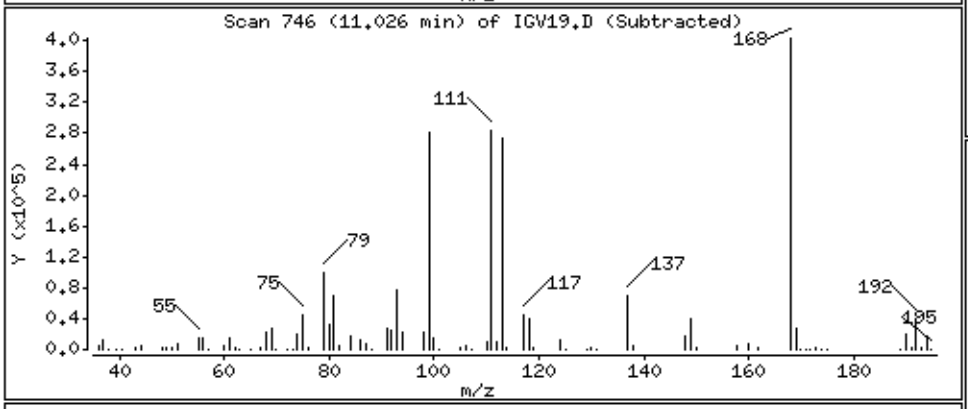
Sample Info: s,268557-001

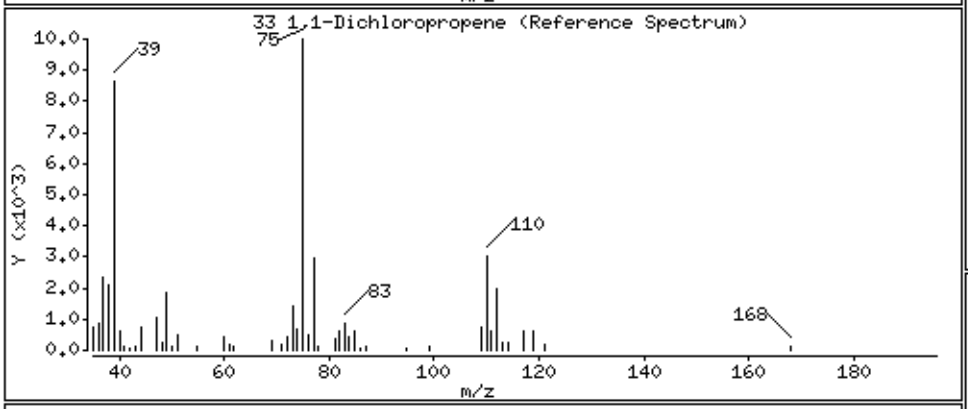
Purge Volume: 5.0 | Operator: VOC

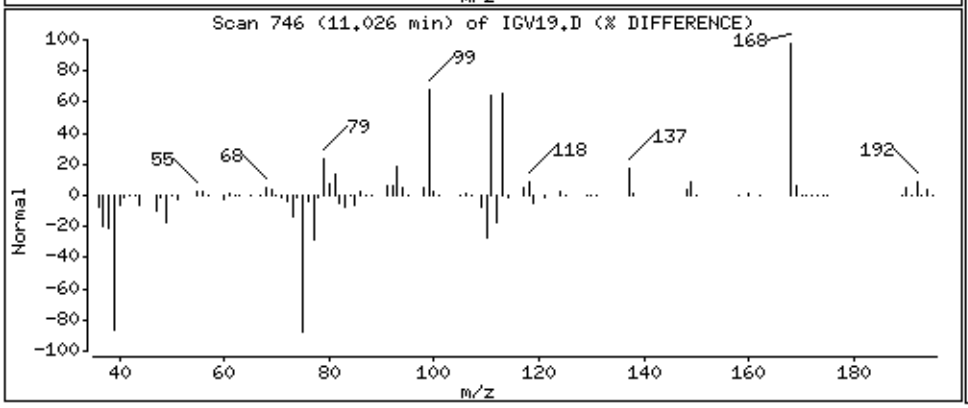
Column phase: RTx Volatiles | Column diameter: 0.25

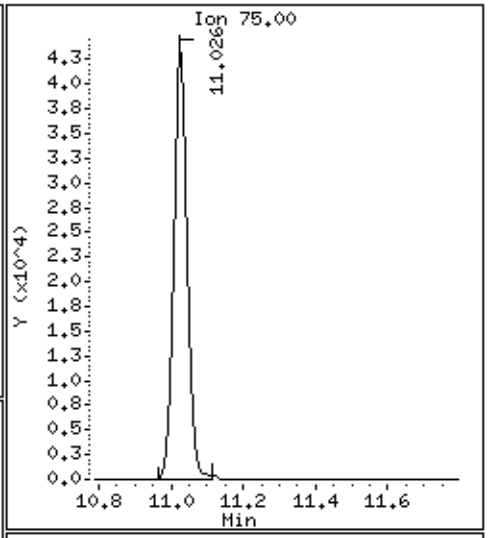
33 1,1-Dichloropropene | Concentration: 7.2201 UG/L

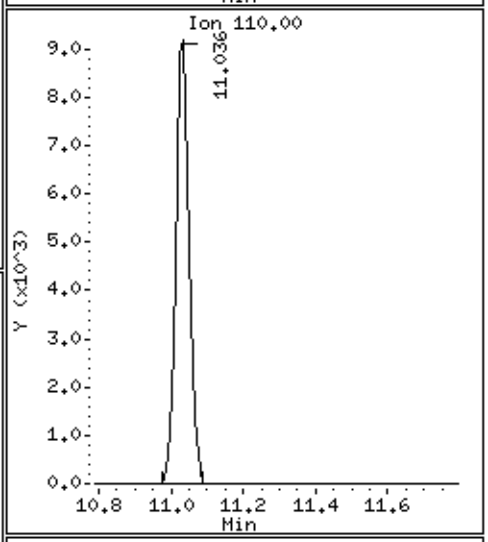


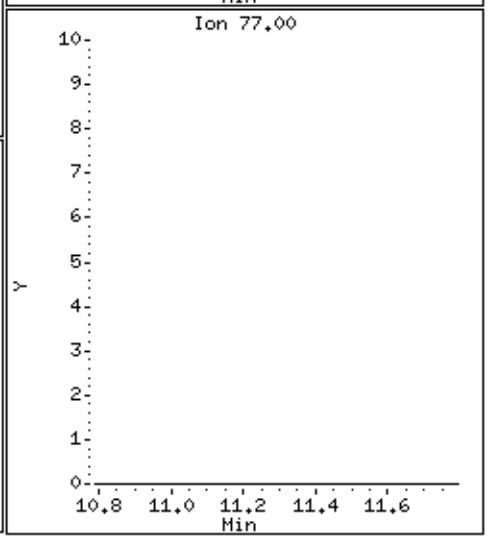












[Trichloroethene; 25; FP]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

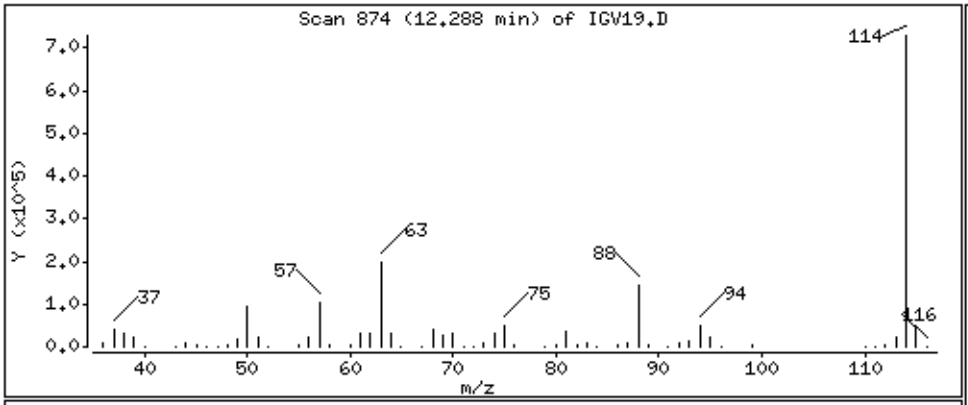
Client ID: DYNA P&T | Instrument: MSVOA09.i

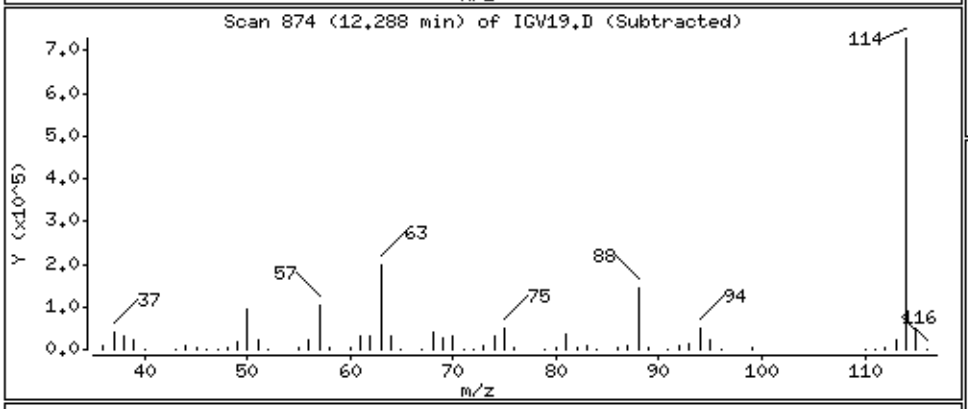
Sample Info: s,268557-001

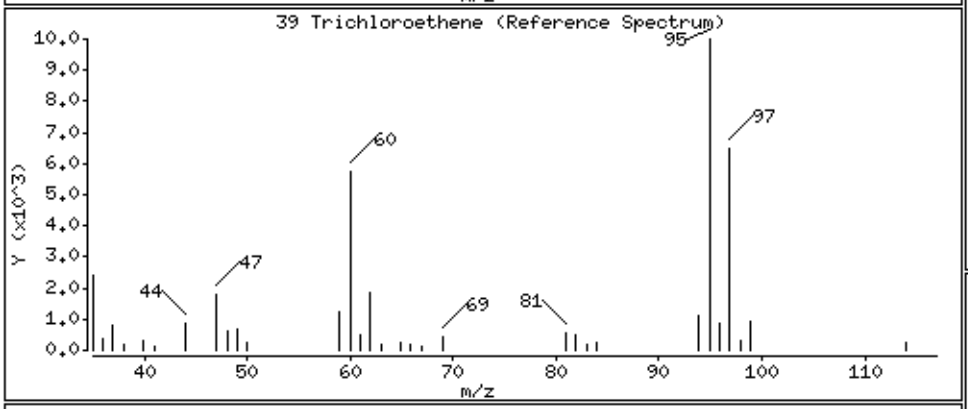
Purge Volume: 5.0 | Operator: VOC

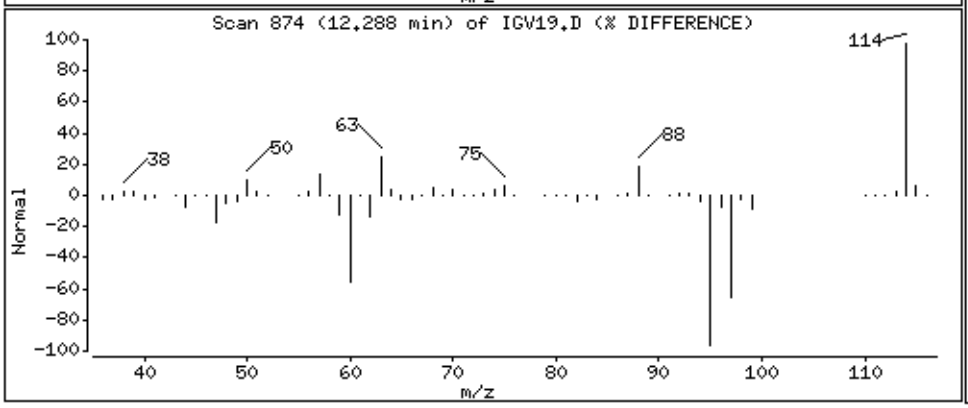
Column phase: RTx Volatiles | Column diameter: 0.25

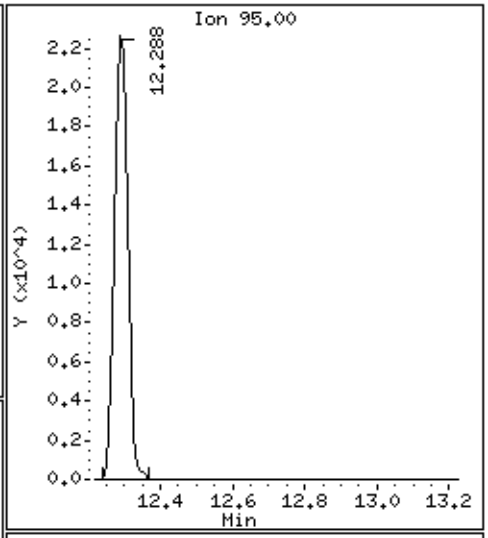
39 Trichloroethene | Concentration: 5.0775 UG/L

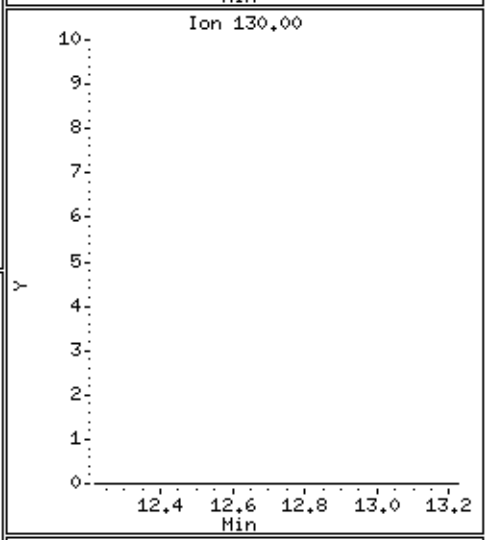


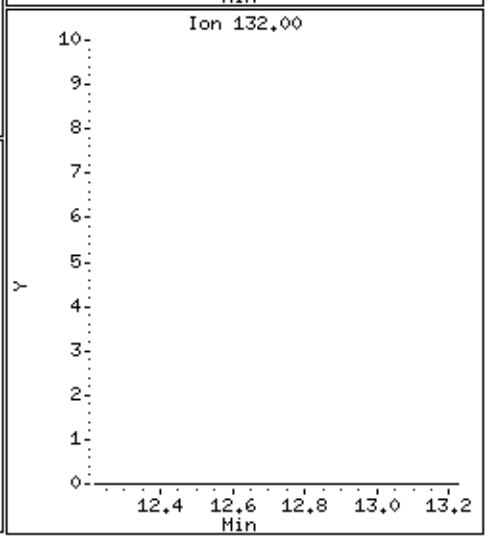












[4-Methyl-2-Pentanone; 11 J; FP]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

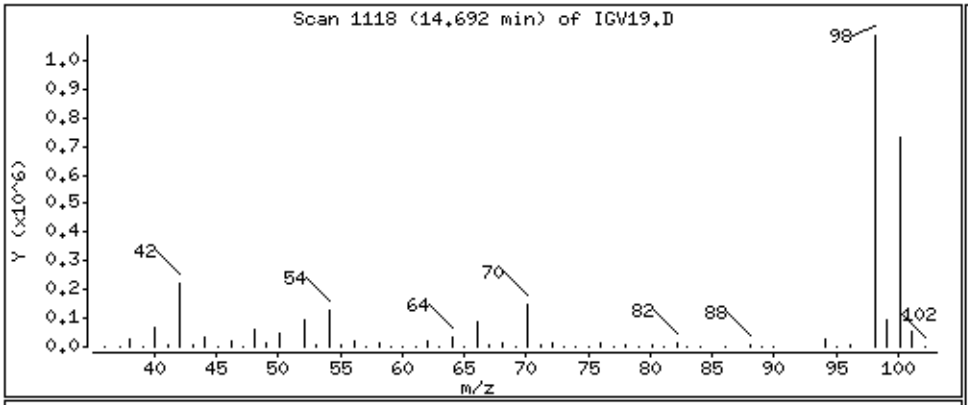
Client ID: DYNA P&T | Instrument: MSVOA09.i

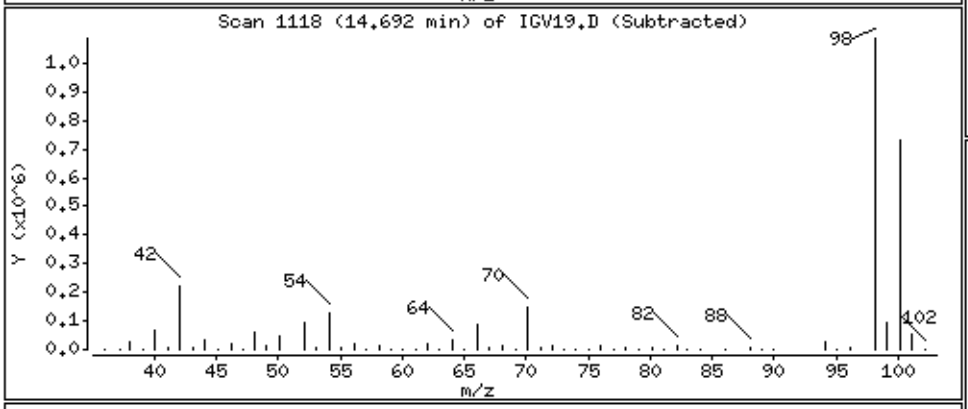
Sample Info: s,268557-001

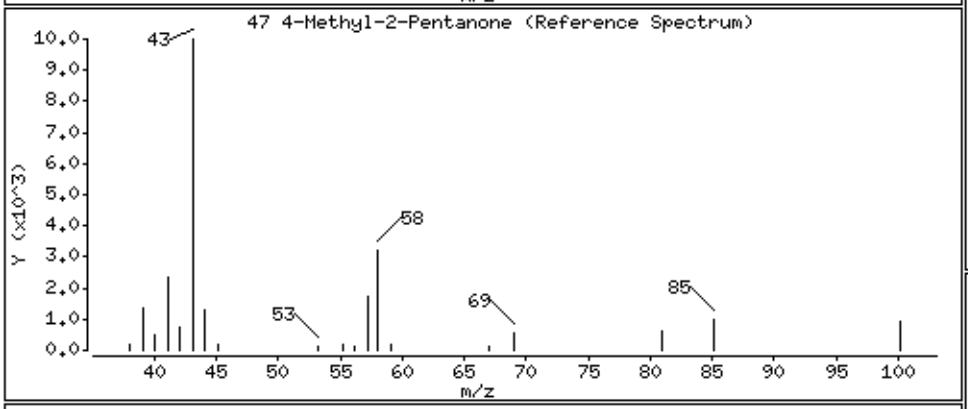
Purge Volume: 5.0 | Operator: VOC

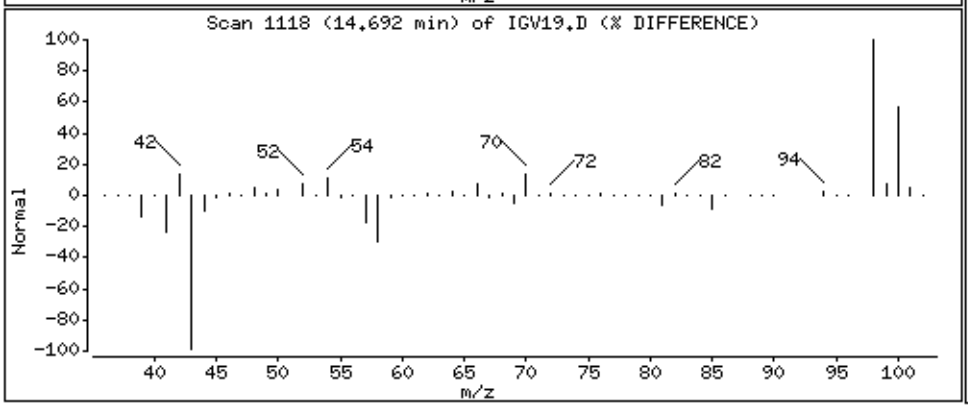
Column phase: RTx Volatiles | Column diameter: 0.25

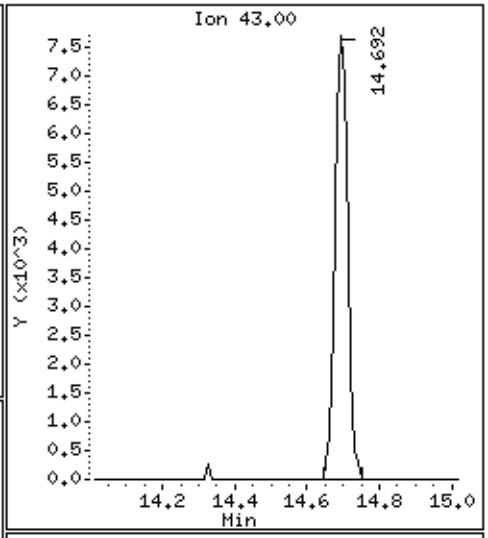
47 4-Methyl-2-Pentanone | Concentration: 2.2279 UG/L

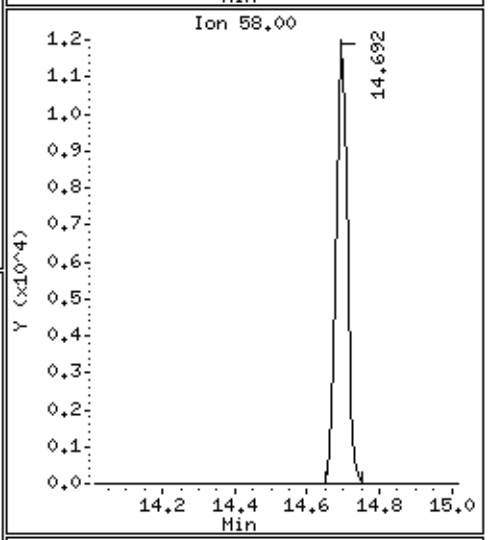


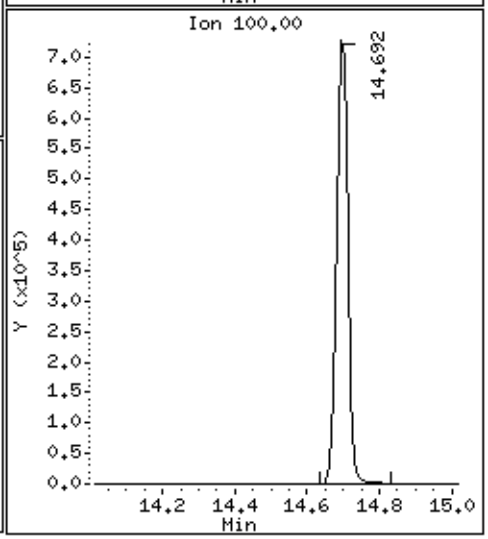












[Chlorobenzene; 9.5]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

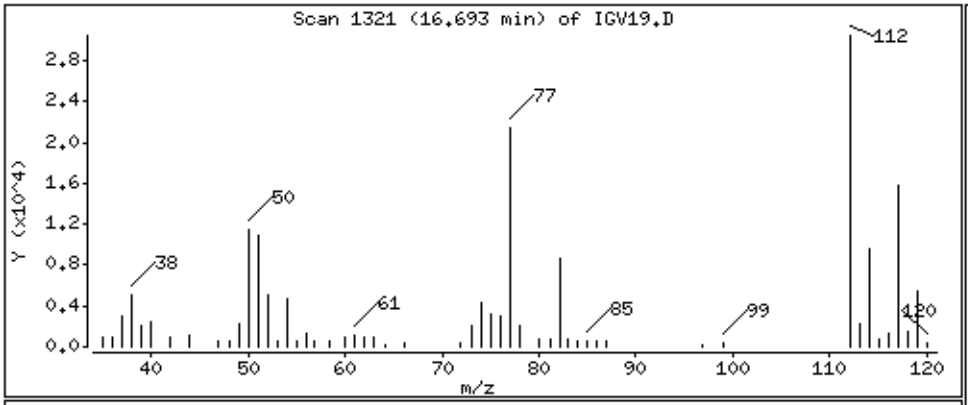
Client ID: DYNA P&T | Instrument: MSVOA09.i

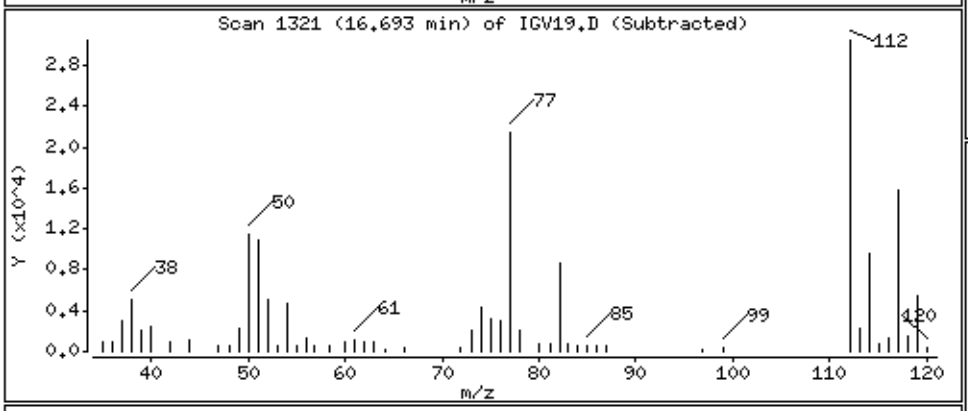
Sample Info: s,268557-001

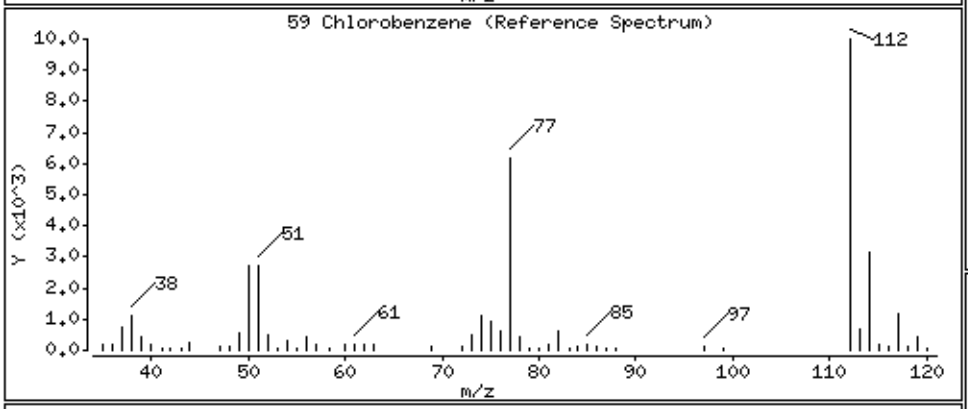
Purge Volume: 5.0 | Operator: VOC

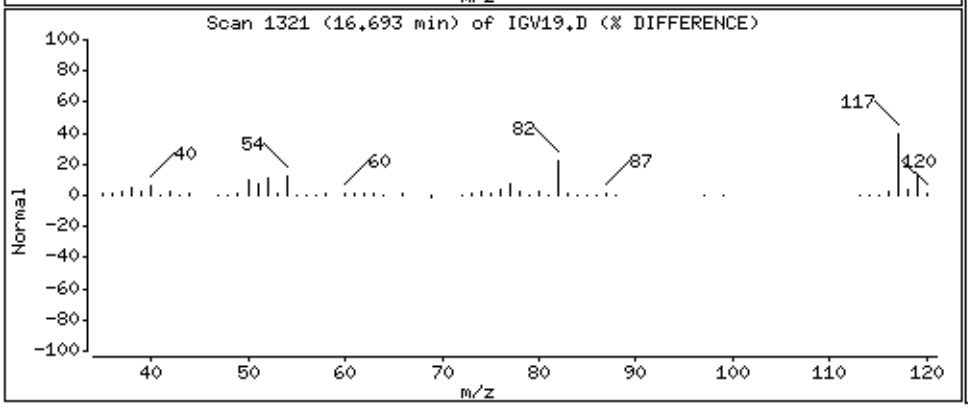
Column phase: RTx Volatiles | Column diameter: 0.25

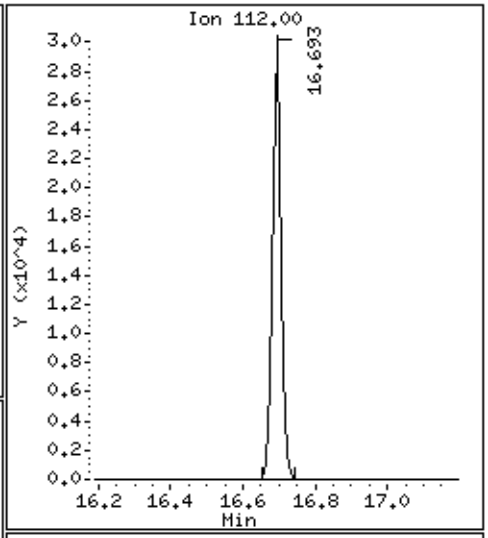
59 Chlorobenzene | Concentration: 1.8927 UG/L

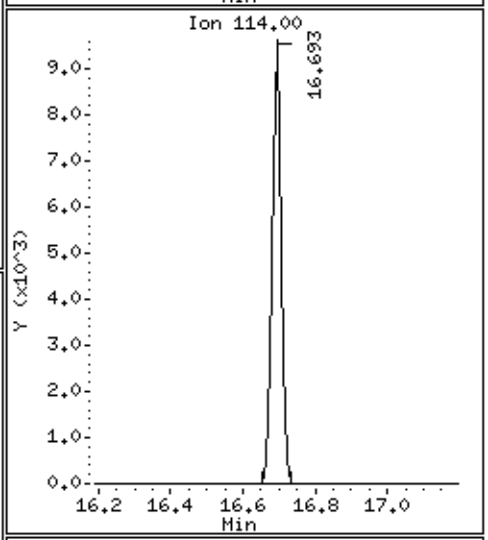


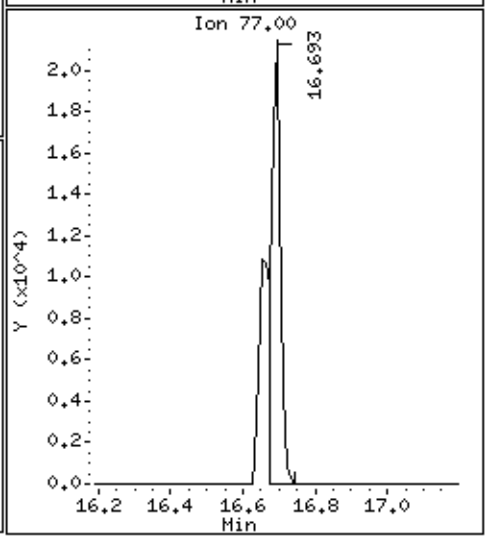












[1,2,3-Trichloropropane; 1.1 J; FP]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

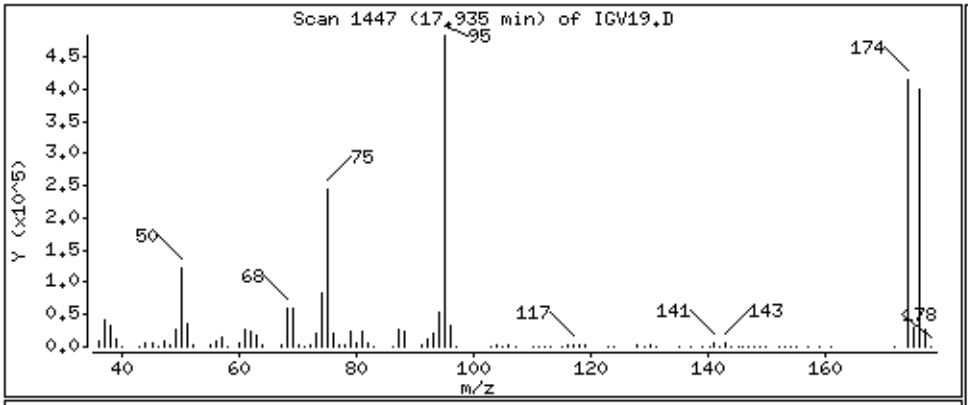
Client ID: DYNA P&T | Instrument: MSVOA09.i

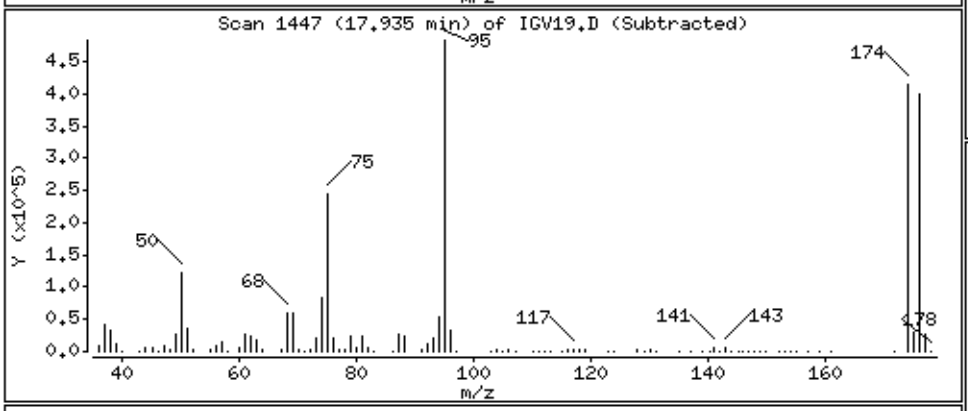
Sample Info: s,268557-001

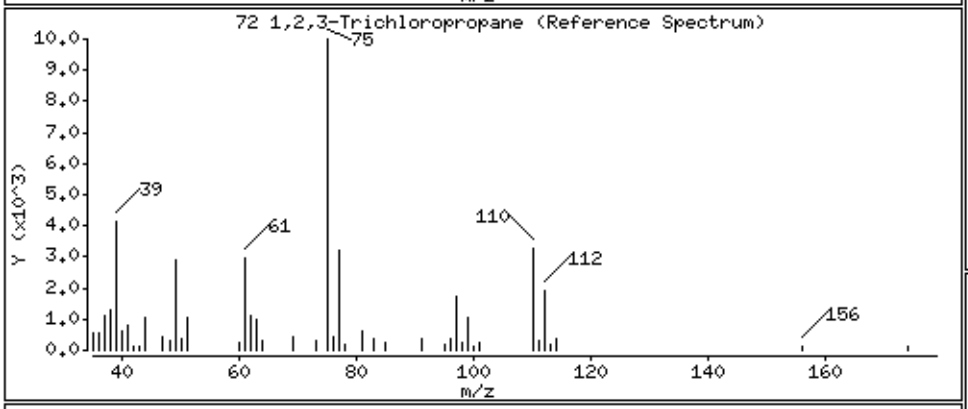
Purge Volume: 5.0 | Operator: VOC

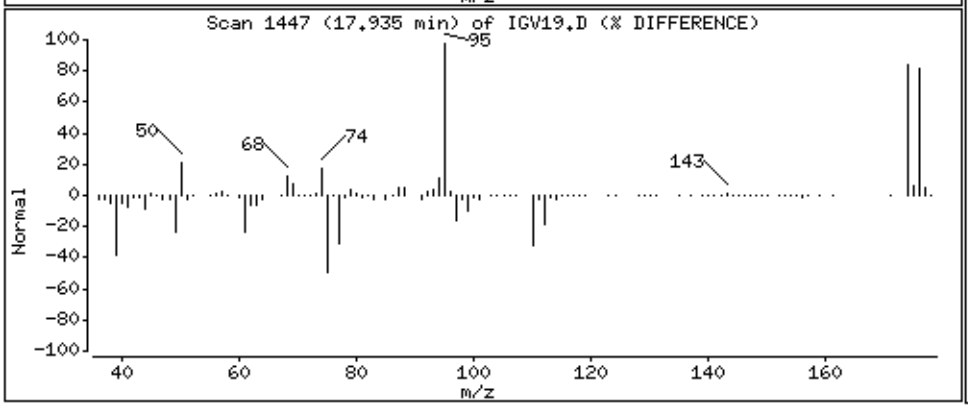
Column phase: RTx Volatiles | Column diameter: 0.25

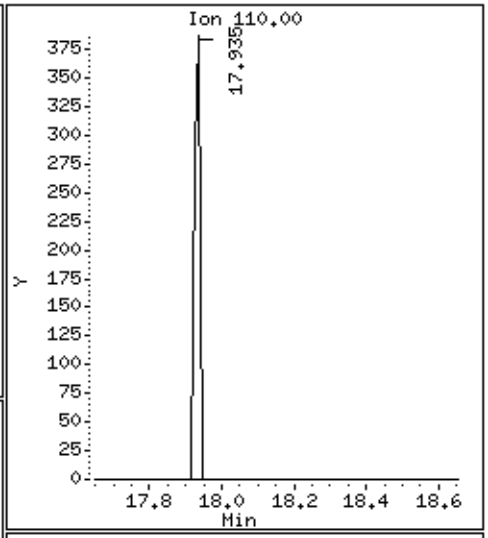
72 1,2,3-Trichloropropane | Concentration: 0.2235 UG/L

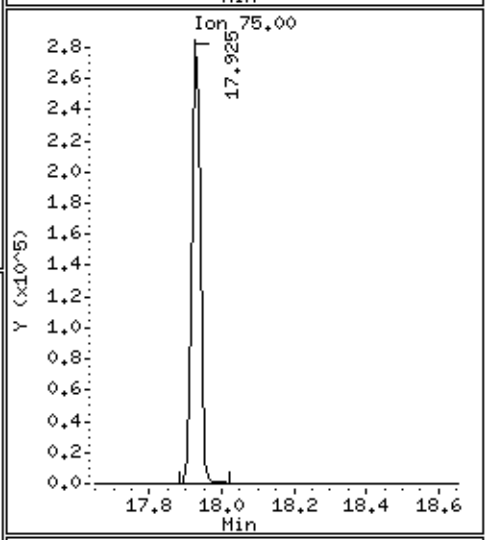


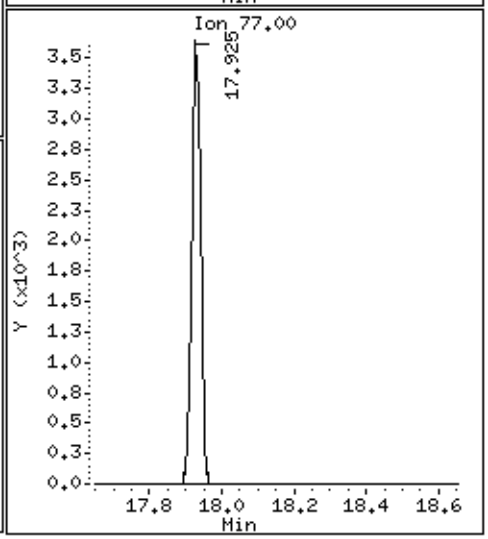












[2-Chlorotoluene; 0.6 J; FP]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

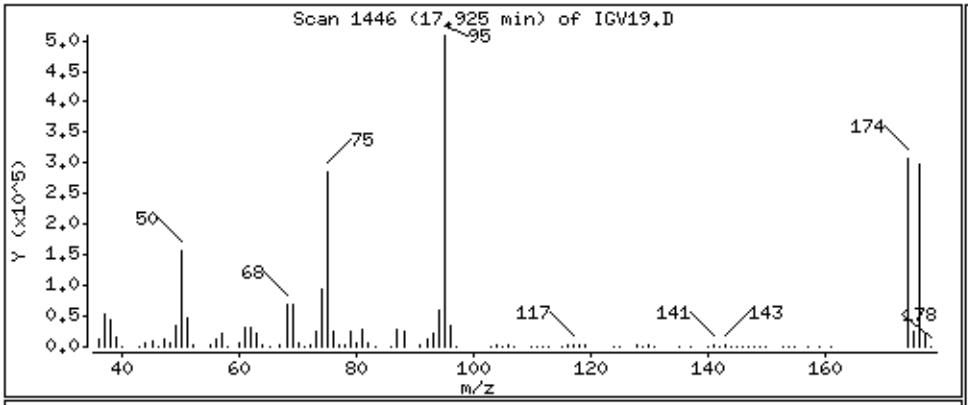
Client ID: DYNA P&T | Instrument: MSVOA09.i

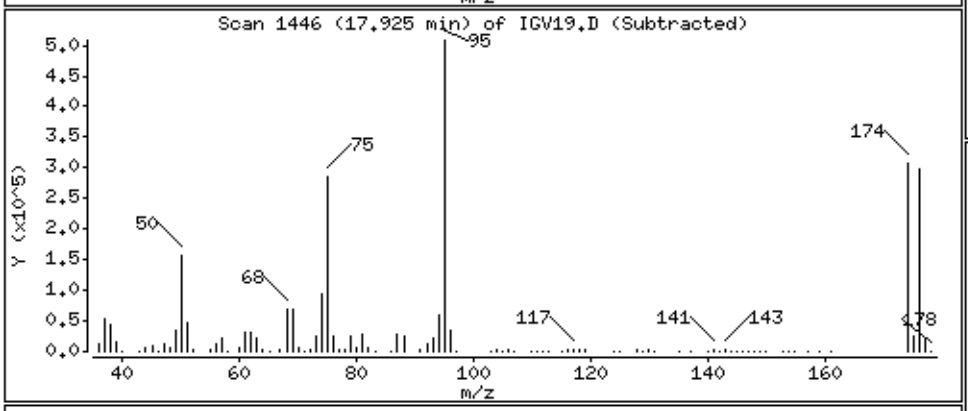
Sample Info: s,268557-001

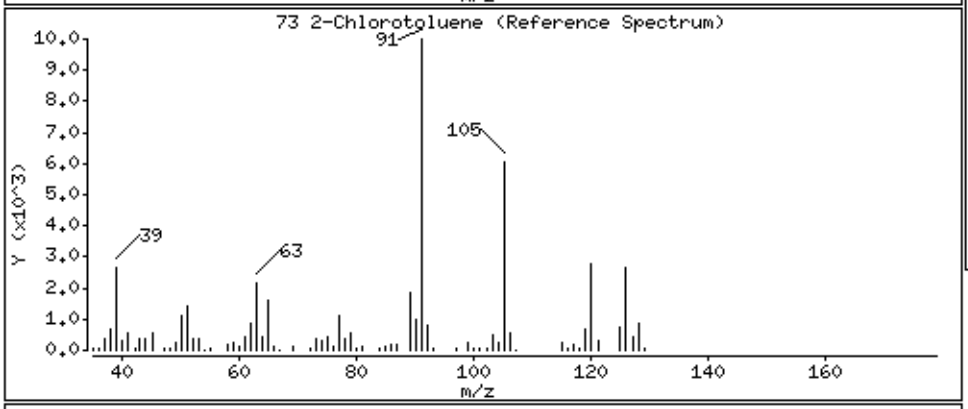
Purge Volume: 5.0 | Operator: VOC

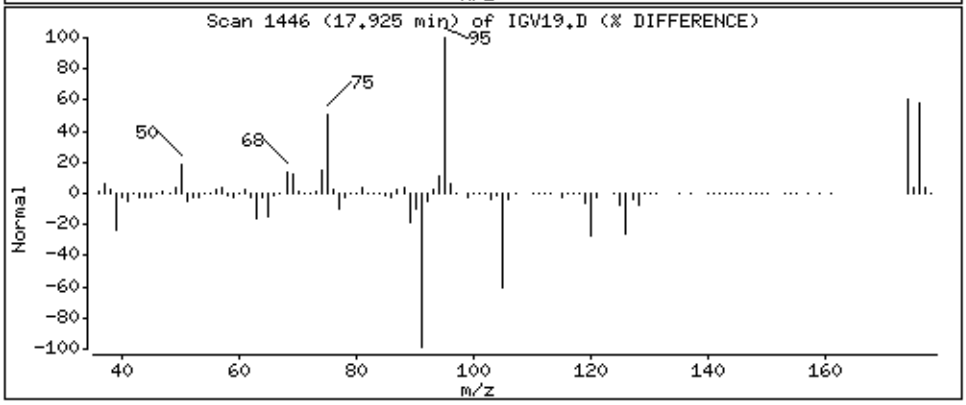
Column phase: RTx Volatiles | Column diameter: 0.25

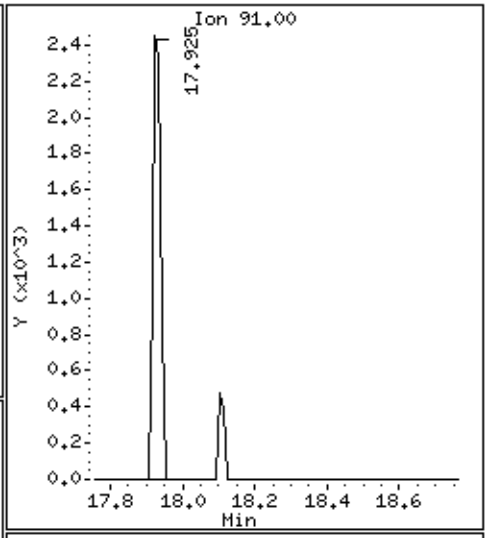
73 2-Chlorotoluene | Concentration: 0.1249 UG/L

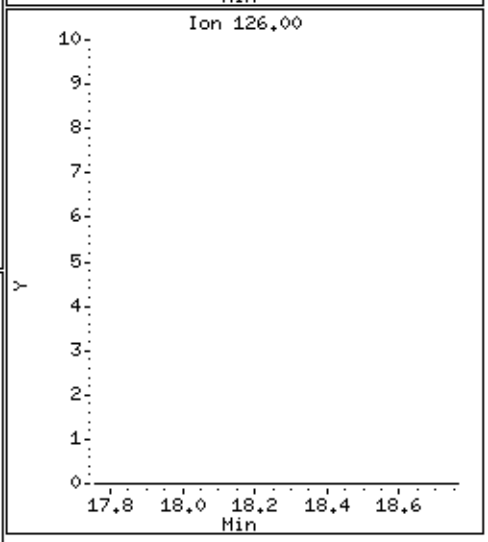












[1,3-Dichlorobenzene; 1.0 J]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

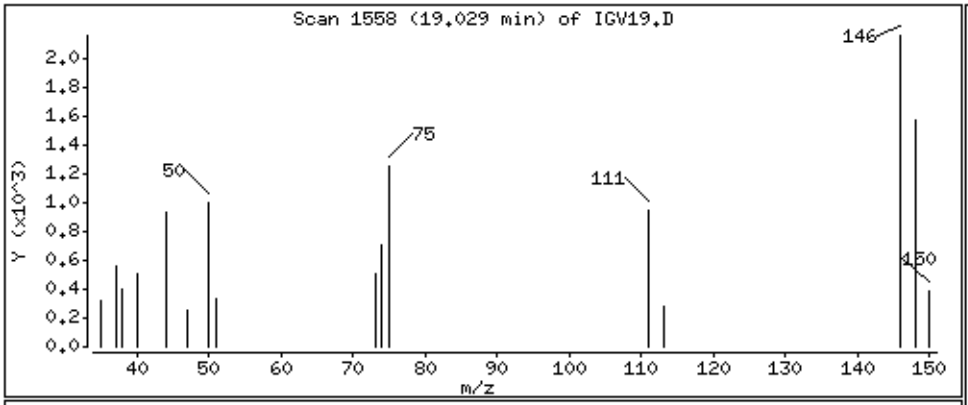
Client ID: DYNA P&T | Instrument: MSVOA09.i

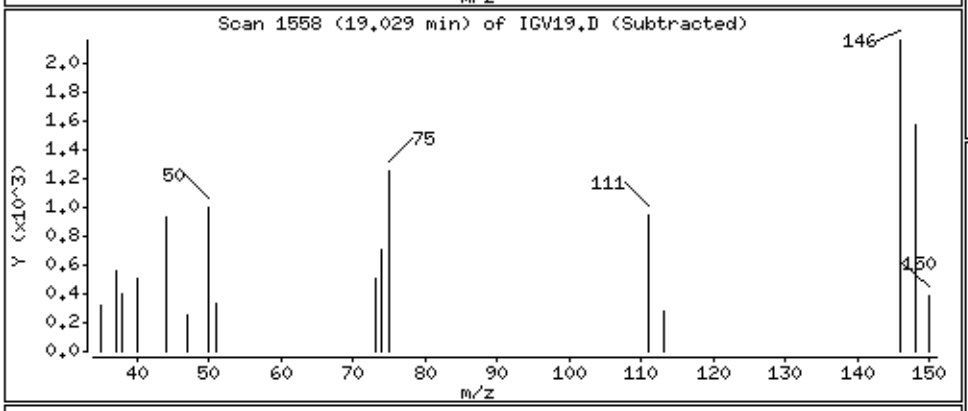
Sample Info: s,268557-001

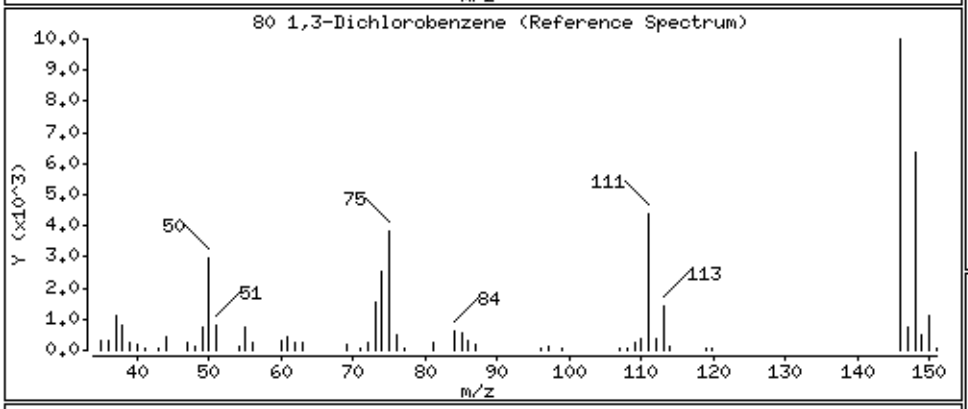
Purge Volume: 5.0 | Operator: VOC

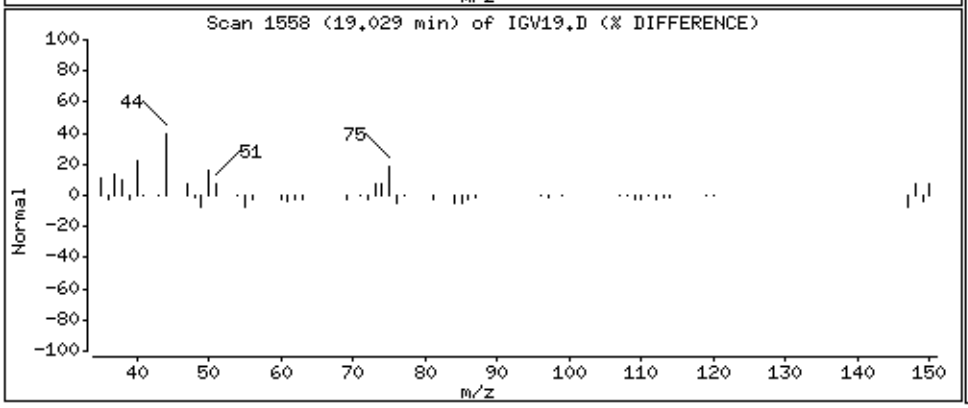
Column phase: RTx Volatiles | Column diameter: 0.25

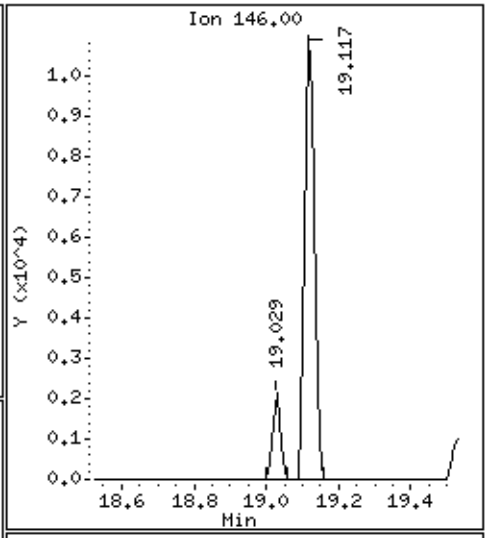
80 1,3-Dichlorobenzene | Concentration: 0.2060 UG/L

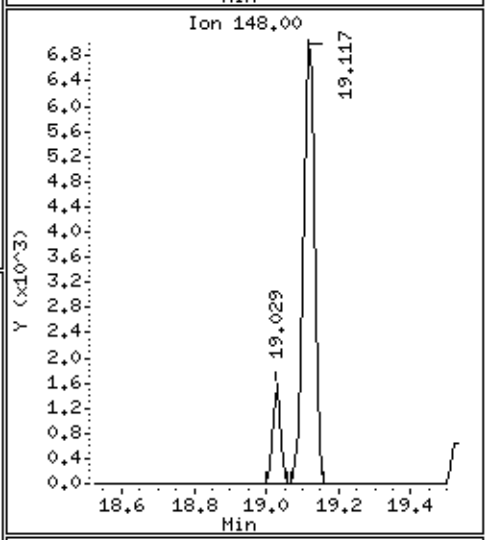


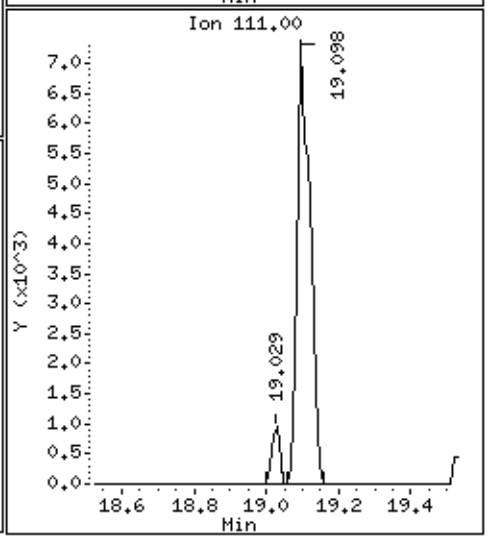












[1,4-Dichlorobenzene; 5.5]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

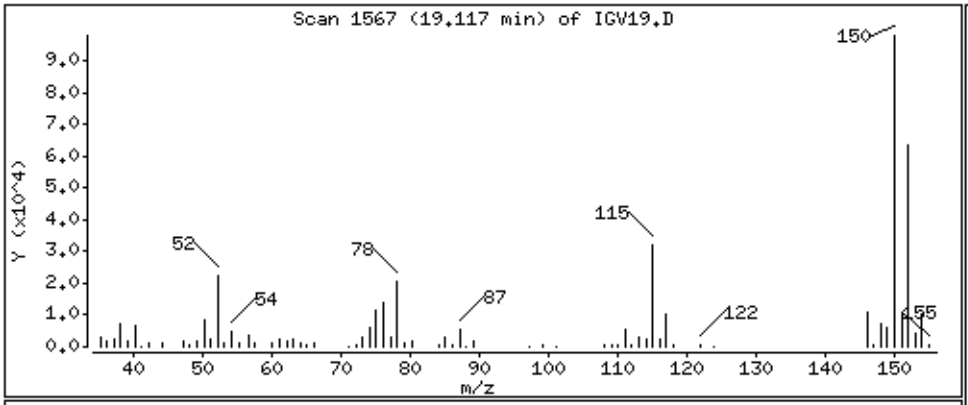
Client ID: DYNA P&T | Instrument: MSVOA09.i

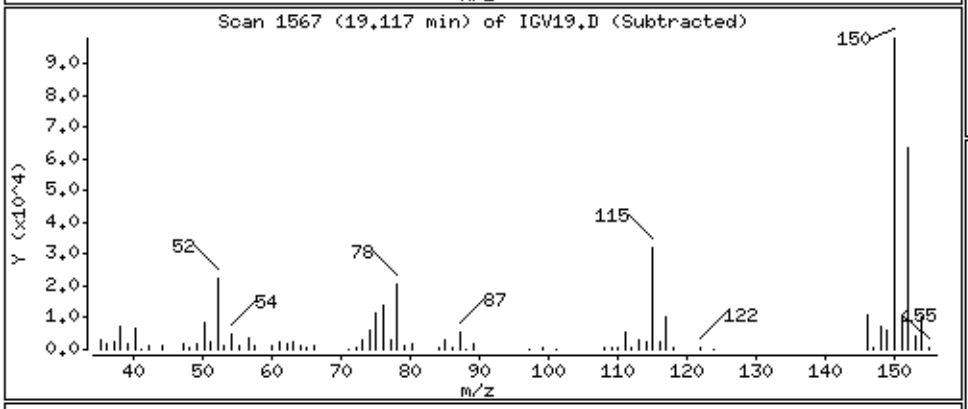
Sample Info: s,268557-001

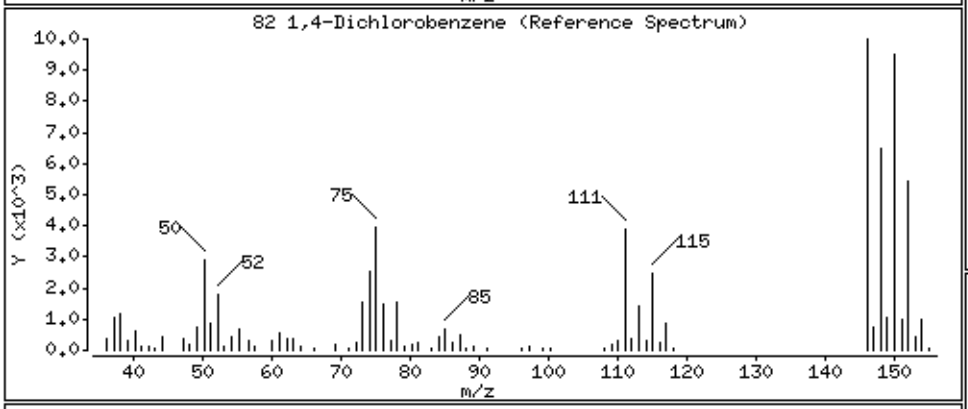
Purge Volume: 5.0 | Operator: VOC

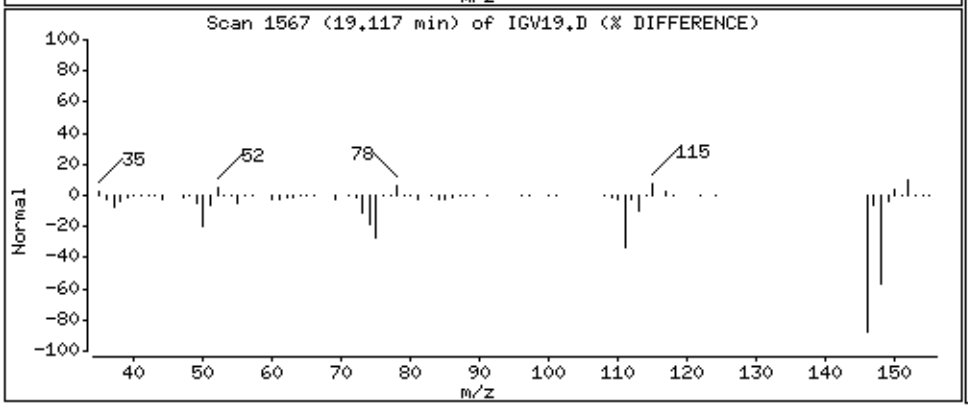
Column phase: RTx Volatiles | Column diameter: 0.25

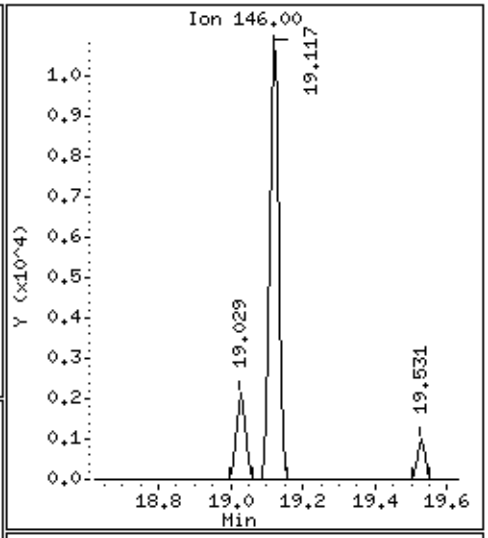
82 1,4-Dichlorobenzene | Concentration: 1.1088 UG/L

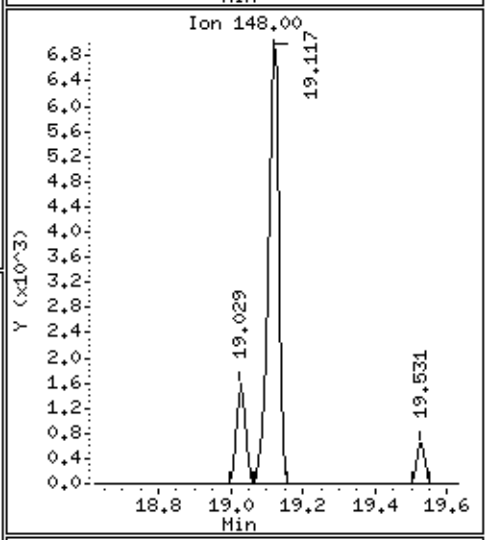


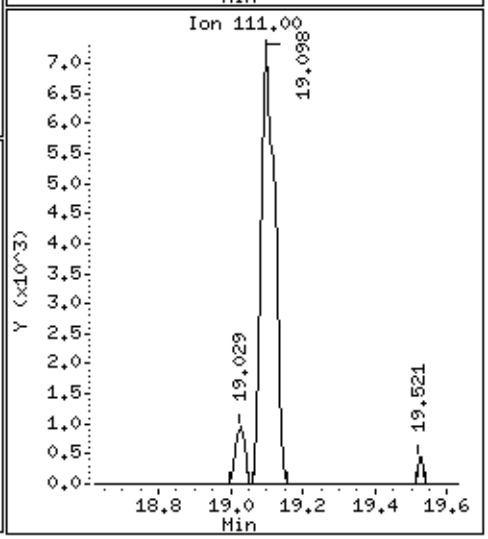












[1,2-Dichlorobenzene; 0.5 J]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV19.D

Date : 31-JUL-2015 21:35

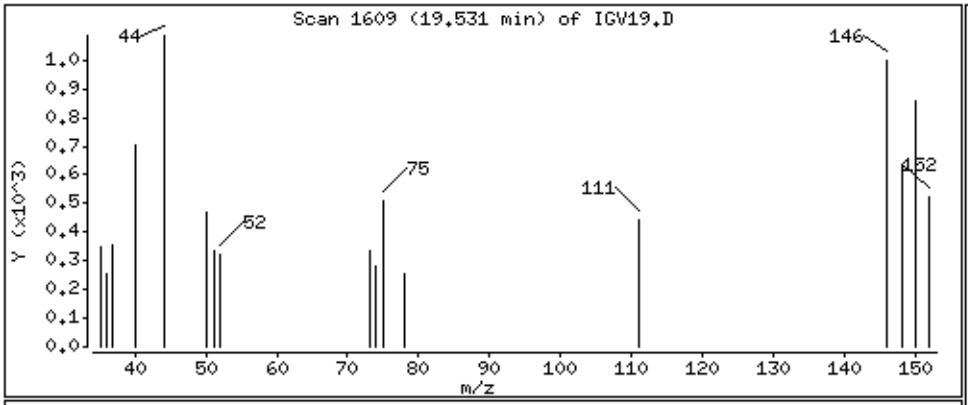
Client ID: DYNA P&T | Instrument: MSVOA09.i

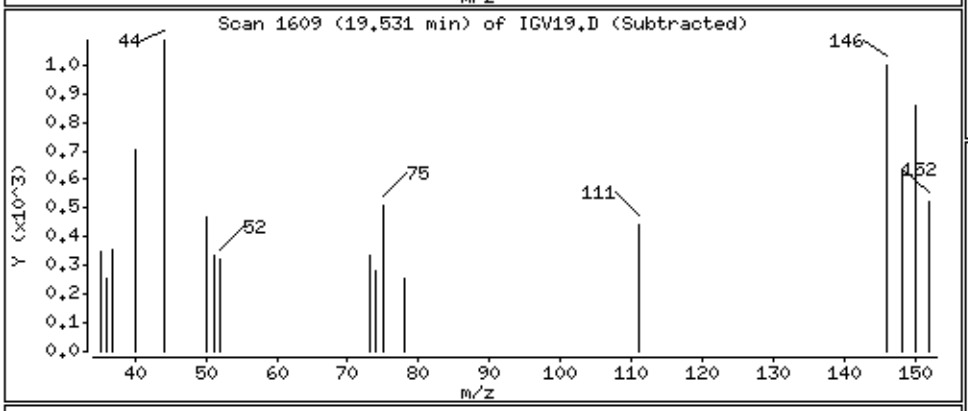
Sample Info: s,268557-001

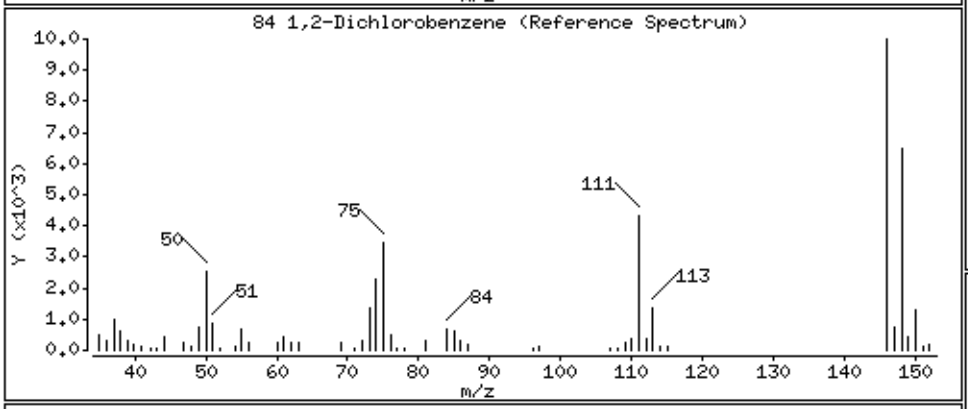
Purge Volume: 5.0 | Operator: VOC

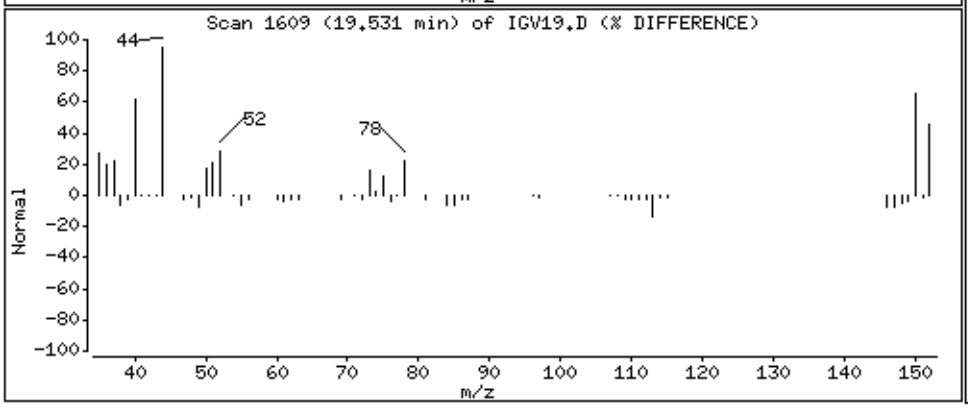
Column phase: RTx Volatiles | Column diameter: 0.25

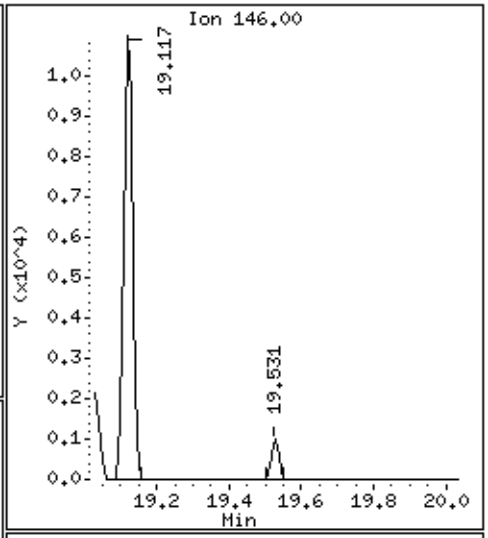
84 1,2-Dichlorobenzene | Concentration: 0.1056 UG/L

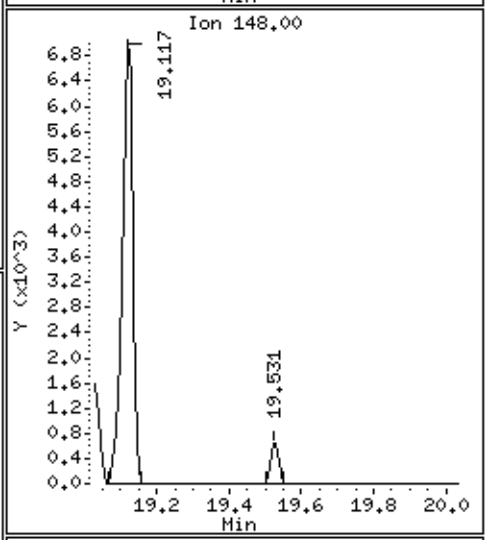


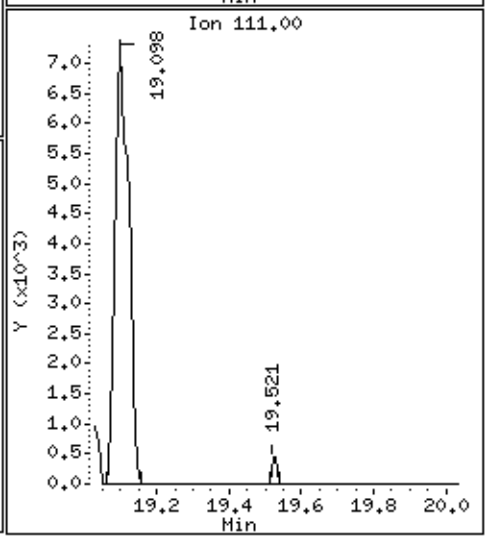












QC Raw Data

CURTIS & TOMPKINS BLANK USER REPORT FOR 268557 MSVOA Water
EPA 8260C

Inst	: MSVOA08	Lab ID	: QC797681		
Seqnum	: 475304292013.3	Matrix	: Water		
File	: hgu13	Batch	: 225639	Time	: 30-JUL-2015 15:05
Cal	: 475253923002	Caldate	: 25-JUN-2015	Caltype	: WATER
IDF	: 1.0	Raw Units	: ug/L	Units	: ug/L

Analyte	Raw	Result	RTS	RL	Flags
Freon 12	0	ND		1.0	u v+ **b***
Chloromethane	0.08150	ND		1.0	u
Vinyl Chloride	0	ND		0.5	u
Bromomethane	0.1290	ND		1.0	u
Chloroethane	0	ND		1.0	u
Trichlorofluoromethane	0	ND		1.0	u
Acetone	0.1232	ND		10	u
Freon 113	0	ND		2.0	c- u v- **b***
1,1-Dichloroethene	0	ND		0.5	u
Methylene Chloride	0	ND		10	u
Carbon Disulfide	0	ND		0.5	u v- **b***
MTBE	0	ND		0.5	u
trans-1,2-Dichloroethene	0	ND		0.5	u
Vinyl Acetate	0	ND		10	c+ u v+ **b***
1,1-Dichloroethane	0	ND		0.5	u
2-Butanone	0.04690	ND		10	u
cis-1,2-Dichloroethene	0	ND		0.5	u
2,2-Dichloropropane	0	ND		0.5	u
Chloroform	0	ND		0.5	u
Bromochloromethane	0	ND		0.5	u
1,1,1-Trichloroethane	0	ND		0.5	u
1,1-Dichloropropene	6.071	6.1	-0.245	0.5	u x
Carbon Tetrachloride	7.939	7.9	-0.216	0.5	u x
1,2-Dichloroethane	0	ND		0.5	u
Benzene	0	ND		0.5	u
Trichloroethene	4.273	4.3	-0.393	0.5	u x
1,2-Dichloropropane	0	ND		0.5	u
Bromodichloromethane	0	ND		0.5	u
Dibromomethane	0	ND		0.5	u
4-Methyl-2-Pentanone	1.376	1.4 J	0.189	10	u x
cis-1,3-Dichloropropene	0	ND		0.5	u
Toluene	0	ND		0.5	u
trans-1,3-Dichloropropene	0	ND		0.5	u
1,1,2-Trichloroethane	0	ND		0.5	u
2-Hexanone	0	ND		10	u
1,3-Dichloropropane	0	ND		0.5	u
Tetrachloroethene	0	ND		0.5	u
Dibromochloromethane	0	ND		0.5	u
1,2-Dibromoethane	0	ND		0.5	u
Chlorobenzene	0	ND		0.5	u
1,1,1,2-Tetrachloroethane	0	ND		0.5	u
Ethylbenzene	0.06360	ND		0.5	u
m,p-Xylenes	0	ND		0.5	u
o-Xylene	0	ND		0.5	u
Styrene	0	ND		0.5	u
Bromoform	0	ND		1.0	u
Isopropylbenzene	0	ND		0.5	u
1,1,2,2-Tetrachloroethane	0.04050	ND		0.5	u

Analyte	Raw	Result	RTS	RL	Flags
1,2,3-Trichloropropane	0.1371	ND		0.5	u
Propylbenzene	0.05490	ND		0.5	u
Bromobenzene	0	ND		0.5	u
1,3,5-Trimethylbenzene	0.03440	ND		0.5	u
2-Chlorotoluene	0.07950	ND		0.5	u
4-Chlorotoluene	0.03350	ND		0.5	u
tert-Butylbenzene	0	ND		0.5	u
1,2,4-Trimethylbenzene	0	ND		0.5	u
sec-Butylbenzene	0	ND		0.5	u
para-Isopropyl Toluene	0	ND		0.5	u
1,3-Dichlorobenzene	0.04110	ND		0.5	u
1,4-Dichlorobenzene	0.04140	ND		0.5	u
n-Butylbenzene	0.06490	ND		0.5	u
1,2-Dichlorobenzene	0.04280	ND		0.5	u
1,2-Dibromo-3-Chloropropane	0	ND		2.0	u
1,2,4-Trichlorobenzene	0.09340	ND		0.5	u
Hexachlorobutadiene	0.07640	ND		2.0	u
Naphthalene	0.09420	ND		2.0	u
1,2,3-Trichlorobenzene	0.08030	ND		0.5	u

Surrogate	Raw	Spiked	Result	%Rec	Limits	Flags
Dibromofluoromethane	52.24	50.00	52.24	104	85-115	u
1,2-Dichloroethane-d4	57.31	50.00	57.31	115	70-120	u
Toluene-d8	48.99	50.00	48.99	98	85-120	u
Bromofluorobenzene	50.67	50.00	50.67	101	75-120	u

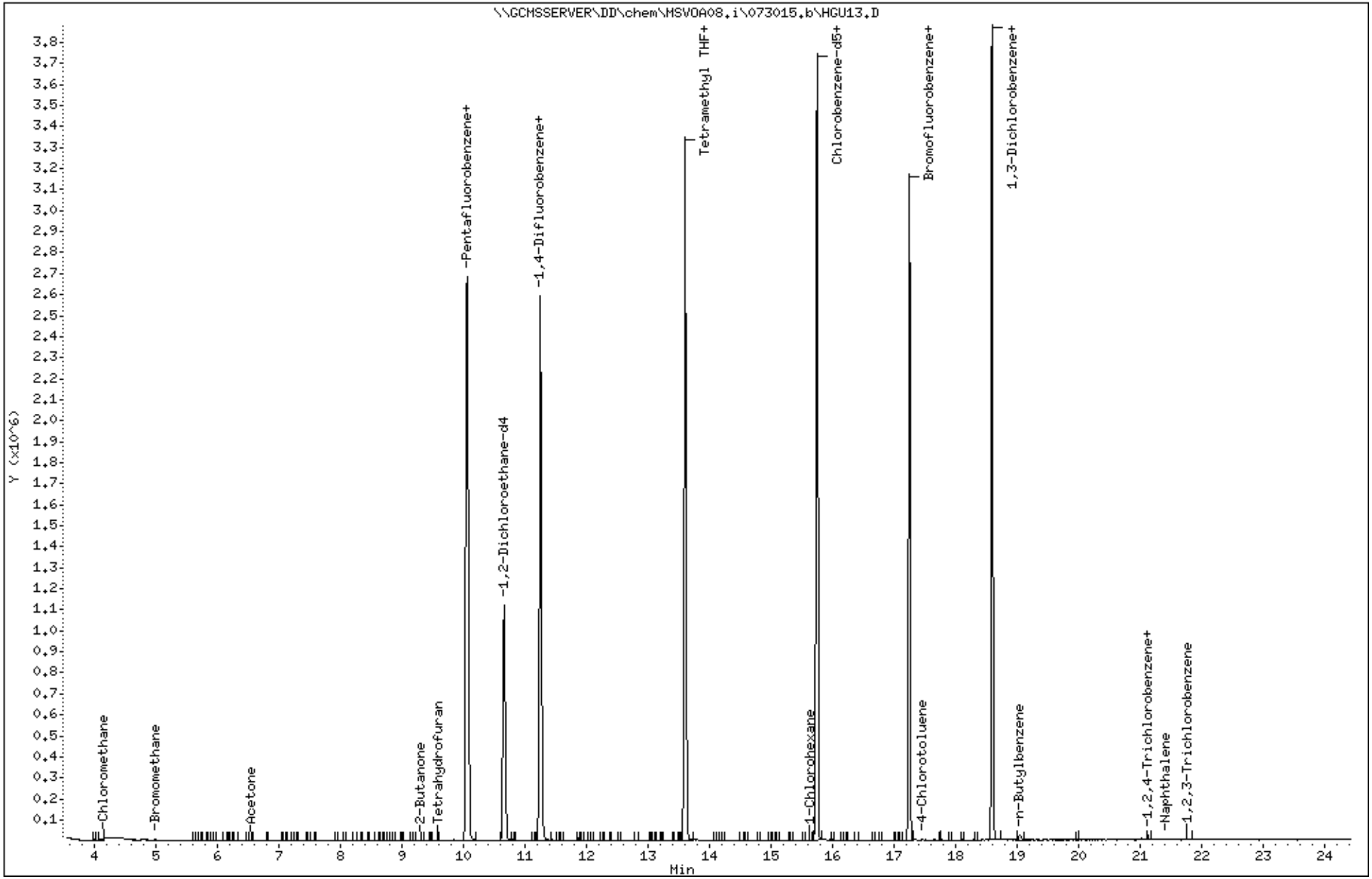
ISTD (ICAL hfp14)	ICAL Area	BLANK Area	%Drift	ICAL RT	BLANK RT	Drift
Pentafluorobenzene	1032422	1549473	50.08	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	2436563	47.89	11.26	11.25	-0.01
Chlorobenzene-d5	1426621	2082560	45.98	15.76	15.75	-0.01
1,4-Dichlorobenzene-d4	722873	1098204	51.92	18.61	18.60	-0.01

Analyst: KKM Date: 08/06/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV x=false positive

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D
Date : 30-JUL-2015 15:05
Client ID: DYNA P&T
Sample Info: MB,QC797681
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D
Report Date: 30-Jul-2015 15:36

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 15:05 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : MB,QC797681
Misc Info : 225639,1/1
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 13
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
2 Chloromethane	50	4.113	4.103	(0.409)	2016	0.08149	0.0814(a)
4 Bromomethane	94	5.000	4.970	(0.498)	1426	0.12900	0.1289(a)
10 Acetone	43	6.618	6.598	(0.658)	672	0.12316	0.1231(a)
24 2-Butanone	43	9.360	9.320	(0.931)	326	0.04689	0.0468(a)
26 Tetrahydrofuran	42	9.735	9.714	(0.969)	421	0.11337	0.1133(a)
* 29 Pentafluorobenzene	168	10.050	10.040	(1.000)	1549473	50.0000	
30 Dibromofluoromethane	113	10.070	10.050	(1.002)	878987	52.2445	52.2444
32 Carbon Tetrachloride	117	10.050	10.267	(0.893)	148528	7.93884	7.9388
33 1,1-Dichloropropene	75	10.050	10.306	(0.893)	146927	6.07136	6.0713
34 1,2-Dichloroethane-d4	65	10.662	10.651	(0.947)	969455	57.3144	57.3144
* 38 1,4-Difluorobenzene	114	11.253	11.233	(1.000)	2436563	50.0000	
39 Trichloroethene	95	11.253	11.648	(1.000)	71853	4.27314	4.2731
45 Tetramethyl THF	43	13.601	13.166	(1.209)	21040	0.49180	0.4917(a)
47 4-Methyl-2-Pentanone	43	13.601	13.413	(1.209)	21656	1.37590	1.3759
48 Toluene-d8	98	13.601	13.591	(0.863)	2485246	48.9877	48.9876
57 1-Chlorohexane	91	15.652	15.642	(0.994)	286	0.01271	0.0127(a)

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D
Report Date: 30-Jul-2015 15:36

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
* 58 Chlorobenzene-d5	117	15.751	15.741	(1.000)	2082560	50.0000	
60 Ethylbenzene	91	15.751	15.839	(1.000)	4627	0.06358	0.0635(a)
67 Bromofluorobenzene	95	17.250	17.240	(0.927)	1088406	50.6726	50.6726
68 1,1,2,2-Tetrachloroethane	83	17.250	17.417	(0.927)	606	0.04046	0.0404(a)
70 Propylbenzene	91	17.250	17.457	(0.927)	4462	0.05492	0.0549(a)
71 1,2,3-Trichloropropane	110	17.240	17.506	(0.927)	473	0.13706	0.1370(a)
72 2-Chlorotoluene	91	17.250	17.634	(0.927)	4462	0.07945	0.0794(a)
73 1,3,5-Trimethylbenzene	105	17.250	17.654	(0.927)	1872	0.03440	0.0343(a)
74 4-Chlorotoluene	91	17.467	17.772	(0.939)	1683	0.03345	0.0334(a)
79 1,3-Dichlorobenzene	146	18.621	18.512	(1.001)	1381	0.04107	0.0410(a)
* 80 1,4-Dichlorobenzene-d4	152	18.601	18.591	(1.000)	1098204	50.0000	
81 1,4-Dichlorobenzene	146	18.621	18.621	(1.001)	1381	0.04143	0.0414(a)
82 n-Butylbenzene	91	18.907	18.897	(1.016)	3325	0.06490	0.0649(a)
83 1,2-Dichlorobenzene	146	18.621	19.065	(1.001)	1381	0.04283	0.0428(a)
85 1,2,4-Trichlorobenzene	180	21.047	21.037	(1.131)	1730	0.09339	0.0933(a)
86 Hexachlorobutadiene	225	21.146	21.136	(1.137)	676	0.07637	0.0763(a)
87 Naphthalene	128	21.432	21.432	(1.152)	3494	0.09417	0.0941(a)
88 1,2,3-Trichlorobenzene	180	21.787	21.777	(1.171)	1343	0.08026	0.0802(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

[Carbon Tetrachloride; 7.9; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D

Date : 30-JUL-2015 15:05

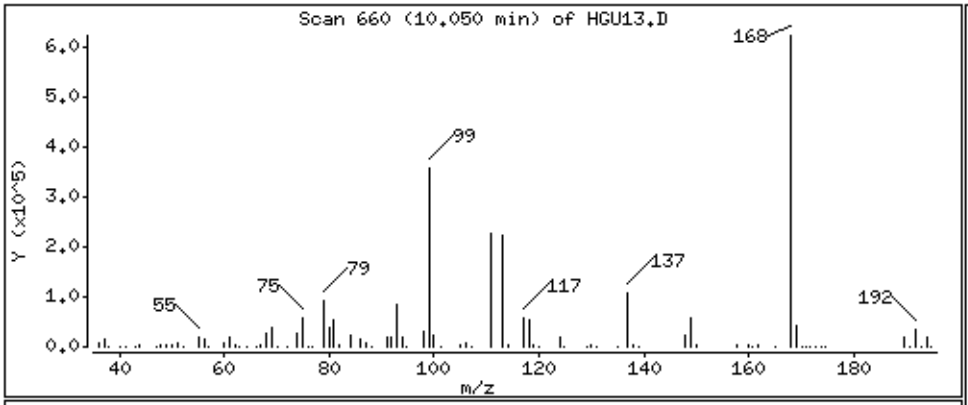
Client ID: DYNA P&T | Instrument: MSVOA08.i

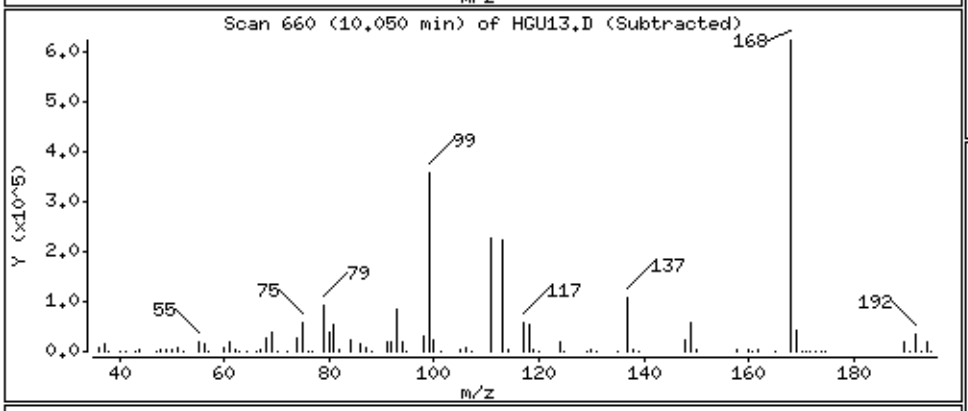
Sample Info: MB,QC797681

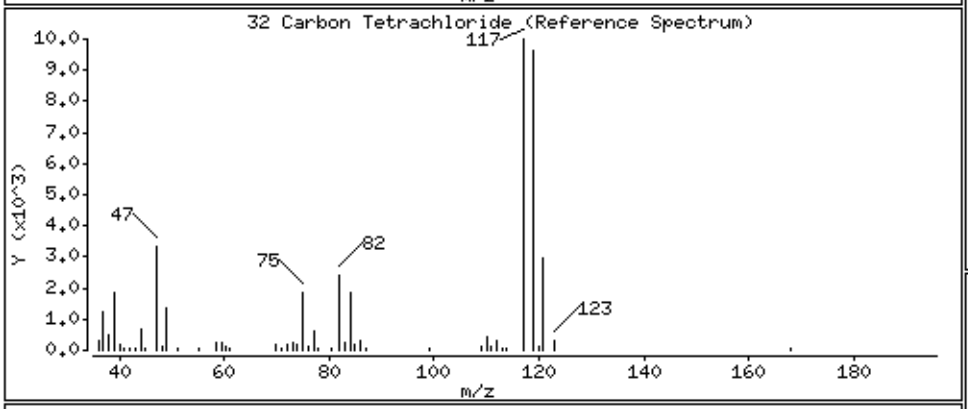
Purge Volume: 5.0 | Operator: VOC

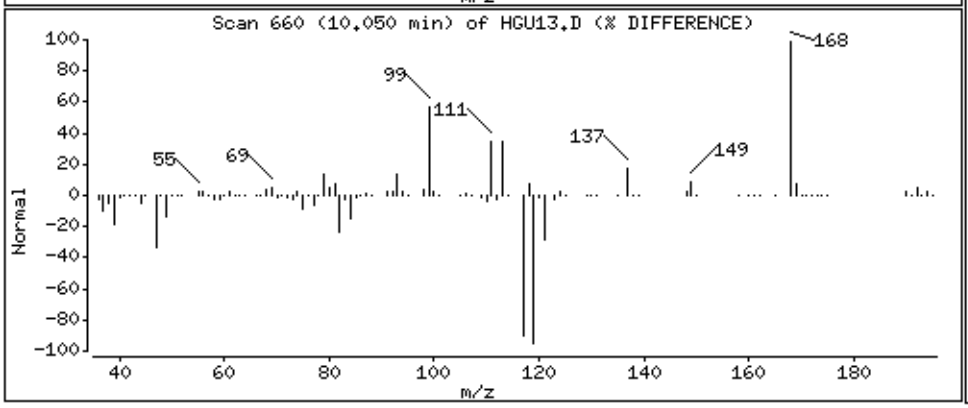
Column phase: RTX 624 | Column diameter: 0.25

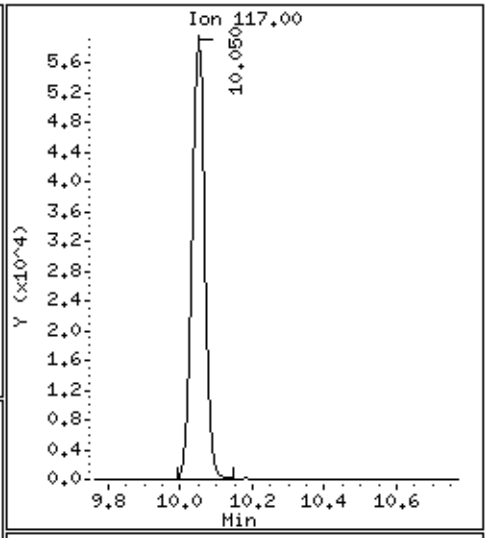
32 Carbon Tetrachloride | Concentration: 7.9388 UG/L

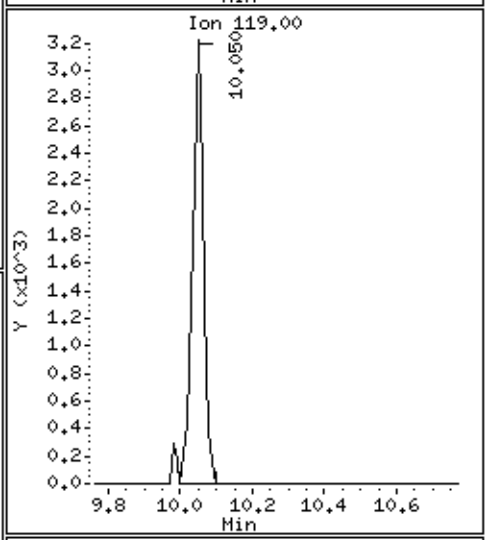


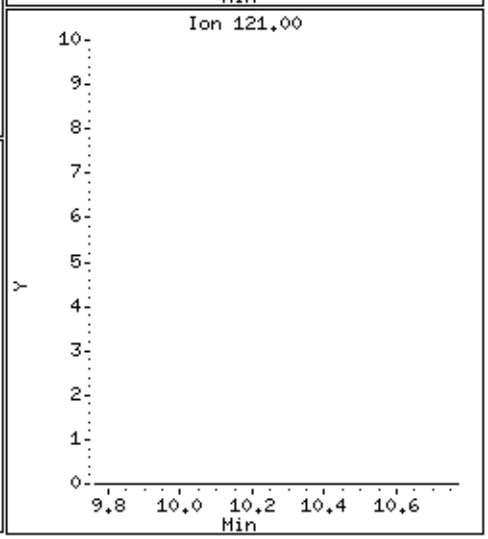












[1,1-Dichloropropene; 6.1; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D

Date : 30-JUL-2015 15:05

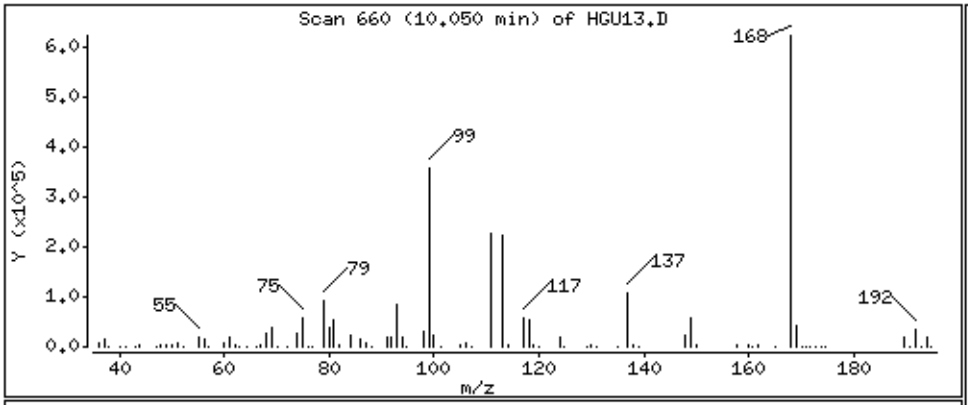
Client ID: DYNA P&T | Instrument: MSVOA08.i

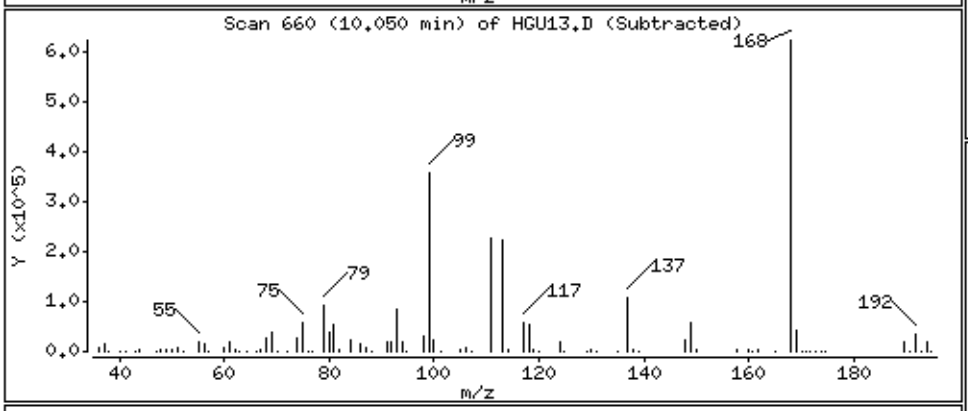
Sample Info: MB,QC797681

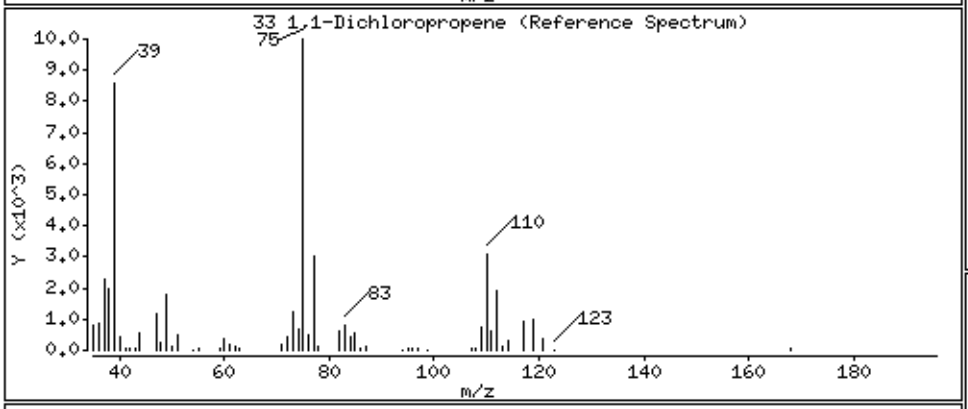
Purge Volume: 5.0 | Operator: VOC

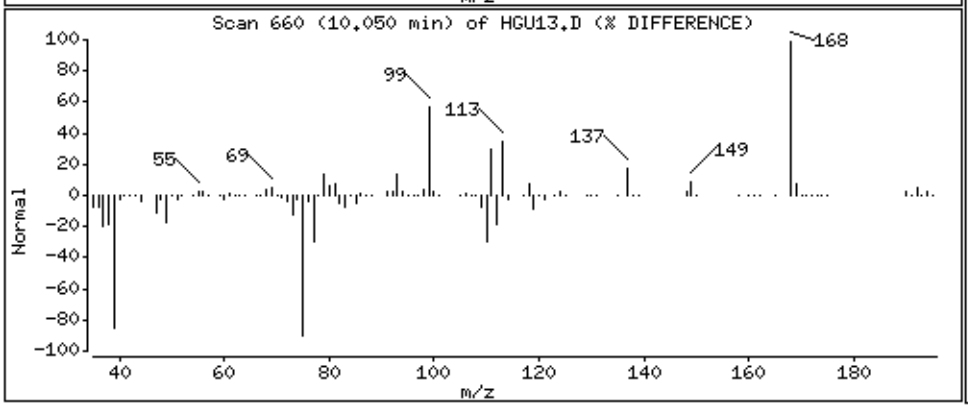
Column phase: RTX 624 | Column diameter: 0.25

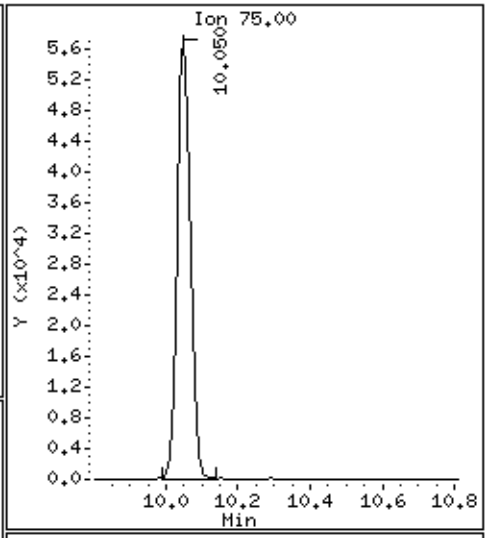
33 1,1-Dichloropropene | Concentration: 6.0713 UG/L

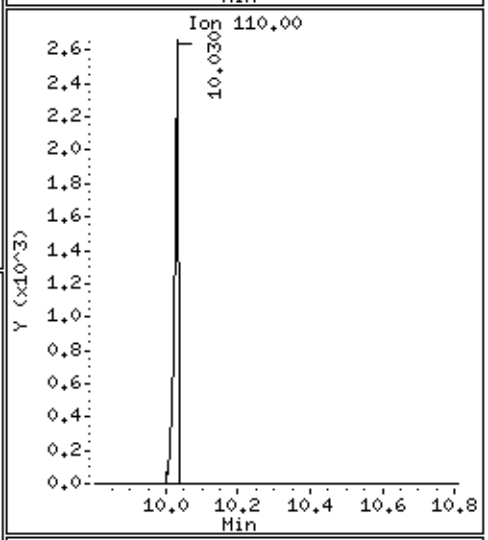


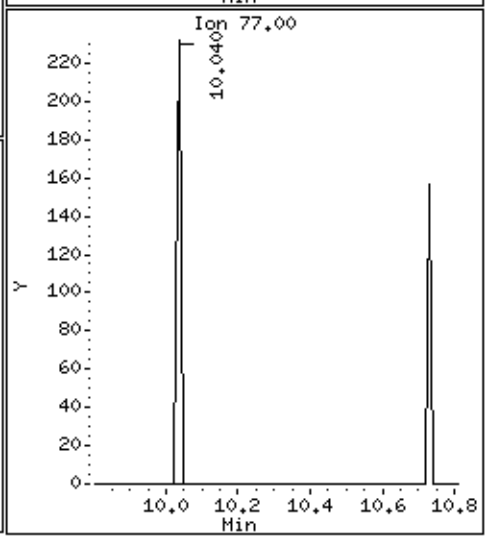












[Trichloroethene; 4.3; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D

Date : 30-JUL-2015 15:05

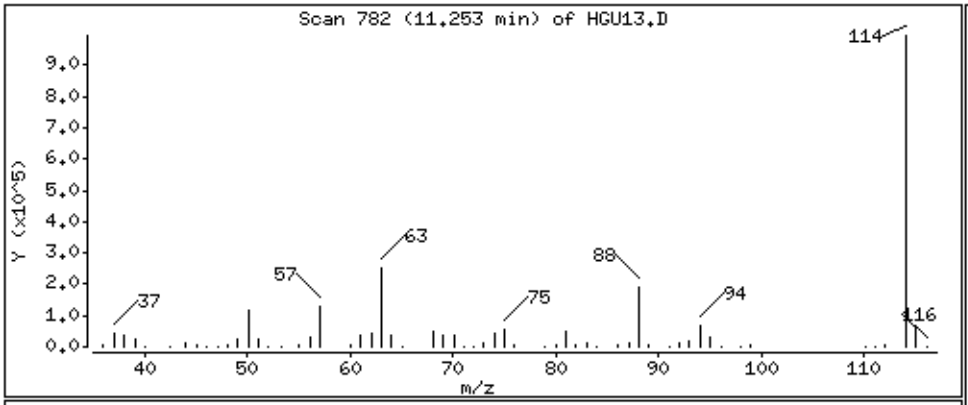
Client ID: DYNA P&T | Instrument: MSVOA08.i

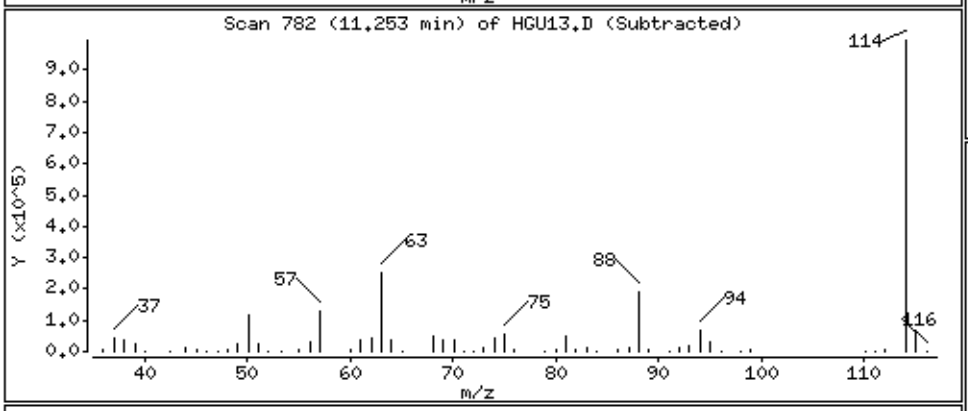
Sample Info: MB,QC797681

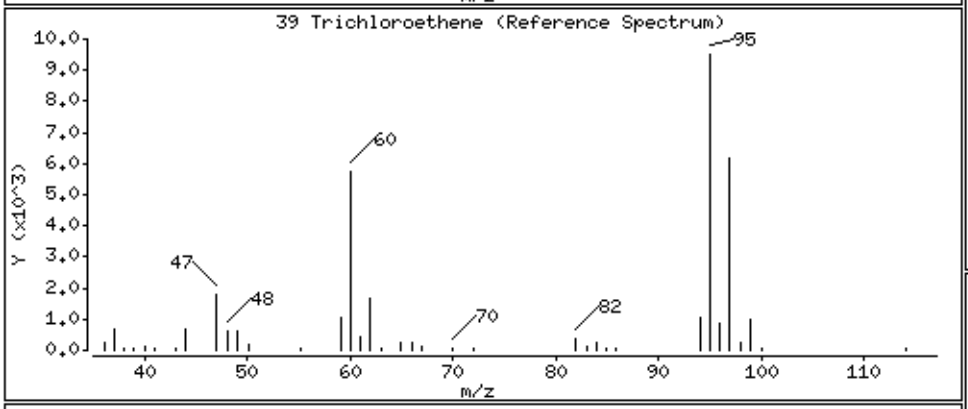
Purge Volume: 5.0 | Operator: VOC

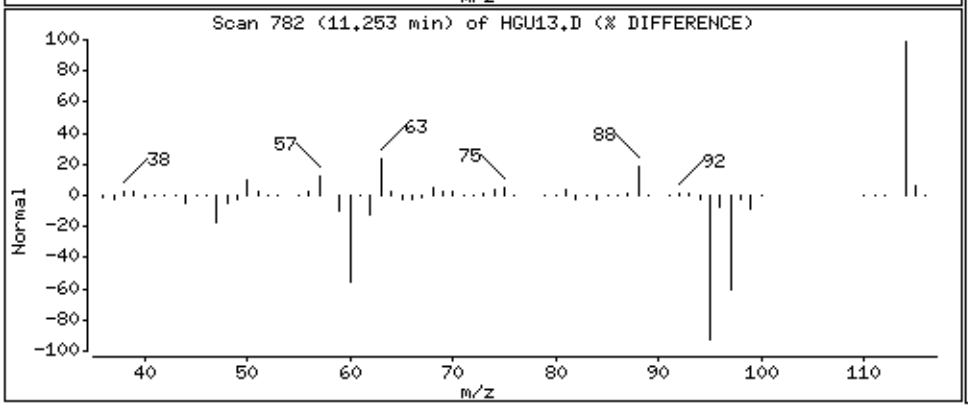
Column phase: RTX 624 | Column diameter: 0.25

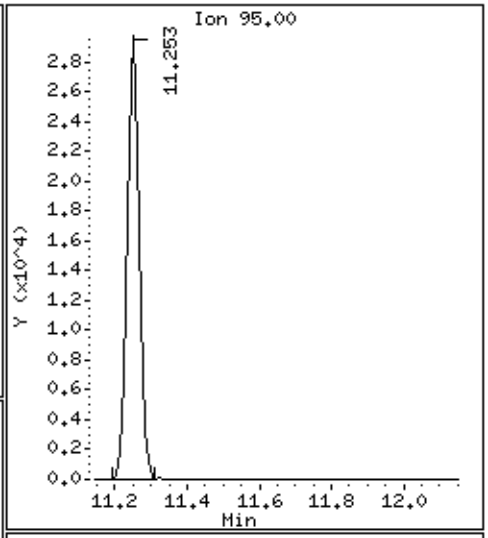
39 Trichloroethene | Concentration: 4.2731 UG/L

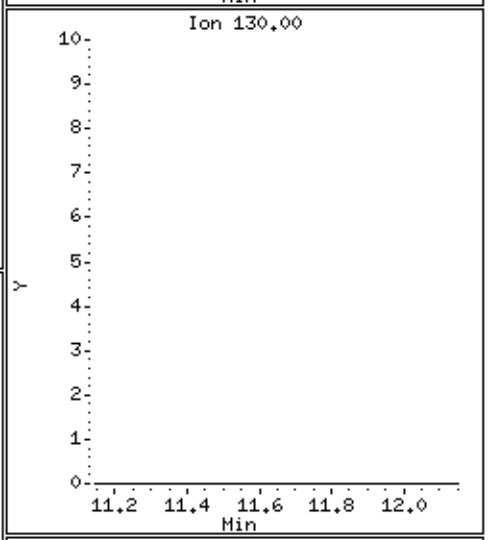


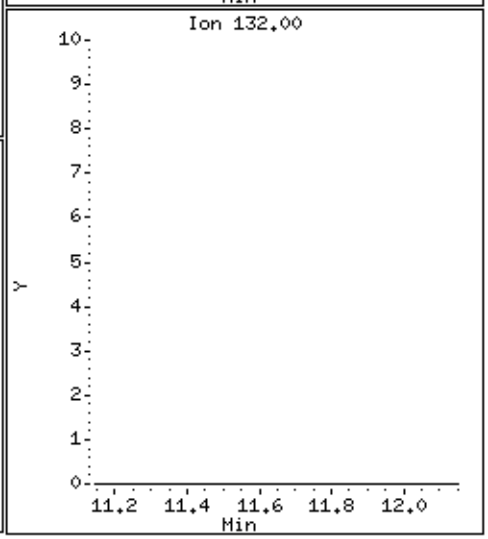












[4-Methyl-2-Pentanone; 1.4 J; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU13.D

Date : 30-JUL-2015 15:05

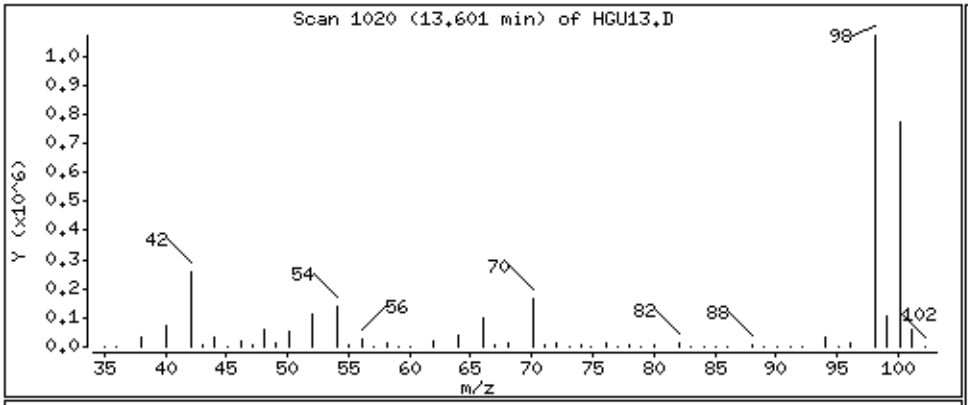
Client ID: DYNA P&T | Instrument: MSVOA08.i

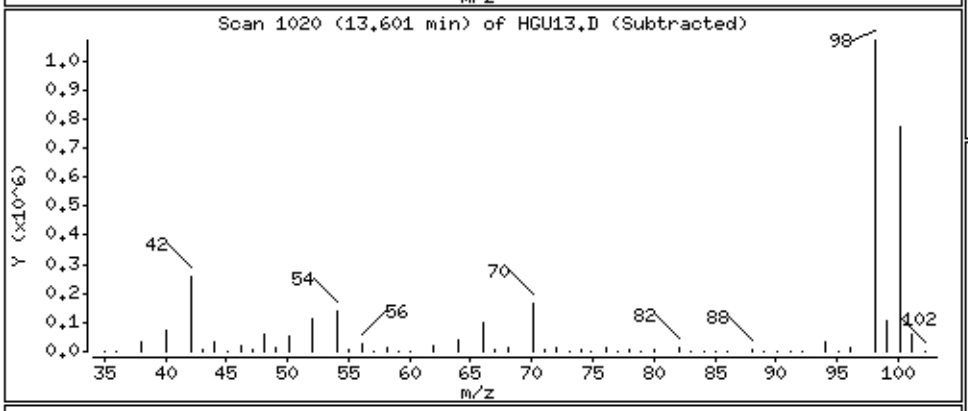
Sample Info: MB,QC797681

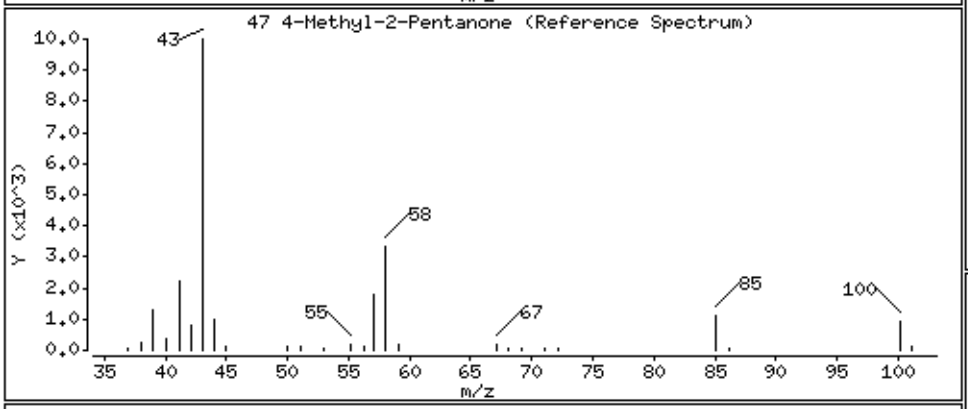
Purge Volume: 5.0 | Operator: VOC

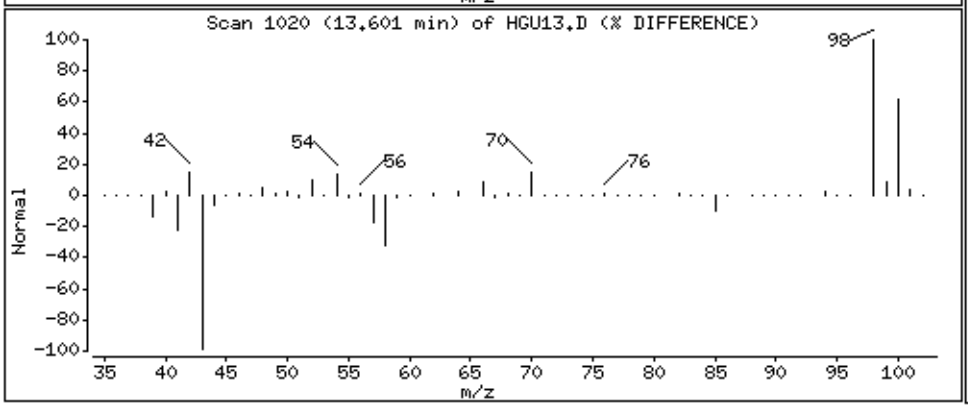
Column phase: RTX 624 | Column diameter: 0.25

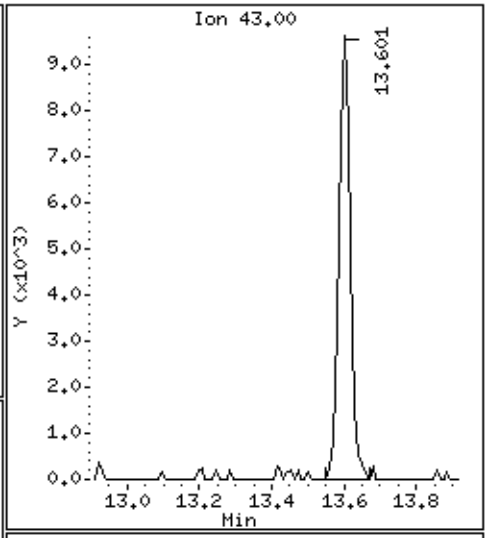
47 4-Methyl-2-Pentanone | Concentration: 1.3759 UG/L

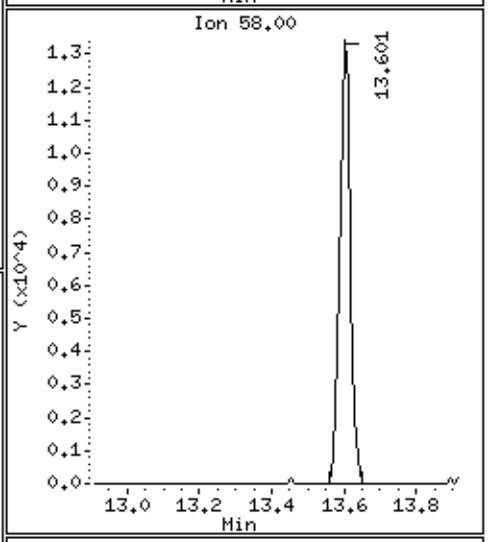


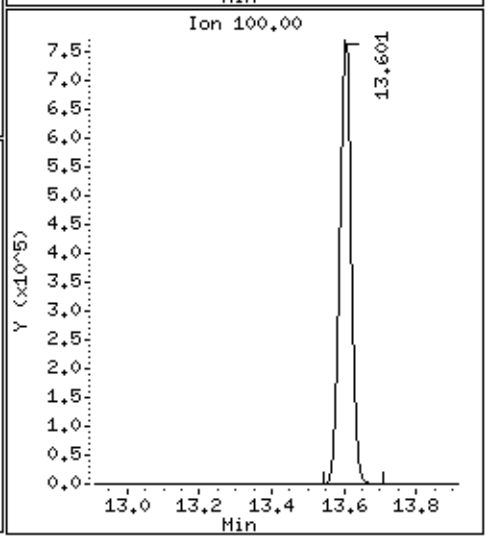












CURTIS & TOMPKINS BLANK USER REPORT FOR 268557 MSVOA Water
EPA 8260C

Inst	: MSVOA09	Lab ID	: QC797876		
Seqnum	: 485305964010.2	Matrix	: Water		
File	: igv10	Batch	: 225691	Time	: 31-JUL-2015 16:25
Cal	: 485271359002	Caldate	: 07-JUL-2015	Caltype	: WATER
IDF	: 1.0	Raw Units	: ug/L	Units	: ug/L

Analyte	Raw	Result	RTS	RL	Flags
Freon 12	0	ND		1.0	u v- **b***
Chloromethane	0	ND		1.0	u
Vinyl Chloride	0	ND		0.5	u
Bromomethane	0	ND		1.0	u
Chloroethane	0	ND		1.0	u
Trichlorofluoromethane	0	ND		1.0	u
Acetone	0	ND		10	u
Freon 113	0	ND		2.0	u
1,1-Dichloroethene	0	ND		0.5	u
Methylene Chloride	0	ND		10	u
Carbon Disulfide	0	ND		0.5	u
MTBE	0	ND		0.5	u
trans-1,2-Dichloroethene	0	ND		0.5	u
Vinyl Acetate	0	ND		10	c+ u
1,1-Dichloroethane	0	ND		0.5	u
2-Butanone	0	ND		10	u
cis-1,2-Dichloroethene	0	ND		0.5	u
2,2-Dichloropropane	0	ND		0.5	u
Chloroform	0	ND		0.5	u
Bromochloromethane	0	ND		0.5	u
1,1,1-Trichloroethane	0	ND		0.5	u
1,1-Dichloropropene	7.354	7.4	-0.240	0.5	u x
Carbon Tetrachloride	7.752	7.8	-0.200	0.5	u x
1,2-Dichloroethane	0	ND		0.5	u
Benzene	0	ND		0.5	u
Trichloroethene	4.889	4.9	-0.397	0.5	u x
1,2-Dichloropropane	0	ND		0.5	u
Bromodichloromethane	0	ND		0.5	u
Dibromomethane	0	ND		0.5	u
4-Methyl-2-Pentanone	1.974	2.0 J	0.194	10	u x
cis-1,3-Dichloropropene	0	ND		0.5	u
Toluene	0	ND		0.5	u
trans-1,3-Dichloropropene	0	ND		0.5	u
1,1,2-Trichloroethane	0	ND		0.5	u
2-Hexanone	0	ND		10	u
1,3-Dichloropropane	0	ND		0.5	u
Tetrachloroethene	0	ND		0.5	c- u **b***
Dibromochloromethane	0	ND		0.5	u
1,2-Dibromoethane	0	ND		0.5	u
Chlorobenzene	0	ND		0.5	u
1,1,1,2-Tetrachloroethane	0	ND		0.5	u
Ethylbenzene	0.07930	ND		0.5	u
m,p-Xylenes	0.03590	ND		0.5	u
o-Xylene	0.03650	ND		0.5	u
Styrene	0	ND		0.5	u
Bromoform	0	ND		1.0	u
Isopropylbenzene	0.03330	ND		0.5	u
1,1,2,2-Tetrachloroethane	0.07760	ND		0.5	u

Analyte	Raw	Result	RTS	RL	Flags
1,2,3-Trichloropropane	0.3118	0.3 J	-0.210	0.5	u x
Propylbenzene	0.03450	ND		0.5	u
Bromobenzene	0	ND		0.5	u
1,3,5-Trimethylbenzene	0.04200	ND		0.5	u
2-Chlorotoluene	0.03390	ND		0.5	u
4-Chlorotoluene	0.03700	ND		0.5	u
tert-Butylbenzene	0.03620	ND		0.5	c- u **b***
1,2,4-Trimethylbenzene	0.03630	ND		0.5	u
sec-Butylbenzene	0	ND		0.5	c- u **b***
para-Isopropyl Toluene	0.03200	ND		0.5	c- u **b***
1,3-Dichlorobenzene	0.03900	ND		0.5	u
1,4-Dichlorobenzene	0.03750	ND		0.5	u
n-Butylbenzene	0.06470	ND		0.5	c- u **b***
1,2-Dichlorobenzene	0.04300	ND		0.5	u
1,2-Dibromo-3-Chloropropane	0	ND		2.0	u
1,2,4-Trichlorobenzene	0.04000	ND		0.5	c- u **b***
Hexachlorobutadiene	0	ND		2.0	c- u **b***
Naphthalene	0	ND		2.0	c- u **b***
1,2,3-Trichlorobenzene	0	ND		0.5	c- u **b***

Surrogate	Raw	Spiked	Result	%Rec	Limits	Flags
Dibromofluoromethane	54.62	50.00	54.62	109	85-115	u
1,2-Dichloroethane-d4	56.09	50.00	56.09	112	70-120	u
Toluene-d8	50.85	50.00	50.85	102	85-120	u
Bromofluorobenzene	53.69	50.00	53.69	107	75-120	u

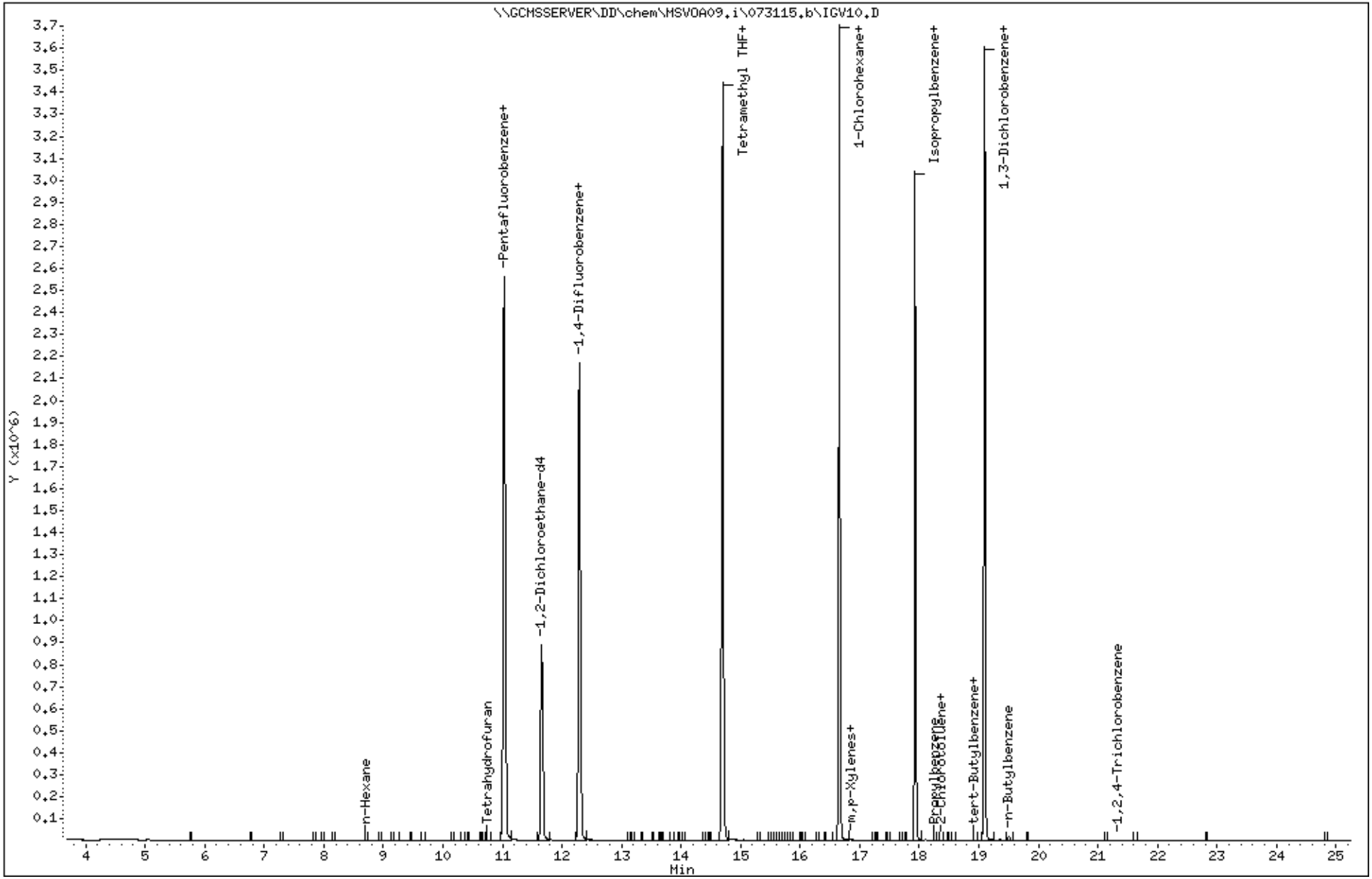
ISTD (ICAL ig713)	ICAL Area	BLANK Area	%Drift	ICAL RT	BLANK RT	Drift
Pentafluorobenzene	987439	1180346	19.54	11.04	11.03	-0.01
1,4-Difluorobenzene	1506110	1963006	30.34	12.30	12.29	-0.01
Chlorobenzene-d5	1326780	1779358	34.11	16.67	16.66	-0.01
1,4-Dichlorobenzene-d4	740445	837186	13.07	19.10	19.09	-0.01

Analyst: KKM Date: 08/06/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV x=false positive

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D
Date : 31-JUL-2015 16:25
Client ID: DYNA P&T
Sample Info: mb,qc797876
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D
Report Date: 31-Jul-2015 16:44

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 31-JUL-2015 16:25 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : mb,qc797876
Misc Info : 225691,1/1
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\826GOX9W.m
Meth Date : 09-Jul-2015 11:11 Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 10
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
18 n-Hexane	57	8.705	8.712	(0.789)	782	0.10737	0.1073
26 Tetrahydrofuran	42	10.745	10.654	(0.974)	327	0.16172	0.1617(a)
* 29 Pentafluorobenzene	168	11.031	11.038	(1.000)	1180346	50.0000	
30 Dibromofluoromethane	113	11.031	11.038	(1.000)	845756	54.6172	54.6171
32 Carbon Tetrachloride	117	11.021	11.255	(0.897)	124796	7.75195	7.7519
33 1,1-Dichloropropene	75	11.021	11.294	(0.897)	129265	7.35438	7.3543
35 1,2-Dichloroethane-d4	65	11.662	11.669	(0.949)	800864	56.0925	56.0925
* 38 1,4-Difluorobenzene	114	12.292	12.300	(1.000)	1963006	50.0000	
39 Trichloroethene	95	12.292	12.723	(1.000)	59391	4.88892	4.8889
45 Tetramethyl THF	43	14.687	14.281	(1.195)	17900	0.66539	0.6653
47 4-Methyl-2-Pentanone	43	14.687	14.517	(1.195)	18073	1.97372	1.9737
48 Toluene-d8	98	14.697	14.704	(0.882)	2491996	50.8458	50.8458
57 1-Chlorohexane	91	16.658	16.567	(1.000)	4056	0.29031	0.2903(a)
* 58 Chlorobenzene-d5	117	16.658	16.665	(1.000)	1779358	50.0000	
60 Ethylbenzene	91	16.658	16.744	(1.000)	4056	0.07929	0.0792(a)
62 m,p-Xylenes	106	16.875	16.882	(1.013)	641	0.03591	0.0359(a)

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D
Report Date: 31-Jul-2015 16:44

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
63 o-Xylene	106	16.875	17.336	(1.013)	641	0.03651	0.0365(a)
66 Isopropylbenzene	105	17.930	17.690	(0.939)	1366	0.03327	0.0332(a)
67 Cyclohexanone_	55	17.930	17.937	(0.939)	3639	2.83309	2.8330
68 Bromofluorobenzene	95	17.930	17.937	(0.939)	888083	53.6854	53.6853
69 1,1,2,2-Tetrachloroethane	83	17.930	18.075	(0.939)	635	0.07759	0.0775(a)
70 Propylbenzene	91	18.107	18.104	(0.948)	1721	0.03454	0.0345(a)
72 1,2,3-Trichloropropane	110	17.920	18.154	(0.939)	596	0.31185	0.3118(a)
73 2-Chlorotoluene	91	18.373	18.262	(0.962)	1149	0.03394	0.0339(a)
74 1,3,5-Trimethylbenzene	105	17.930	18.272	(0.939)	1366	0.04199	0.0419(a)
75 4-Chlorotoluene	91	18.373	18.370	(0.962)	1149	0.03700	0.0369(a)
76 tert-Butylbenzene	119	18.935	18.597	(0.992)	1021	0.03616	0.0361(a)
77 1,2,4-Trimethylbenzene	105	18.817	18.656	(0.986)	1170	0.03630	0.0362(a)
79 para-Isopropyl Toluene	119	18.935	18.942	(0.992)	1021	0.03204	0.0320(a)
80 1,3-Dichlorobenzene	146	19.112	19.031	(1.001)	707	0.03902	0.0390(a)
* 81 1,4-Dichlorobenzene-d4	152	19.093	19.100	(1.000)	837186	50.0000	
82 1,4-Dichlorobenzene	146	19.112	19.129	(1.001)	707	0.03749	0.0374(a)
83 n-Butylbenzene	91	19.359	19.356	(1.014)	1912	0.06473	0.0647(a)
84 1,2-Dichlorobenzene	146	19.112	19.533	(1.001)	707	0.04299	0.0429(a)
86 1,2,4-Trichlorobenzene	180	21.340	21.337	(1.118)	324	0.03997	0.0399(a)

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

[Carbon Tetrachloride; 7.8; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D

Date : 31-JUL-2015 16:25

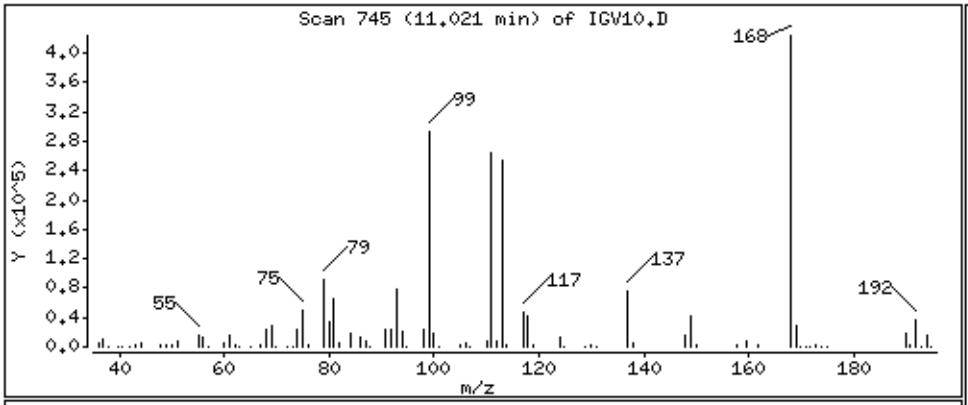
Client ID: DYNA P&T | Instrument: MSVOA09.i

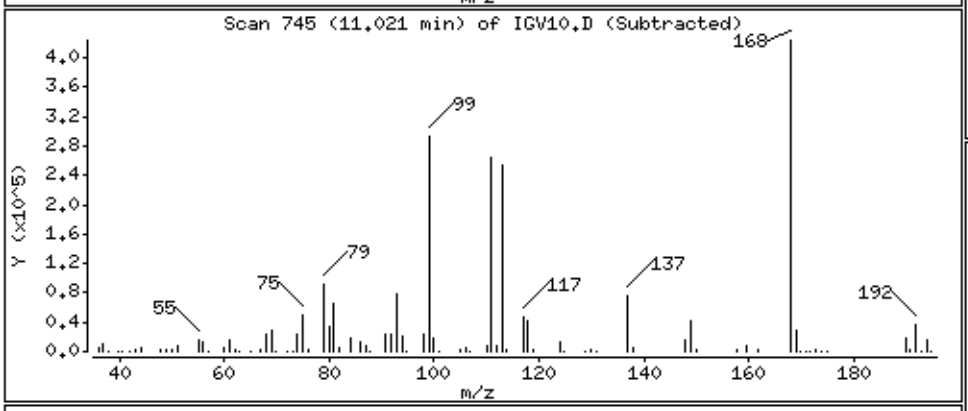
Sample Info: mb,qc797876

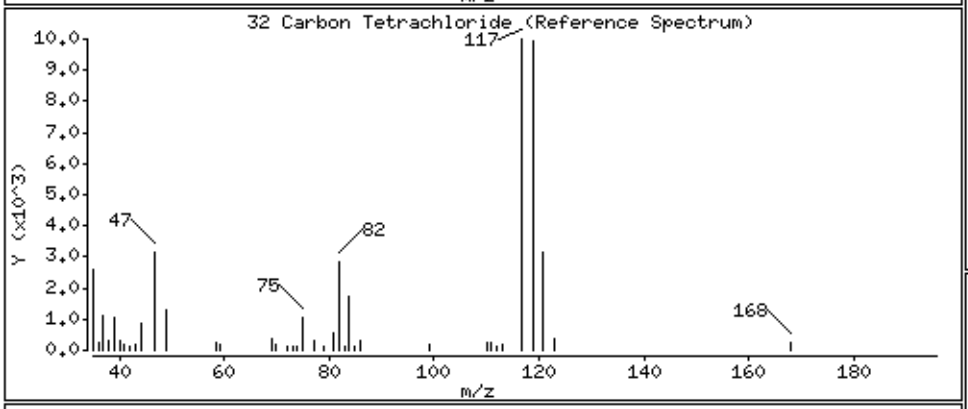
Purge Volume: 5.0 | Operator: VOC

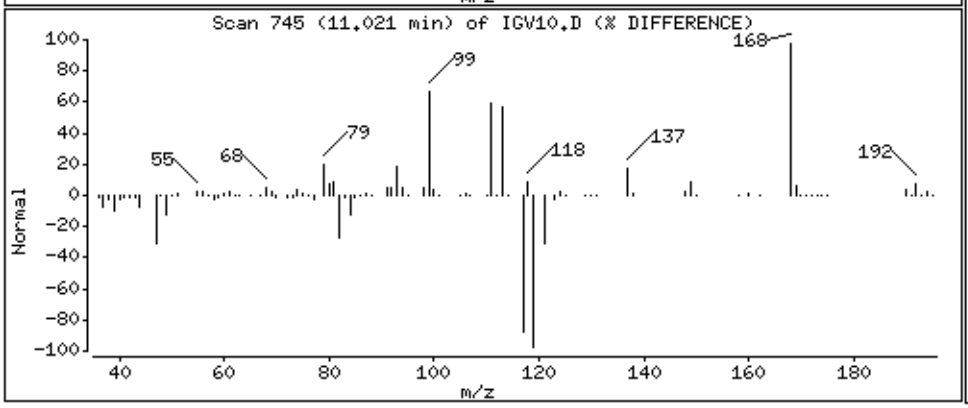
Column phase: RTx Volatiles | Column diameter: 0.25

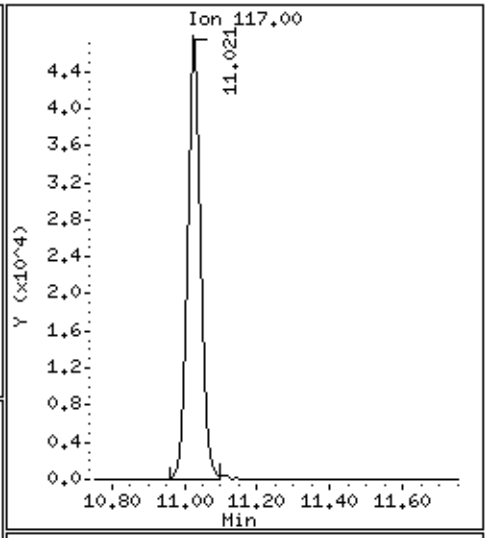
32 Carbon Tetrachloride | Concentration: 7.7519 UG/L

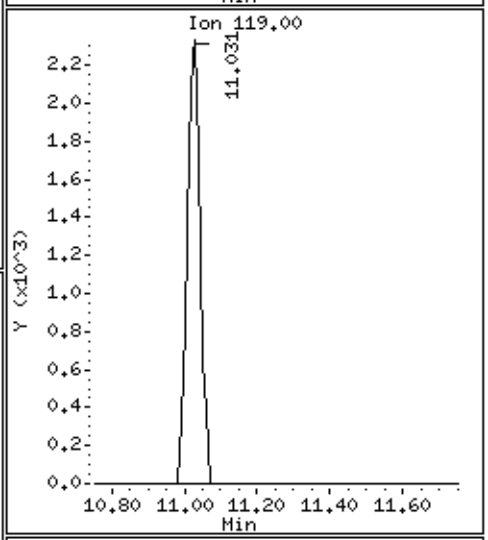


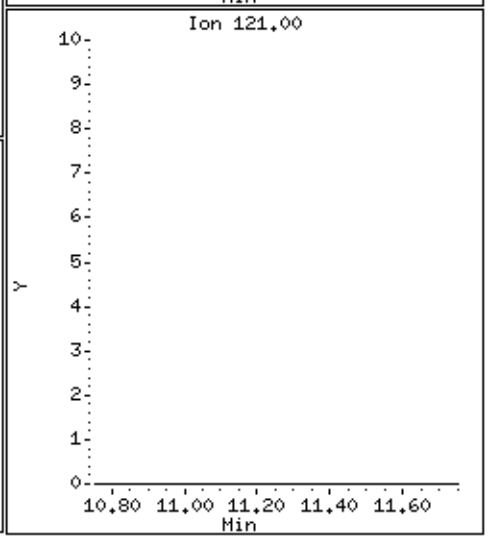












[1,1-Dichloropropene; 7.4; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D

Date : 31-JUL-2015 16:25

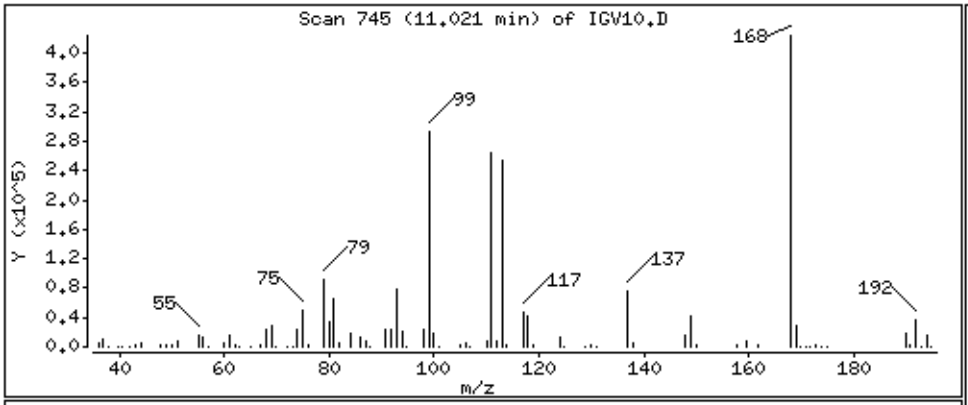
Client ID: DYNA P&T | Instrument: MSVOA09.i

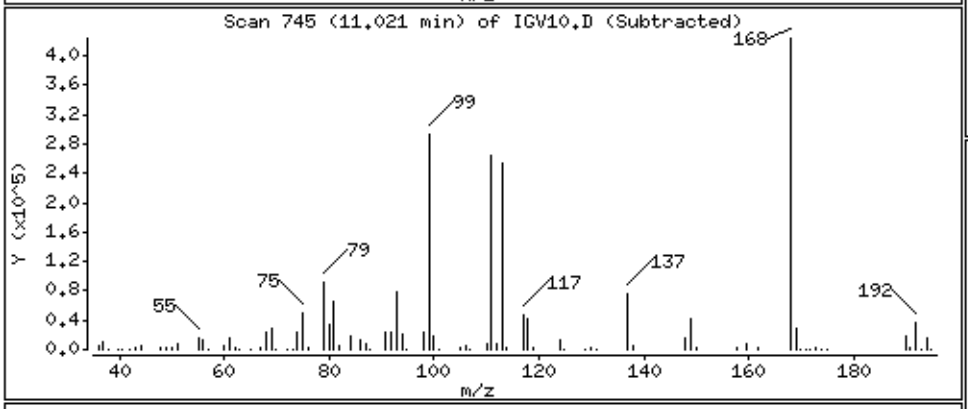
Sample Info: mb,qc797876

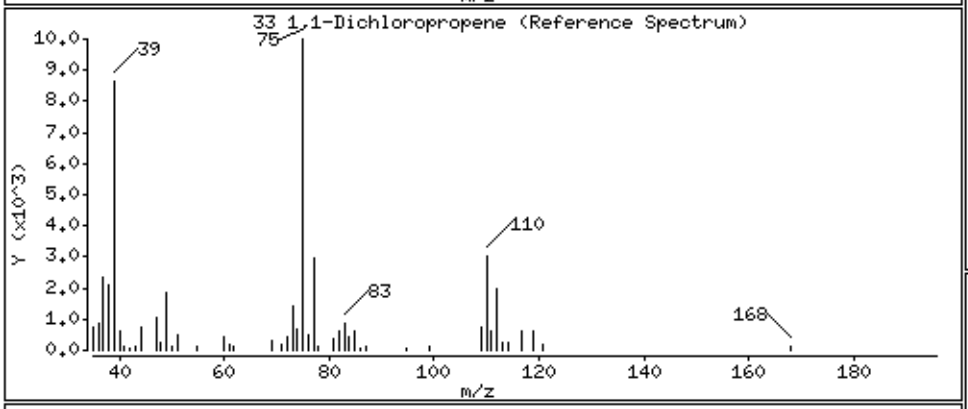
Purge Volume: 5.0 | Operator: VOC

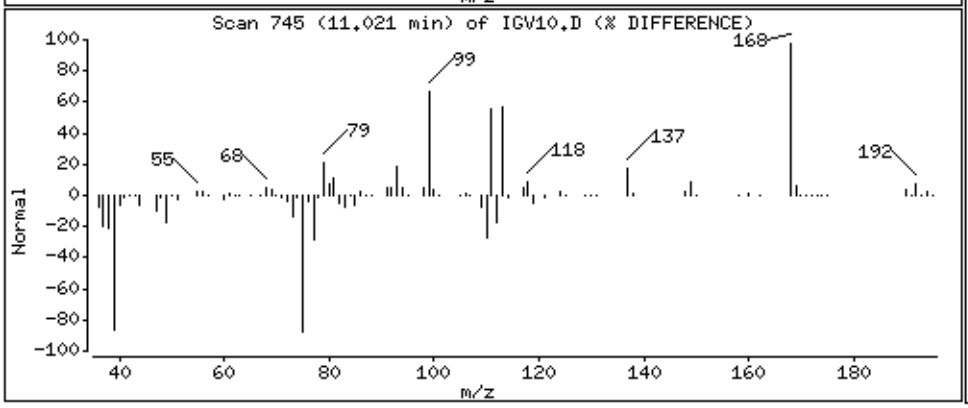
Column phase: RTx Volatiles | Column diameter: 0.25

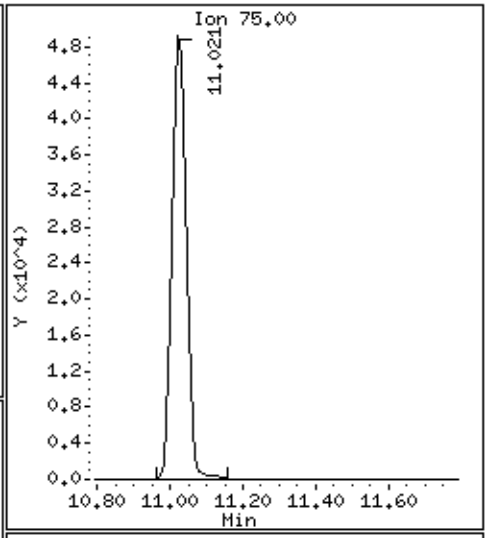
33 1,1-Dichloropropene | Concentration: 7.3543 UG/L

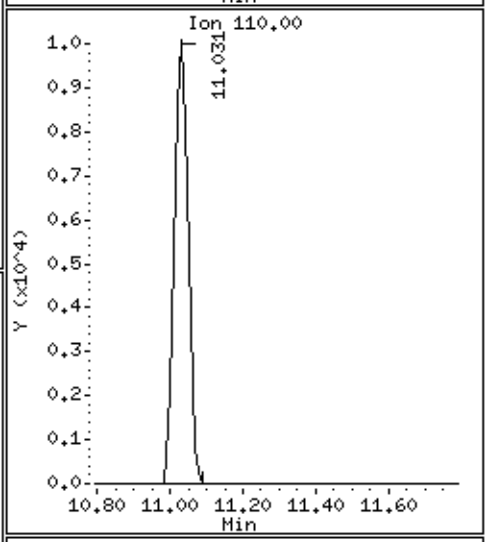


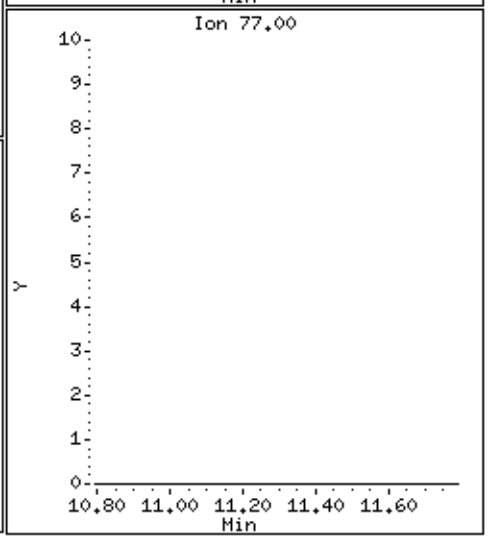












[Trichloroethene; 4.9; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D

Date : 31-JUL-2015 16:25

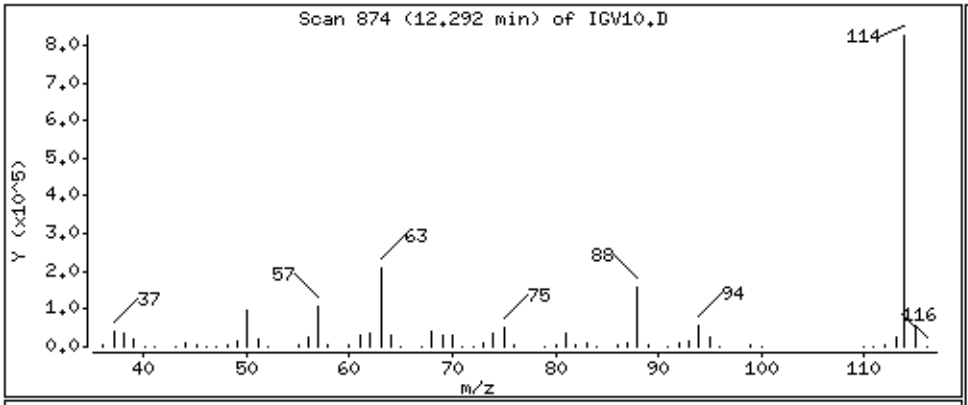
Client ID: DYNA P&T | Instrument: MSVOA09.i

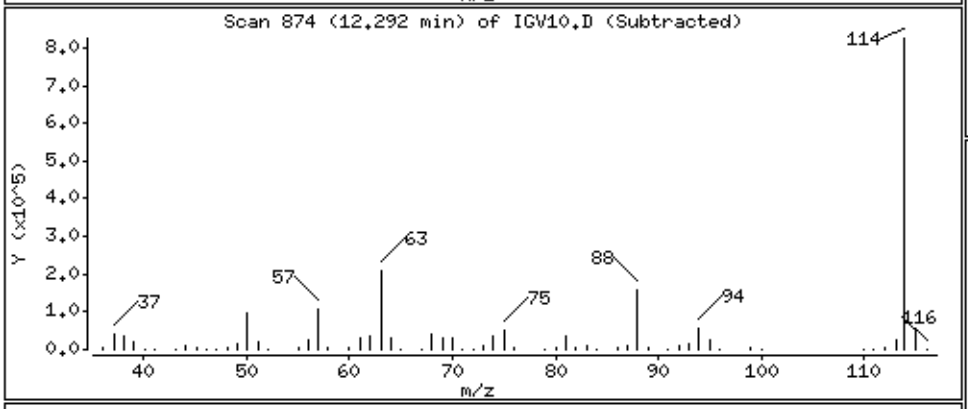
Sample Info: mb,qc797876

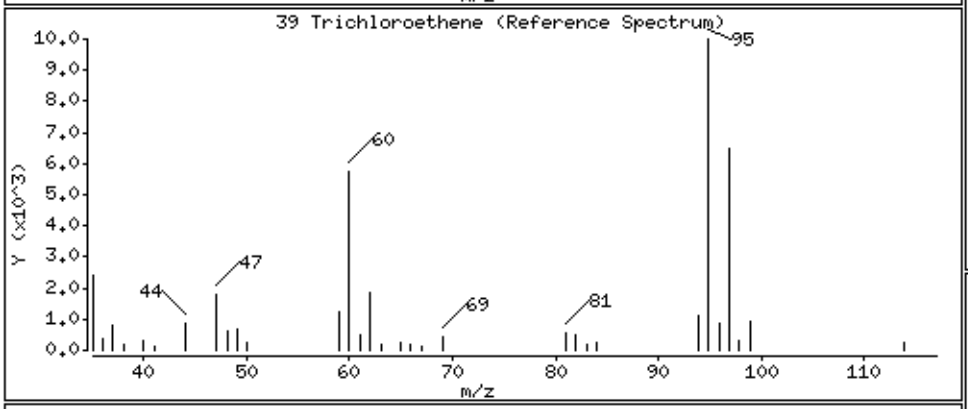
Purge Volume: 5.0 | Operator: VOC

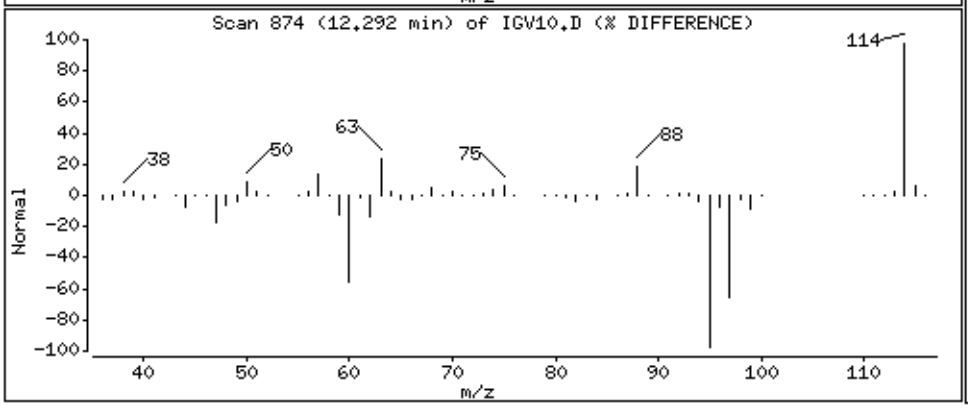
Column phase: RTx Volatiles | Column diameter: 0.25

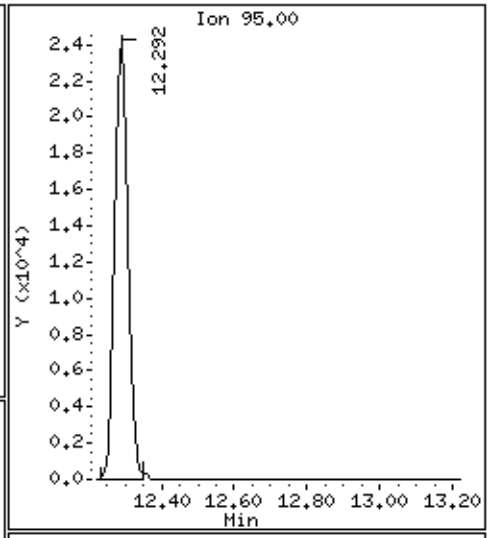
39 Trichloroethene | Concentration: 4.8889 UG/L

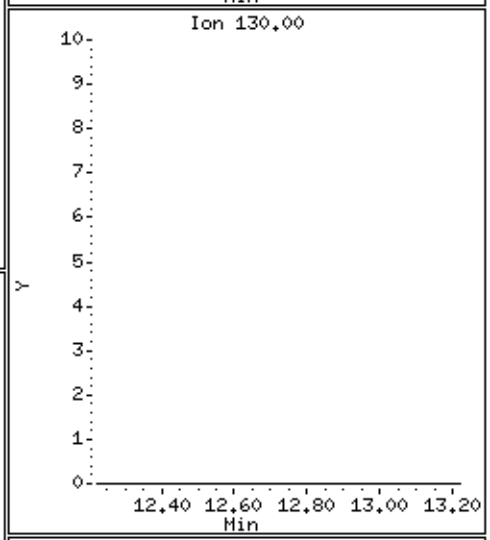


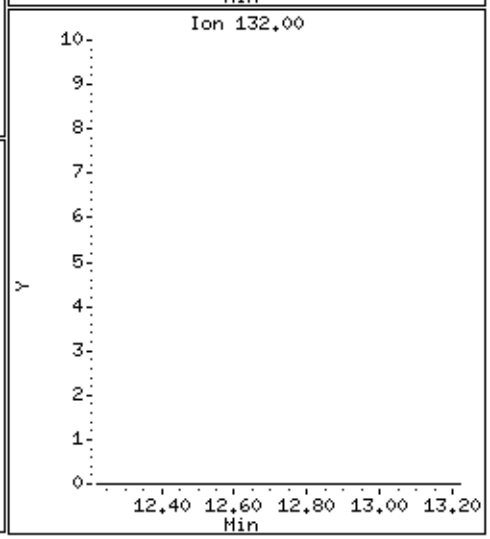












[4-Methyl-2-Pentanone; 2.0 J; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D

Date : 31-JUL-2015 16:25

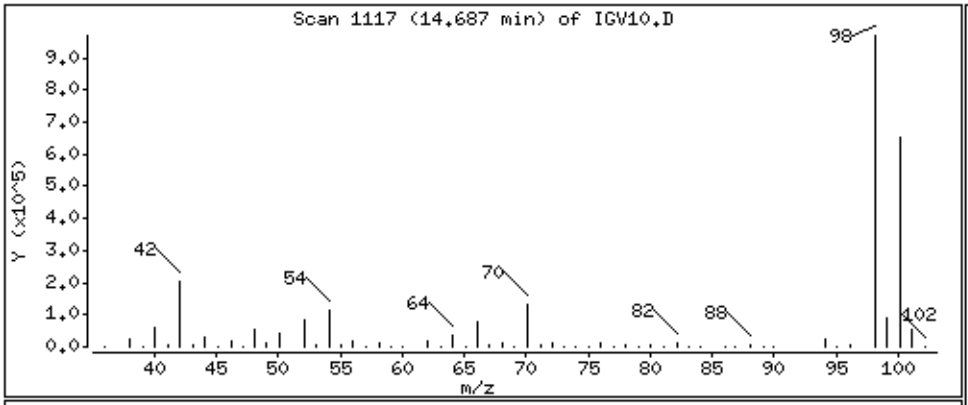
Client ID: DYNA P&T | Instrument: MSVOA09.i

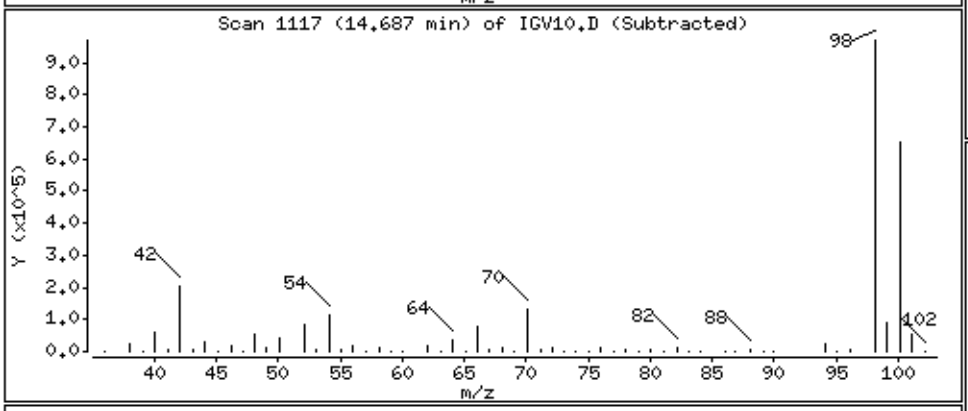
Sample Info: mb,qc797876

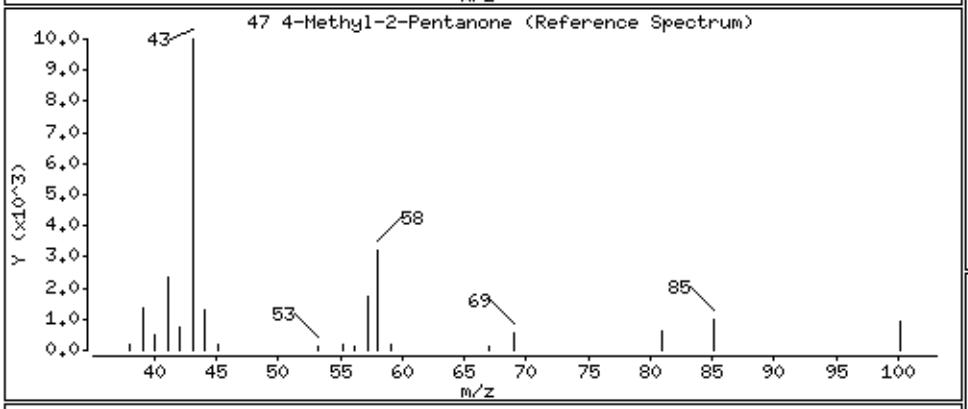
Purge Volume: 5.0 | Operator: VOC

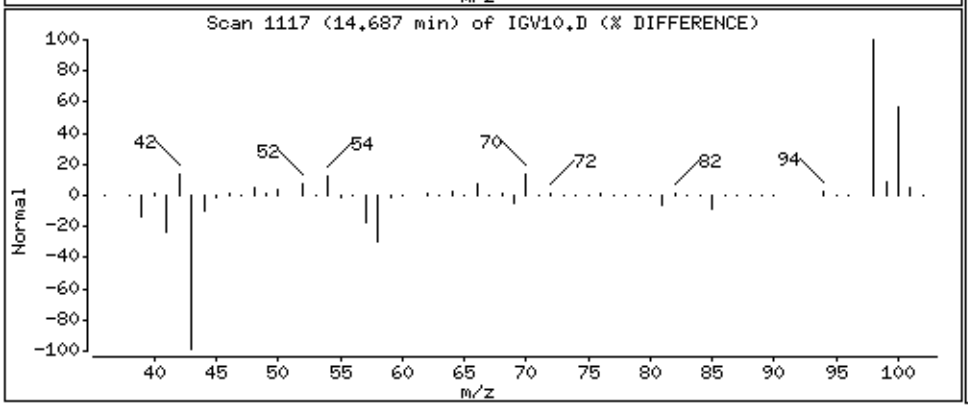
Column phase: RTx Volatiles | Column diameter: 0.25

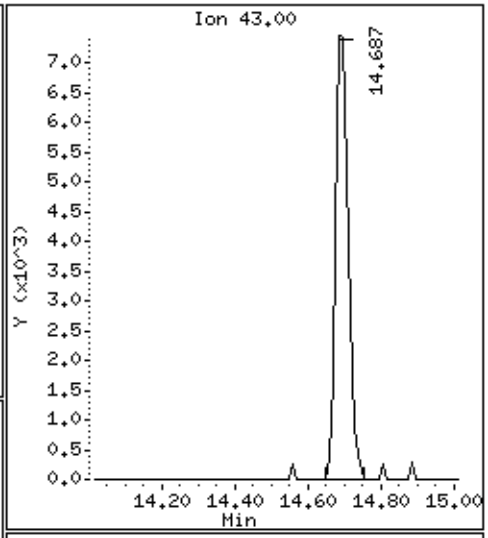
47 4-Methyl-2-Pentanone | Concentration: 1.9737 UG/L

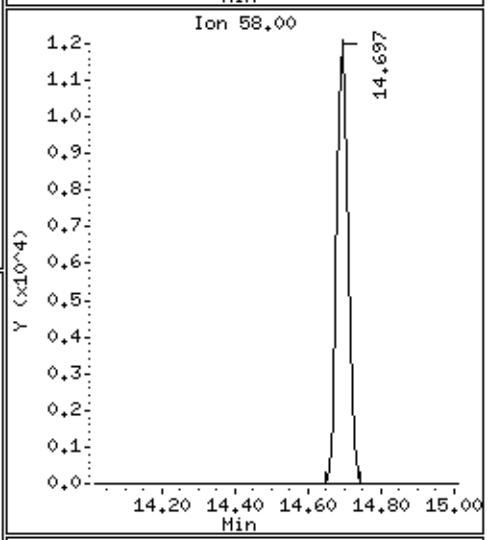


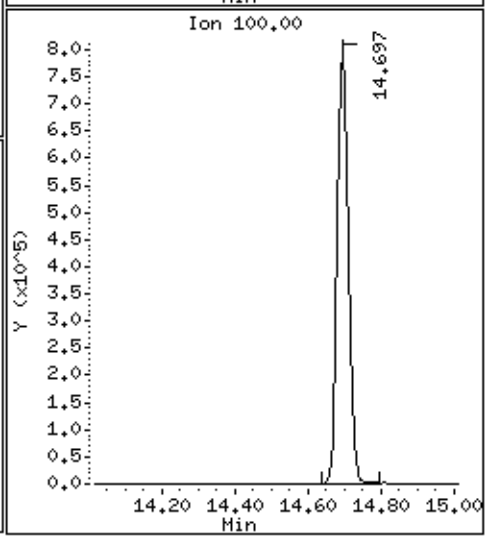












[1,2,3-Trichloropropane; 0.3 J; FP; u]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV10.D

Date : 31-JUL-2015 16:25

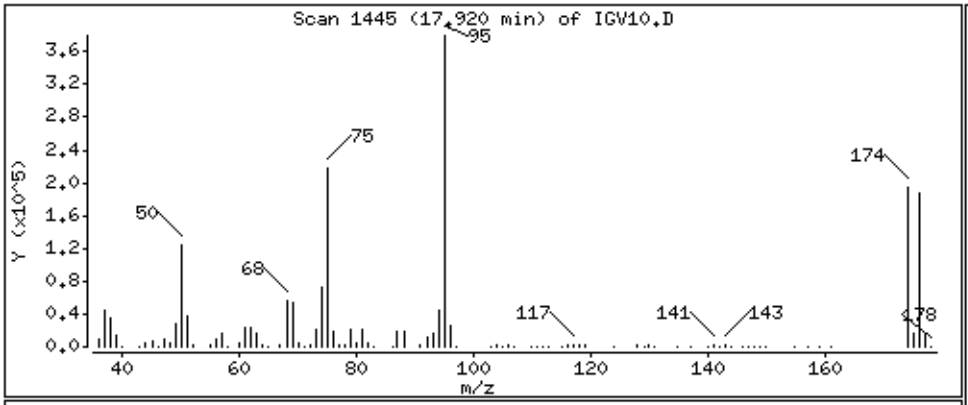
Client ID: DYNA P&T | Instrument: MSVOA09.i

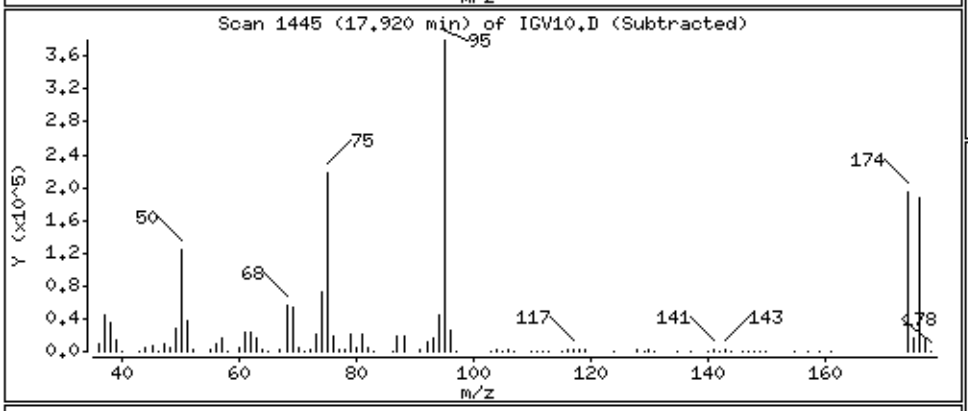
Sample Info: mb,qc797876

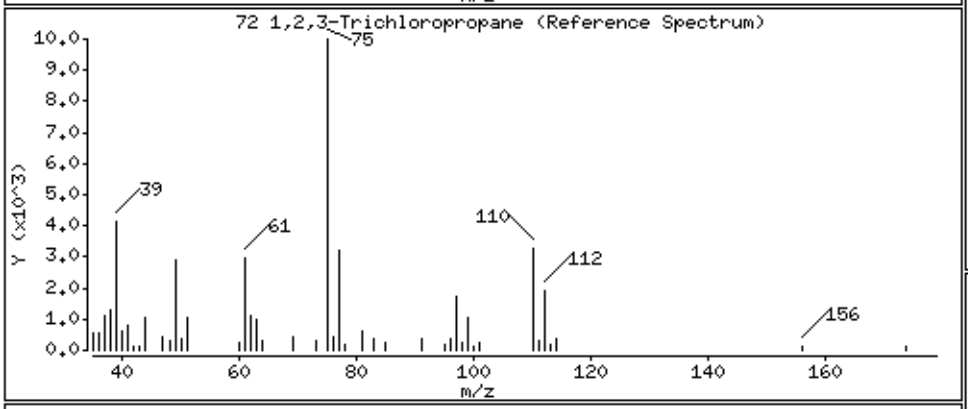
Purge Volume: 5.0 | Operator: VOC

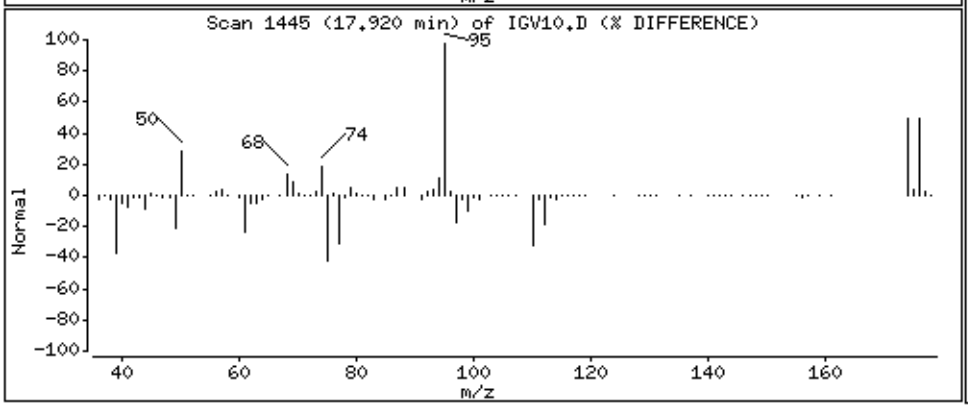
Column phase: RTx Volatiles | Column diameter: 0.25

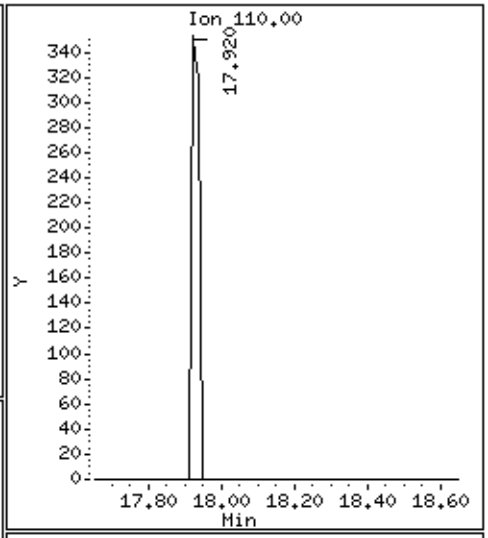
72 1,2,3-Trichloropropane | Concentration: 0.3118 UG/L

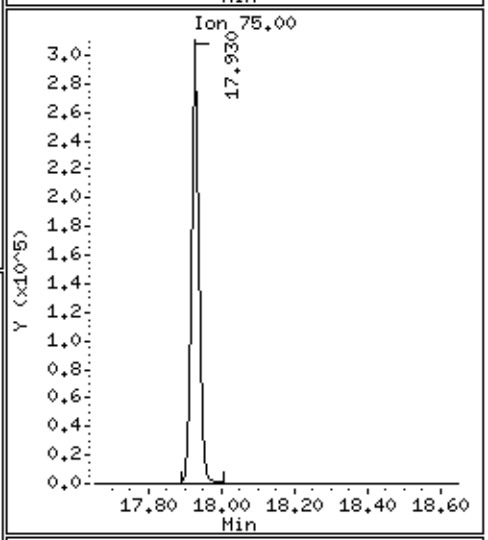


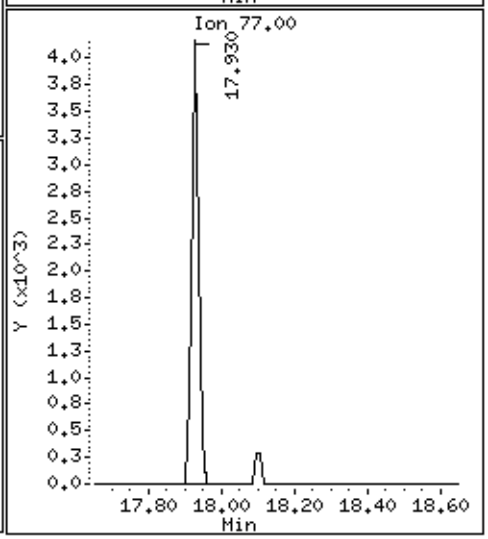












CURTIS & TOMPKINS SPIKE USER REPORT FOR 268557 MSVOA Water
EPA 8260C

Type : BS
Inst : MSVOA08
Seqnum : 475304292010.3
File : hgu10
IDF : 1.0
Lab ID : QC797679
Matrix : Water
Batch : 225639
Time : 30-JUL-2015 13:24
Cal : 475253923002
Caltype : WATER
Units : ug/L

Type : BSD
Inst : MSVOA08
Seqnum : 475304292011.3
File : hgu11
IDF : 1.0
Lab ID : QC797680
Matrix : Water
Batch : 225639
Time : 30-JUL-2015 13:58
Cal : 475253923002
Caltype : WATER

BS:
BSD:

Analyte	Spiked	BS Raw	BS Result	%Rec	BSD Raw	BSD Result	%Rec	Limits	RPD	Lim	Flags
Freon 12	10.00	10.71	10.71	107	9.888	9.888	99	30-155	8	30	u v+ **b***
Chloromethane	10.00	12.92	12.92	**129***	11.87	11.87	119	40-125	9	30	u
Vinyl Chloride	10.00	11.89	11.89	119	11.63	11.63	116	50-145	2	30	u
Bromomethane	10.00	11.97	11.97	120	11.08	11.08	111	30-145	8	30	u
Chloroethane	10.00	10.81	10.81	108	9.696	9.696	97	60-135	11	30	u
Trichlorofluoromethane	10.00	9.518	9.518	95	8.988	8.988	90	60-145	6	30	u
Acetone	12.50	9.862	9.862	79	9.657	9.657	77	40-140	2	30	u
Freon 113	12.50	10.63	10.63	85	10.24	10.24	82	61-138	4	30	c- u v- **b***
1,1-Dichloroethene	12.50	11.72	11.72	94	11.24	11.24	90	70-130	4	30	u
Methylene Chloride	12.50	13.02	13.02	104	12.57	12.57	101	55-140	3	30	u
Carbon Disulfide	12.50	11.54	11.54	92	11.06	11.06	88	35-160	4	30	u v- **b***
MTBE	12.50	12.21	12.21	98	11.95	11.95	96	65-125	2	30	u
trans-1,2-Dichloroethene	12.50	12.90	12.90	103	12.18	12.18	97	60-140	6	30	u
Vinyl Acetate	12.50	19.13	19.13	153	19.45	19.45	156	60-194	2	30	c+ u v+ **b***
1,1-Dichloroethane	12.50	13.18	13.18	105	12.43	12.43	99	70-135	6	30	u
2-Butanone	12.50	11.47	11.47	92	11.46	11.46	92	30-150	0	30	u
cis-1,2-Dichloroethene	12.50	12.94	12.94	104	12.60	12.60	101	70-125	3	30	u
2,2-Dichloropropane	12.50	15.15	15.15	121	13.91	13.91	111	70-135	8	30	u
Chloroform	12.50	13.73	13.73	110	13.28	13.28	106	65-135	3	30	u
Bromochloromethane	12.50	12.52	12.52	100	12.35	12.35	99	65-130	1	30	u
1,1,1-Trichloroethane	12.50	13.47	13.47	108	12.84	12.84	103	65-130	5	30	u
1,1-Dichloropropene	12.50	12.78	12.78	102	12.49	12.49	100	75-130	2	30	u
Carbon Tetrachloride	12.50	13.61	13.61	109	13.30	13.30	106	65-140	2	30	u
1,2-Dichloroethane	12.50	13.39	13.39	107	12.95	12.95	104	70-130	3	30	u
Benzene	12.50	13.14	13.14	105	12.58	12.58	101	80-120	4	30	u
Trichloroethene	12.50	12.66	12.66	101	12.34	12.34	99	70-125	3	30	u
1,2-Dichloropropane	12.50	12.04	12.04	96	11.95	11.95	96	75-125	1	30	u
Bromodichloromethane	12.50	12.97	12.97	104	12.37	12.37	99	75-120	5	30	u
Dibromomethane	12.50	12.15	12.15	97	12.09	12.09	97	75-125	1	30	u
4-Methyl-2-Pentanone	12.50	11.44	11.44	92	11.38	11.38	91	60-135	1	30	u
cis-1,3-Dichloropropene	12.50	12.33	12.33	99	12.36	12.36	99	70-130	0	30	u
Toluene	12.50	13.17	13.17	105	12.70	12.70	102	75-120	4	30	u
trans-1,3-Dichloropropene	12.50	11.99	11.99	96	12.14	12.14	97	55-140	1	30	u
1,1,2-Trichloroethane	12.50	12.56	12.56	101	12.71	12.71	102	75-125	1	30	u
2-Hexanone	12.50	11.91	11.91	95	11.66	11.66	93	55-130	2	30	u
1,3-Dichloropropane	12.50	12.82	12.82	103	12.08	12.08	97	75-125	6	30	u
Tetrachloroethene	12.50	13.80	13.80	110	13.07	13.07	105	45-150	5	30	u

Analyte	Spiked	BS Raw	BS Result	%Rec	BSD Raw	BSD Result	%Rec	Limits	RPD	Lim	Flags
Dibromochloromethane	12.50	12.28	12.28	98	11.61	11.61	93	60-135	6	30	u
1,2-Dibromoethane	12.50	12.47	12.47	100	12.36	12.36	99	80-120	1	30	u
Chlorobenzene	12.50	13.26	13.26	106	13.01	13.01	104	80-120	2	30	u
1,1,1,2-Tetrachloroethane	12.50	12.97	12.97	104	12.41	12.41	99	80-130	4	30	u
Ethylbenzene	12.50	14.01	14.01	112	13.00	13.00	104	75-125	7	30	u
m,p-Xylenes	25.00	26.00	26.00	104	25.91	25.91	104	75-130	0	30	u
o-Xylene	12.50	13.26	13.26	106	13.31	13.31	106	80-120	0	30	u
Styrene	12.50	12.87	12.87	103	13.38	13.38	107	65-135	4	30	u
Bromoform	12.50	11.34	11.34	91	11.34	11.34	91	70-130	0	30	u
Isopropylbenzene	12.50	12.87	12.87	103	13.27	13.27	106	75-125	3	30	u
1,1,2,2-Tetrachloroethane	12.50	11.93	11.93	95	12.56	12.56	100	65-130	5	30	u
1,2,3-Trichloropropane	12.50	11.83	11.83	95	12.00	12.00	96	75-125	1	30	u
Propylbenzene	12.50	13.04	13.04	104	13.52	13.52	108	70-130	4	30	u
Bromobenzene	12.50	12.93	12.93	103	13.30	13.30	106	75-125	3	30	u
1,3,5-Trimethylbenzene	12.50	14.33	14.33	115	13.87	13.87	111	75-130	3	30	u
2-Chlorotoluene	12.50	14.05	14.05	112	13.25	13.25	106	75-125	6	30	u
4-Chlorotoluene	12.50	14.25	14.25	114	13.87	13.87	111	75-130	3	30	u
tert-Butylbenzene	12.50	13.11	13.11	105	12.99	12.99	104	70-130	1	30	u
1,2,4-Trimethylbenzene	12.50	13.41	13.41	107	13.41	13.41	107	75-130	0	30	u
sec-Butylbenzene	12.50	12.84	12.84	103	13.09	13.09	105	70-125	2	30	u
para-Isopropyl Toluene	12.50	13.38	13.38	107	12.98	12.98	104	75-130	3	30	u
1,3-Dichlorobenzene	12.50	12.74	12.74	102	13.17	13.17	105	75-125	3	30	u
1,4-Dichlorobenzene	12.50	12.91	12.91	103	13.41	13.41	107	75-125	4	30	u
n-Butylbenzene	12.50	13.79	13.79	110	13.53	13.53	108	70-135	2	30	u
1,2-Dichlorobenzene	12.50	13.12	13.12	105	13.31	13.31	106	70-120	1	30	u
1,2-Dibromo-3-Chloropropane	12.50	10.87	10.87	87	10.99	10.99	88	50-130	1	30	u
1,2,4-Trichlorobenzene	12.50	12.06	12.06	96	11.94	11.94	95	65-135	1	30	u
Hexachlorobutadiene	12.50	12.52	12.52	100	12.46	12.46	100	50-140	0	30	u
Naphthalene	12.50	10.14	10.14	81	10.64	10.64	85	55-140	5	30	u
1,2,3-Trichlorobenzene	12.50	12.01	12.01	96	12.19	12.19	98	55-140	1	30	u
Dibromofluoromethane	50.00	51.09	51.09	102	51.26	51.26	103	85-115			u
1,2-Dichloroethane-d4	50.00	54.83	54.83	110	53.91	53.91	108	70-120			u
Toluene-d8	50.00	50.84	50.84	102	50.25	50.25	100	85-120			u
Bromofluorobenzene	50.00	51.00	51.00	102	48.00	48.00	96	75-120			u

ISTD (ICAL hfp14)	ICAL Area	BS Area	%Drift	ICAL RT	BS RT	Drift
Pentafluorobenzene	1032422	1532749	48.46	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	2447306	48.54	11.26	11.24	-0.02
Chlorobenzene-d5	1426621	2019881	41.58	15.76	15.74	-0.02
1,4-Dichlorobenzene-d4	722873	1093012	51.20	18.61	18.59	-0.02

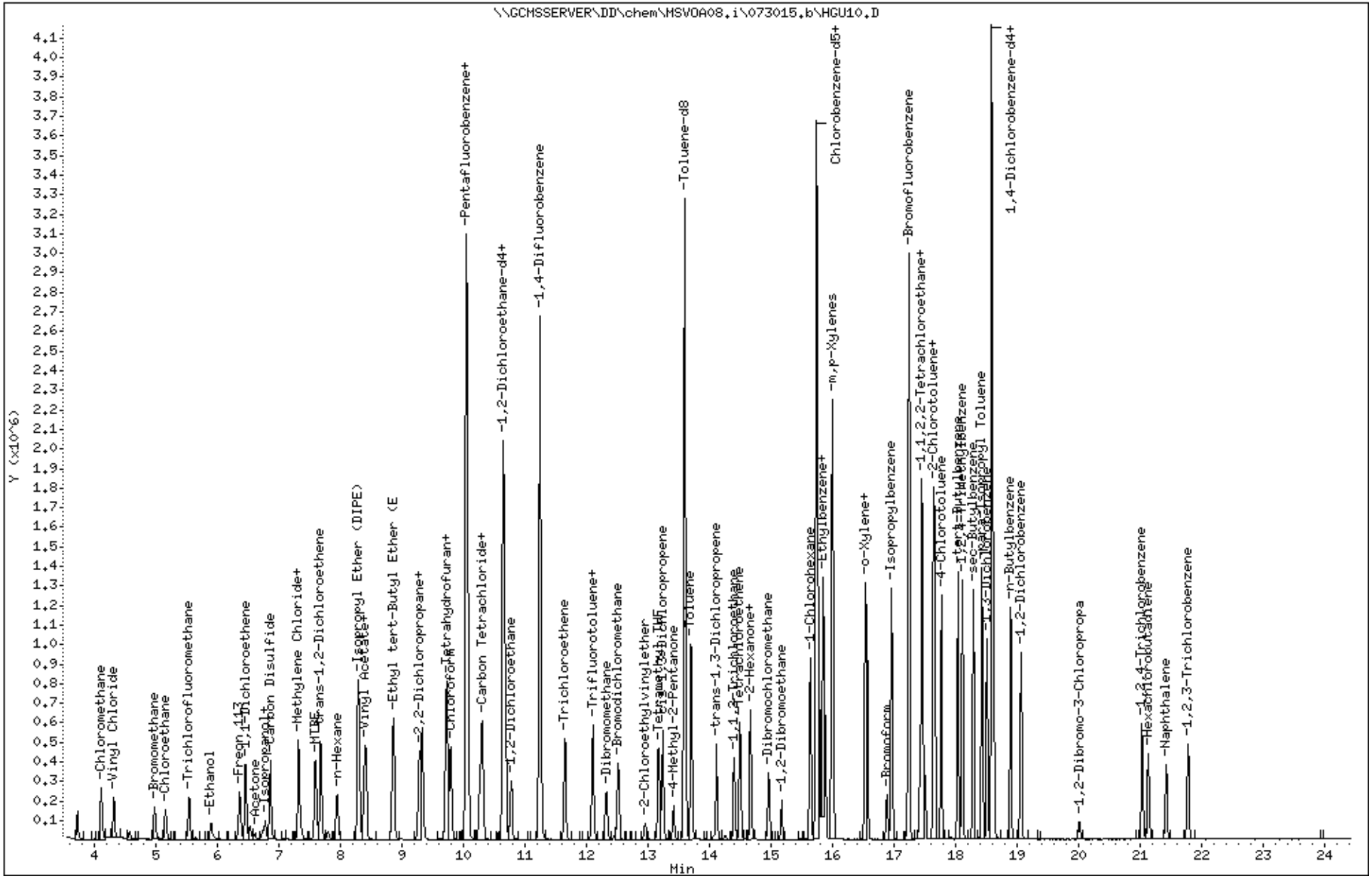
ISTD (ICAL hfp14)	ICAL Area	BSD Area	%Drift	ICAL RT	BSD RT	Drift
Pentafluorobenzene	1032422	1541975	49.36	10.06	10.04	-0.02
1,4-Difluorobenzene	1647573	2417296	46.72	11.26	11.25	-0.01
Chlorobenzene-d5	1426621	2051568	43.81	15.76	15.74	-0.02
1,4-Dichlorobenzene-d4	722873	1078812	49.24	18.61	18.60	-0.01

Analyst: KKM Date: 08/06/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU10.D
Date : 30-JUL-2015 13:24
Client ID: DYNA P&T
Sample Info: BS,QC797679,225693,S27558,.005/100,S27556,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU10.D
Report Date: 30-Jul-2015 13:54

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU10.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 13:24 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : BS,QC797679,225693,S27558,.005/100,S27556,
Misc Info : .005/100,S27533,.005/100,S26064,.005/100
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 10 QC Sample: BS
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.719	3.718	(0.370)	154082	10.7146	10.7146
2 Chloromethane	50	4.103	4.103	(0.408)	316290	12.9223	12.9222
3 Vinyl Chloride	62	4.310	4.310	(0.429)	241999	11.8853	11.8853
4 Bromomethane	94	4.981	4.970	(0.496)	130943	11.9680	11.9679
5 Chloroethane	64	5.159	5.148	(0.513)	158718	10.8104	10.8104
6 Trichlorofluoromethane	101	5.533	5.533	(0.551)	218770	9.51750	9.5174
7 Ethanol	45	5.898	5.888	(0.587)	155940	1090.15	1090.1486
8 Freon 113	101	6.362	6.351	(0.633)	142758	10.6335	10.6334
9 1,1-Dichloroethene	96	6.460	6.460	(0.643)	167090	11.7166	11.7165
10 Acetone	43	6.608	6.598	(0.658)	53287	9.86223	9.8622
11 Isopropanol	45	6.737	6.726	(0.670)	80722	108.997	108.9969
12 Iodomethane	142	6.776	6.775	(0.674)	132681	17.4697	17.4697
13 Carbon Disulfide	76	6.855	6.854	(0.682)	678917	11.5367	11.5366
14 Methylene Chloride	84	7.319	7.318	(0.728)	234801	13.0186	13.0186
15 tert-Butyl Alcohol (TBA)	59	7.358	7.357	(0.732)	52557	54.8900	54.8900
16 MTBE	73	7.595	7.584	(0.756)	490387	12.2125	12.2125

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU10.D
Report Date: 30-Jul-2015 13:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	7.683	7.673	(0.764)	209181	12.8980	12.8980
	18 n-Hexane	57	7.940	7.939	(0.790)	126972	21.0346	21.0345
	19 Isopropyl Ether (DIPE)	45	8.295	8.284	(0.825)	1090502	12.8835	12.8834
	20 Vinyl Acetate	43	8.384	8.383	(0.834)	473826	19.1311	19.1311
	21 1,1-Dichloroethane	63	8.413	8.403	(0.837)	475849	13.1778	13.1777
	22 Ethyl tert-Butyl Ether (ETBE)	59	8.857	8.847	(0.881)	761640	12.6644	12.6643
	23 2,2-Dichloropropane	77	9.281	9.281	(0.923)	340195	15.1475	15.1475
	24 2-Butanone	43	9.321	9.320	(0.927)	78868	11.4657	11.4656
	25 cis-1,2-Dichloroethene	96	9.331	9.330	(0.928)	235235	12.9412	12.9411
	26 Tetrahydrofuran	42	9.715	9.714	(0.967)	414409	112.571	112.5714
	27 Bromochloromethane	128	9.725	9.724	(0.968)	106842	12.5190	12.5190
	28 Chloroform	83	9.794	9.784	(0.974)	424142	13.7309	13.7308
*	29 Pentafluorobenzene	168	10.051	10.040	(1.000)	1532749	50.0000	
	30 Dibromofluoromethane	113	10.060	10.050	(1.001)	850261	51.0885	51.0885
	31 1,1,1-Trichloroethane	97	10.060	10.050	(1.001)	297819	13.4683	13.4683
	32 Carbon Tetrachloride	117	10.268	10.267	(0.913)	255821	13.6137	13.6136
	33 1,1-Dichloropropene	75	10.307	10.306	(0.917)	310730	12.7837	12.7836
	34 1,2-Dichloroethane-d4	65	10.652	10.651	(0.947)	931553	54.8319	54.8318
	35 Methyl tert-Amyl Ether (TAME)	73	10.682	10.671	(0.950)	549711	11.6245	11.6244
	36 Benzene	78	10.642	10.642	(0.946)	907898	13.1422	13.1421(R)
	37 1,2-Dichloroethane	62	10.780	10.770	(0.959)	311268	13.3917	13.3917
*	38 1,4-Difluorobenzene	114	11.244	11.233	(1.000)	2447306	50.0000	
	39 Trichloroethene	95	11.648	11.648	(1.036)	213839	12.6613	12.6612
	40 Trifluorotoluene	146	12.082	12.082	(1.075)	3481	0.13976	0.1397(a)
	41 1,2-Dichloropropane	63	12.102	12.101	(1.076)	257908	12.0398	12.0397
	42 Dibromomethane	93	12.329	12.318	(1.096)	125090	12.1463	12.1462
	43 Bromodichloromethane	83	12.516	12.506	(1.113)	307635	12.9736	12.9736
	44 2-Chloroethylvinylether	63	12.960	12.950	(1.153)	45025	9.42982	9.4298
	45 Tetramethyl THF	43	13.167	13.166	(1.171)	437048	10.1705	10.1704
	46 cis-1,3-Dichloropropene	75	13.246	13.236	(1.178)	355408	12.3253	12.3252
	47 4-Methyl-2-Pentanone	43	13.414	13.413	(1.193)	180856	11.4400	11.4400
	48 Toluene-d8	98	13.601	13.591	(0.864)	2501724	50.8427	50.8426
	49 Toluene	92	13.710	13.699	(0.871)	489964	13.1740	13.1740(R)
	50 trans-1,3-Dichloropropene	75	14.114	14.113	(0.897)	270193	11.9854	11.9854
	51 1,1,2-Trichloroethane	85	14.400	14.399	(0.915)	86469	12.5647	12.5646
	52 Tetrachloroethene	166	14.499	14.498	(0.921)	202416	13.7993	13.7992
	53 2-Hexanone	43	14.666	14.666	(0.932)	125672	11.9141	11.9141
	54 1,3-Dichloropropane	76	14.666	14.666	(0.932)	289378	12.8158	12.8158
	55 Dibromochloromethane	129	14.962	14.962	(0.951)	194338	12.2802	12.2802
	56 1,2-Dibromoethane	107	15.169	15.169	(0.964)	156313	12.4656	12.4656
	57 1-Chlorohexane	91	15.643	15.642	(0.994)	275393	12.5993	12.5992
*	58 Chlorobenzene-d5	117	15.741	15.741	(1.000)	2019881	50.0000	
	59 Chlorobenzene	112	15.781	15.780	(1.002)	553912	13.2592	13.2591(R)
	60 Ethylbenzene	91	15.850	15.839	(1.007)	988719	14.0055	14.0054
	61 1,1,1,2-Tetrachloroethane	131	15.880	15.879	(1.009)	197586	12.9688	12.9687
	62 m,p-Xylenes	106	15.998	15.997	(1.016)	673392	25.9955	25.9954
	63 o-Xylene	106	16.540	16.530	(1.051)	349966	13.2555	13.2554

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU10.D
Report Date: 30-Jul-2015 13:54

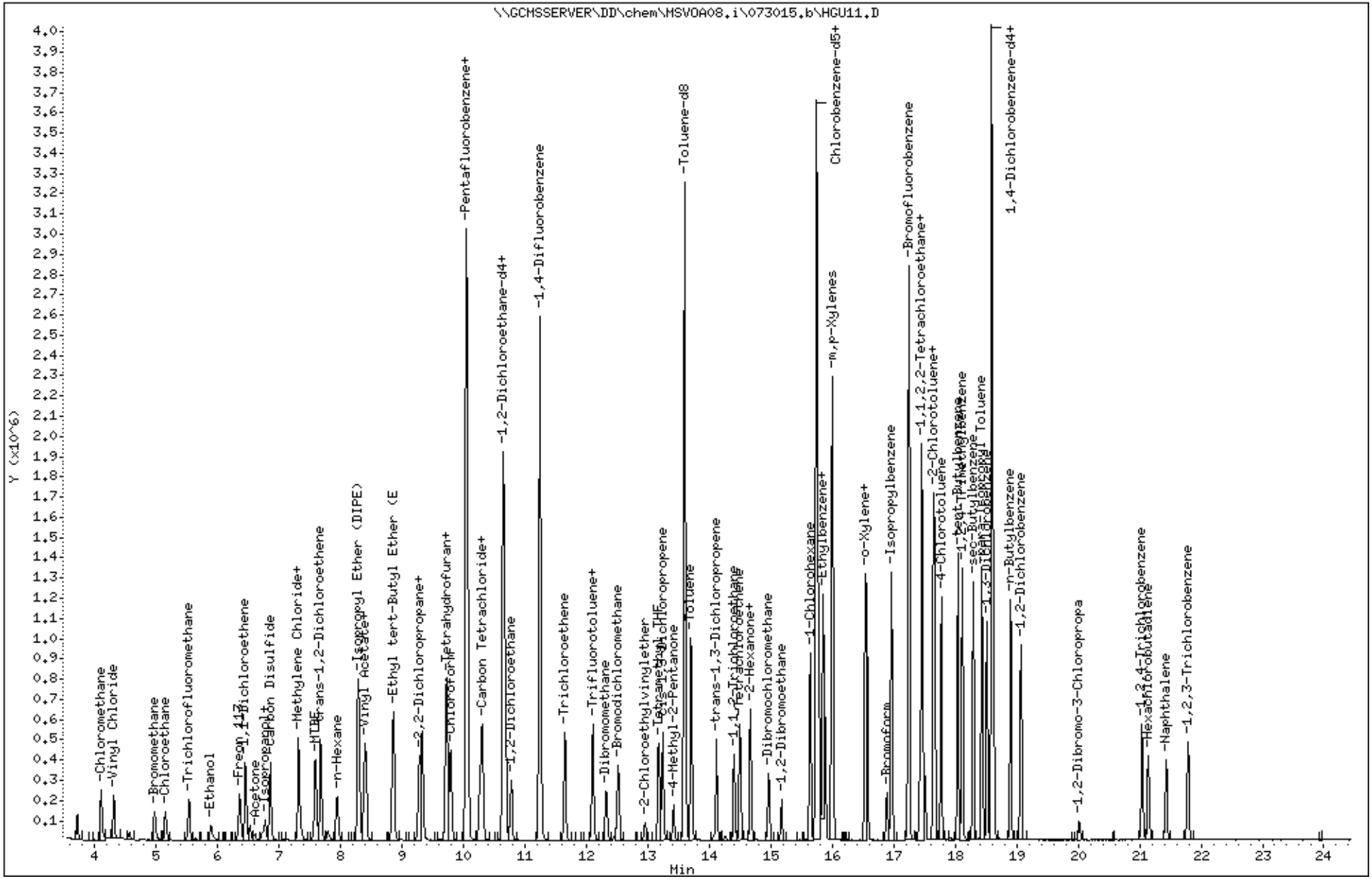
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	64 Styrene	104	16.570	16.559	(1.053)	565955	12.8725	12.8725
	65 Bromoform	173	16.886	16.885	(1.073)	108951	11.3369	11.3369
	66 Isopropylbenzene	105	16.964	16.954	(0.912)	871279	12.8747	12.8747
	67 Bromofluorobenzene	95	17.241	17.240	(0.927)	1090308	51.0023	51.0022
	68 1,1,2,2-Tetrachloroethane	83	17.418	17.417	(0.937)	177997	11.9296	11.9296
	69 Bromobenzene	156	17.448	17.447	(0.938)	243210	12.9295	12.9295
	70 Propylbenzene	91	17.467	17.457	(0.940)	1054952	13.0431	13.0431
	71 1,2,3-Trichloropropane	110	17.507	17.506	(0.942)	40727	11.8323	11.8323
	72 2-Chlorotoluene	91	17.645	17.634	(0.949)	785491	14.0499	14.0498
	73 1,3,5-Trimethylbenzene	105	17.665	17.654	(0.950)	776335	14.3275	14.3275
	74 4-Chlorotoluene	91	17.773	17.772	(0.956)	713915	14.2506	14.2505
	75 tert-Butylbenzene	119	18.039	18.039	(0.970)	649586	13.1086	13.1085
	76 1,2,4-Trimethylbenzene	105	18.118	18.108	(0.975)	752966	13.4074	13.4073
	77 sec-Butylbenzene	105	18.296	18.285	(0.984)	936265	12.8422	12.8421
	78 para-Isopropyl Toluene	119	18.434	18.433	(0.992)	767872	13.3759	13.3758
	79 1,3-Dichlorobenzene	146	18.513	18.512	(0.996)	426403	12.7405	12.7404
*	80 1,4-Dichlorobenzene-d4	152	18.592	18.591	(1.000)	1093012	50.0000	
	81 1,4-Dichlorobenzene	146	18.621	18.621	(1.002)	428197	12.9072	12.9072
	82 n-Butylbenzene	91	18.898	18.897	(1.016)	703310	13.7924	13.7924
	83 1,2-Dichlorobenzene	146	19.075	19.065	(1.026)	420955	13.1178	13.1178
	84 1,2-Dibromo-3-Chloropropane	75	20.022	20.011	(1.077)	25987	10.8653	10.8652
	85 1,2,4-Trichlorobenzene	180	21.038	21.037	(1.132)	222375	12.0608	12.0608
	86 Hexachlorobutadiene	225	21.146	21.136	(1.137)	110464	12.5204	12.5203
	87 Naphthalene	128	21.432	21.432	(1.153)	374690	10.1444	10.1443
	88 1,2,3-Trichlorobenzene	180	21.787	21.777	(1.172)	200189	12.0139	12.0139

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).
R - Spike/Surrogate failed recovery limits.

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU11.D
Date : 30-JUL-2015 13:58
Client ID: DYNA P&T
Sample Info: BSd,QC797680,225639,S27558,.005/100,S27556,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU11.D
Report Date: 30-Jul-2015 14:28

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU11.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 13:58 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : BSd,QC797680,225639,S27558,.005/100,S27556,
Misc Info : .005/100,S27533,.005/100,S26064,.005/100
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 11
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.722	3.718	(0.371)	143051	9.88797	9.8879
2 Chloromethane	50	4.107	4.103	(0.409)	292227	11.8677	11.8677
3 Vinyl Chloride	62	4.314	4.310	(0.429)	238172	11.6274	11.6273
4 Bromomethane	94	4.984	4.970	(0.496)	122007	11.0846	11.0845
5 Chloroethane	64	5.152	5.148	(0.513)	143210	9.69582	9.6958
6 Trichlorofluoromethane	101	5.537	5.533	(0.551)	207840	8.98790	8.9879
7 Ethanol	45	5.892	5.888	(0.587)	141054	980.190	980.1895
8 Freon 113	101	6.365	6.351	(0.634)	138239	10.2352	10.2352
9 1,1-Dichloroethene	96	6.454	6.460	(0.643)	161271	11.2409	11.2408
10 Acetone	43	6.612	6.598	(0.658)	52489	9.65651	9.6565
11 Isopropanol	45	6.740	6.726	(0.671)	71976	96.6063	96.6062
12 Iodomethane	142	6.780	6.775	(0.675)	143001	18.4942	18.4941
13 Carbon Disulfide	76	6.859	6.854	(0.683)	654846	11.0611	11.0610
14 Methylene Chloride	84	7.322	7.318	(0.729)	228102	12.5716	12.5715
15 tert-Butyl Alcohol (TBA)	59	7.371	7.357	(0.734)	49628	51.5211	51.5210
16 MTBE	73	7.598	7.584	(0.756)	482700	11.9492	11.9491

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU11.D
Report Date: 30-Jul-2015 14:28

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	7.677	7.673	(0.764)	198765	12.1825	12.1824
	18 n-Hexane	57	7.953	7.939	(0.792)	122394	20.1549	20.1549
	19 Isopropyl Ether (DIPE)	45	8.289	8.284	(0.825)	1082168	12.7085	12.7085
	20 Vinyl Acetate	43	8.387	8.383	(0.835)	484539	19.4466	19.4466
	21 1,1-Dichloroethane	63	8.417	8.403	(0.838)	451486	12.4283	12.4282
	22 Ethyl tert-Butyl Ether (ETBE)	59	8.861	8.847	(0.882)	780221	12.8957	12.8957
	23 2,2-Dichloropropane	77	9.295	9.281	(0.925)	314341	13.9126	13.9126
	24 2-Butanone	43	9.324	9.320	(0.928)	79318	11.4621	11.4621
	25 cis-1,2-Dichloroethene	96	9.334	9.330	(0.929)	230487	12.6041	12.6041
	26 Tetrahydrofuran	42	9.719	9.714	(0.968)	416069	112.346	112.3460
	27 Bromochloromethane	128	9.729	9.724	(0.969)	106041	12.3508	12.3508
	28 Chloroform	83	9.798	9.784	(0.975)	412642	13.2787	13.2786
*	29 Pentafluorobenzene	168	10.044	10.040	(1.000)	1541975	50.0000	
	30 Dibromofluoromethane	113	10.064	10.050	(1.002)	858310	51.2635	51.2635
	31 1,1,1-Trichloroethane	97	10.064	10.050	(1.002)	285606	12.8387	12.8387
	32 Carbon Tetrachloride	117	10.271	10.267	(0.913)	246794	13.2963	13.2963
	33 1,1-Dichloropropene	75	10.310	10.306	(0.917)	299864	12.4898	12.4898
	34 1,2-Dichloroethane-d4	65	10.656	10.651	(0.947)	904711	53.9131	53.9130
	35 Methyl tert-Amyl Ether (TAME)	73	10.685	10.671	(0.950)	539187	11.5435	11.5434
	36 Benzene	78	10.646	10.642	(0.947)	858676	12.5840	12.5839
	37 1,2-Dichloroethane	62	10.784	10.770	(0.959)	297401	12.9540	12.9539
*	38 1,4-Difluorobenzene	114	11.247	11.233	(1.000)	2417296	50.0000	
	39 Trichloroethene	95	11.652	11.648	(1.036)	205817	12.3376	12.3376
	40 Trifluorotoluene	146	12.086	12.082	(1.075)	3322	0.13503	0.1350(a)
	41 1,2-Dichloropropane	63	12.106	12.101	(1.076)	252889	11.9520	11.9520
	42 Dibromomethane	93	12.323	12.318	(1.096)	122933	12.0850	12.0849
	43 Bromodichloromethane	83	12.520	12.506	(1.113)	289771	12.3720	12.3719
	44 2-Chloroethylvinylether	63	12.954	12.950	(1.152)	45163	9.57612	9.5761
	45 Tetramethyl THF	43	13.181	13.166	(1.172)	436649	10.2873	10.2873
	46 cis-1,3-Dichloropropene	75	13.250	13.236	(1.178)	352052	12.3605	12.3604
	47 4-Methyl-2-Pentanone	43	13.417	13.413	(1.193)	177683	11.3789	11.3788
	48 Toluene-d8	98	13.605	13.591	(0.864)	2511108	50.2452	50.2451
	49 Toluene	92	13.703	13.699	(0.870)	479689	12.6986	12.6985
	50 trans-1,3-Dichloropropene	75	14.118	14.113	(0.897)	277914	12.1375	12.1375
	51 1,1,2-Trichloroethane	85	14.404	14.399	(0.915)	88860	12.7126	12.7125
	52 Tetrachloroethene	166	14.502	14.498	(0.921)	194654	13.0652	13.0652
	53 2-Hexanone	43	14.670	14.666	(0.932)	124959	11.6636	11.6635
	54 1,3-Dichloropropane	76	14.670	14.666	(0.932)	276977	12.0771	12.0771
	55 Dibromochloromethane	129	14.966	14.962	(0.951)	186575	11.6076	11.6075
	56 1,2-Dibromoethane	107	15.173	15.169	(0.964)	157455	12.3628	12.3627
	57 1-Chlorohexane	91	15.646	15.642	(0.994)	268404	12.0898	12.0898
*	58 Chlorobenzene-d5	117	15.745	15.741	(1.000)	2051568	50.0000	
	59 Chlorobenzene	112	15.784	15.780	(1.002)	551838	13.0055	13.0055
	60 Ethylbenzene	91	15.853	15.839	(1.007)	932085	12.9993	12.9992
	61 1,1,1,2-Tetrachloroethane	131	15.883	15.879	(1.009)	192108	12.4144	12.4144
	62 m,p-Xylenes	106	16.001	15.997	(1.016)	681778	25.9127	25.9126
	63 o-Xylene	106	16.544	16.530	(1.051)	356804	13.3057	13.3057

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU11.D
Report Date: 30-Jul-2015 14:28

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	16.573	16.559	(1.053)	597695	13.3845	13.3844
65 Bromoform	173	16.889	16.885	(1.073)	110720	11.3430	11.3430
66 Isopropylbenzene	105	16.968	16.954	(0.912)	886605	13.2736	13.2736
67 Bromofluorobenzene	95	17.244	17.240	(0.927)	1012869	48.0035	48.0034
68 1,1,2,2-Tetrachloroethane	83	17.422	17.417	(0.937)	184985	12.5612	12.5611
69 Bromobenzene	156	17.451	17.447	(0.938)	246972	13.3023	13.3023
70 Propylbenzene	91	17.461	17.457	(0.939)	1079400	13.5211	13.5210
71 1,2,3-Trichloropropane	110	17.510	17.506	(0.942)	40754	11.9960	11.9960
72 2-Chlorotoluene	91	17.648	17.634	(0.949)	730933	13.2461	13.2461
73 1,3,5-Trimethylbenzene	105	17.668	17.654	(0.950)	741603	13.8667	13.8667
74 4-Chlorotoluene	91	17.777	17.772	(0.956)	686059	13.8748	13.8748
75 tert-Butylbenzene	119	18.043	18.039	(0.970)	635487	12.9929	12.9928
76 1,2,4-Trimethylbenzene	105	18.112	18.108	(0.974)	743210	13.4078	13.4078
77 sec-Butylbenzene	105	18.299	18.285	(0.984)	941932	13.0900	13.0899
78 para-Isopropyl Toluene	119	18.438	18.433	(0.992)	735572	12.9819	12.9818
79 1,3-Dichlorobenzene	146	18.516	18.512	(0.996)	435036	13.1695	13.1694
* 80 1,4-Dichlorobenzene-d4	152	18.595	18.591	(1.000)	1078812	50.0000	
81 1,4-Dichlorobenzene	146	18.625	18.621	(1.002)	439222	13.4138	13.4138
82 n-Butylbenzene	91	18.901	18.897	(1.016)	681020	13.5311	13.5310
83 1,2-Dichlorobenzene	146	19.069	19.065	(1.025)	421504	13.3078	13.3078
84 1,2-Dibromo-3-Chloropropane	75	20.016	20.011	(1.076)	25935	10.9866	10.9866
85 1,2,4-Trichlorobenzene	180	21.041	21.037	(1.132)	217214	11.9360	11.9359
86 Hexachlorobutadiene	225	21.150	21.136	(1.137)	108522	12.4622	12.4622
87 Naphthalene	128	21.436	21.432	(1.153)	387837	10.6386	10.6385
88 1,2,3-Trichlorobenzene	180	21.791	21.777	(1.172)	200512	12.1917	12.1917

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

CURTIS & TOMPKINS SPIKE USER REPORT FOR 268557 MSVOA Water
EPA 8260C

Type : BS
Inst : MSVOA09
Seqnum : 485305964005.5
File : igv05
IDF : 1.0
Lab ID : QC797874
Matrix : Water
Batch : 225691
Time : 31-JUL-2015 13:23
Cal : 485271359002
Caltype : WATER
Units : ug/L

Type : BSD
Inst : MSVOA09
Seqnum : 485305964008.2
File : igv08
IDF : 1.0
Lab ID : QC797875
Matrix : Water
Batch : 225691
Time : 31-JUL-2015 15:06
Cal : 485271359002
Caltype : WATER

BS:
BSD:

Analyte	Spiked	BS Raw	BS Result	%Rec	BSD Raw	BSD Result	%Rec	Limits	RPD	Lim	Flags
Freon 12	10.00	9.046	9.046	90	8.298	8.298	83	30-155	9	30	u v- **b***
Chloromethane	10.00	9.269	9.269	93	8.984	8.984	90	40-125	3	30	u
Vinyl Chloride	10.00	10.76	10.76	108	9.917	9.917	99	50-145	8	30	u
Bromomethane	10.00	11.83	11.83	118	11.19	11.19	112	30-145	6	30	u
Chloroethane	10.00	10.47	10.47	105	9.645	9.645	96	60-135	8	30	u
Trichlorofluoromethane	10.00	10.55	10.55	106	9.453	9.453	95	60-145	11	30	u
Acetone	12.50	13.65	13.65	109	12.66	12.66	101	40-140	8	30	u
Freon 113	12.50	11.11	11.11	89	11.34	11.34	91	61-138	2	30	u
1,1-Dichloroethene	12.50	12.17	12.17	97	11.73	11.73	94	70-130	4	30	u
Methylene Chloride	12.50	13.41	13.41	107	13.06	13.06	104	55-140	3	30	u
Carbon Disulfide	12.50	11.43	11.43	91	11.28	11.28	90	35-160	1	30	u
MTBE	12.50	13.47	13.47	108	13.32	13.32	107	65-125	1	30	u
trans-1,2-Dichloroethene	12.50	12.98	12.98	104	12.55	12.55	100	60-140	3	30	u
Vinyl Acetate	12.50	17.16	17.16	137	16.58	16.58	133	60-194	3	30	c+ u **b***
1,1-Dichloroethane	12.50	13.58	13.58	109	13.58	13.58	109	70-135	0	30	u
2-Butanone	12.50	14.56	14.56	116	14.32	14.32	115	30-150	2	30	u
cis-1,2-Dichloroethene	12.50	13.40	13.40	107	13.38	13.38	107	70-125	0	30	u
2,2-Dichloropropane	12.50	15.23	15.23	122	14.71	14.71	118	70-135	3	30	u
Chloroform	12.50	13.92	13.92	111	13.87	13.87	111	65-135	0	30	u
Bromochloromethane	12.50	13.03	13.03	104	12.76	12.76	102	65-130	2	30	u
1,1,1-Trichloroethane	12.50	13.94	13.94	112	13.46	13.46	108	65-130	3	30	u
1,1-Dichloropropene	12.50	11.54	11.54	92	11.47	11.47	92	75-130	1	30	u
Carbon Tetrachloride	12.50	12.61	12.61	101	12.33	12.33	99	65-140	2	30	u
1,2-Dichloroethane	12.50	12.51	12.51	100	12.72	12.72	102	70-130	2	30	u
Benzene	12.50	12.71	12.71	102	12.64	12.64	101	80-120	1	30	u
Trichloroethene	12.50	11.74	11.74	94	11.93	11.93	95	70-125	2	30	u
1,2-Dichloropropane	12.50	11.67	11.67	93	11.68	11.68	93	75-125	0	30	u
Bromodichloromethane	12.50	12.15	12.15	97	11.94	11.94	96	75-120	2	30	u
Dibromomethane	12.50	12.21	12.21	98	11.94	11.94	96	75-125	2	30	u
4-Methyl-2-Pentanone	12.50	12.75	12.75	102	12.62	12.62	101	60-135	1	30	u
cis-1,3-Dichloropropene	12.50	12.19	12.19	97	12.00	12.00	96	70-130	2	30	u
Toluene	12.50	11.53	11.53	92	11.92	11.92	95	75-120	3	30	u
trans-1,3-Dichloropropene	12.50	10.27	10.27	82	10.36	10.36	83	55-140	1	30	u
1,1,2-Trichloroethane	12.50	11.38	11.38	91	11.32	11.32	91	75-125	0	30	u
2-Hexanone	12.50	11.77	11.77	94	11.56	11.56	92	55-130	2	30	u
1,3-Dichloropropane	12.50	11.46	11.46	92	11.35	11.35	91	75-125	1	30	u
Tetrachloroethene	12.50	9.646	9.646	77	10.30	10.30	82	45-150	7	30	c- u **b***

Analyte	Spiked	BS Raw	BS Result	%Rec	BSD Raw	BSD Result	%Rec	Limits	RPD	Lim	Flags
Dibromochloromethane	12.50	10.54	10.54	84	10.71	10.71	86	60-135	2	30	u
1,2-Dibromoethane	12.50	10.66	10.66	85	10.72	10.72	86	80-120	1	30	u
Chlorobenzene	12.50	10.93	10.93	87	11.31	11.31	90	80-120	3	30	u
1,1,1,2-Tetrachloroethane	12.50	10.55	10.55	84	10.96	10.96	88	80-130	4	30	u
Ethylbenzene	12.50	10.73	10.73	86	11.49	11.49	92	75-125	7	30	u
m,p-Xylenes	25.00	21.68	21.68	87	23.23	23.23	93	75-130	7	30	u
o-Xylene	12.50	10.67	10.67	85	11.14	11.14	89	80-120	4	30	u
Styrene	12.50	11.67	11.67	93	11.97	11.97	96	65-135	3	30	u
Bromoform	12.50	11.29	11.29	90	11.13	11.13	89	70-130	1	30	u
Isopropylbenzene	12.50	10.75	10.75	86	11.28	11.28	90	75-125	5	30	u
1,1,2,2-Tetrachloroethane	12.50	11.93	11.93	95	11.66	11.66	93	65-130	2	30	u
1,2,3-Trichloropropane	12.50	11.52	11.52	92	11.67	11.67	93	75-125	1	30	u
Propylbenzene	12.50	10.84	10.84	87	11.54	11.54	92	70-130	6	30	u
Bromobenzene	12.50	11.13	11.13	89	11.36	11.36	91	75-125	2	30	u
1,3,5-Trimethylbenzene	12.50	10.97	10.97	88	11.87	11.87	95	75-130	8	30	u
2-Chlorotoluene	12.50	11.55	11.55	92	11.97	11.97	96	75-125	4	30	u
4-Chlorotoluene	12.50	10.96	10.96	88	11.54	11.54	92	75-130	5	30	u
tert-Butylbenzene	12.50	9.785	9.785	78	11.09	11.09	89	70-130	13	30	c- u **b***
1,2,4-Trimethylbenzene	12.50	10.39	10.39	83	10.92	10.92	87	75-130	5	30	u
sec-Butylbenzene	12.50	10.03	10.03	80	10.83	10.83	87	70-125	8	30	c- u **b***
para-Isopropyl Toluene	12.50	9.908	9.908	79	10.53	10.53	84	75-130	6	30	c- u **b***
1,3-Dichlorobenzene	12.50	11.11	11.11	89	11.13	11.13	89	75-125	0	30	u
1,4-Dichlorobenzene	12.50	11.13	11.13	89	11.51	11.51	92	75-125	3	30	u
n-Butylbenzene	12.50	9.657	9.657	77	10.49	10.49	84	70-135	8	30	c- u **b***
1,2-Dichlorobenzene	12.50	11.25	11.25	90	11.17	11.17	89	70-120	1	30	u
1,2-Dibromo-3-Chloropropane	12.50	11.45	11.45	92	10.59	10.59	85	50-130	8	30	u
1,2,4-Trichlorobenzene	12.50	9.643	9.643	77	9.568	9.568	77	65-135	1	30	c- u **b***
Hexachlorobutadiene	12.50	8.759	8.759	70	9.742	9.742	78	50-140	11	30	c- u **b***
Naphthalene	12.50	8.628	8.628	69	8.166	8.166	65	55-140	6	30	c- u **b***
1,2,3-Trichlorobenzene	12.50	9.097	9.097	73	9.523	9.523	76	55-140	5	30	c- u **b***
Dibromofluoromethane	50.00	56.65	56.65	113	55.42	55.42	111	85-115			u
1,2-Dichloroethane-d4	50.00	56.86	56.86	114	55.40	55.40	111	70-120			u
Toluene-d8	50.00	48.65	48.65	97	48.39	48.39	97	85-120			u
Bromofluorobenzene	50.00	51.97	51.97	104	50.88	50.88	102	75-120			u

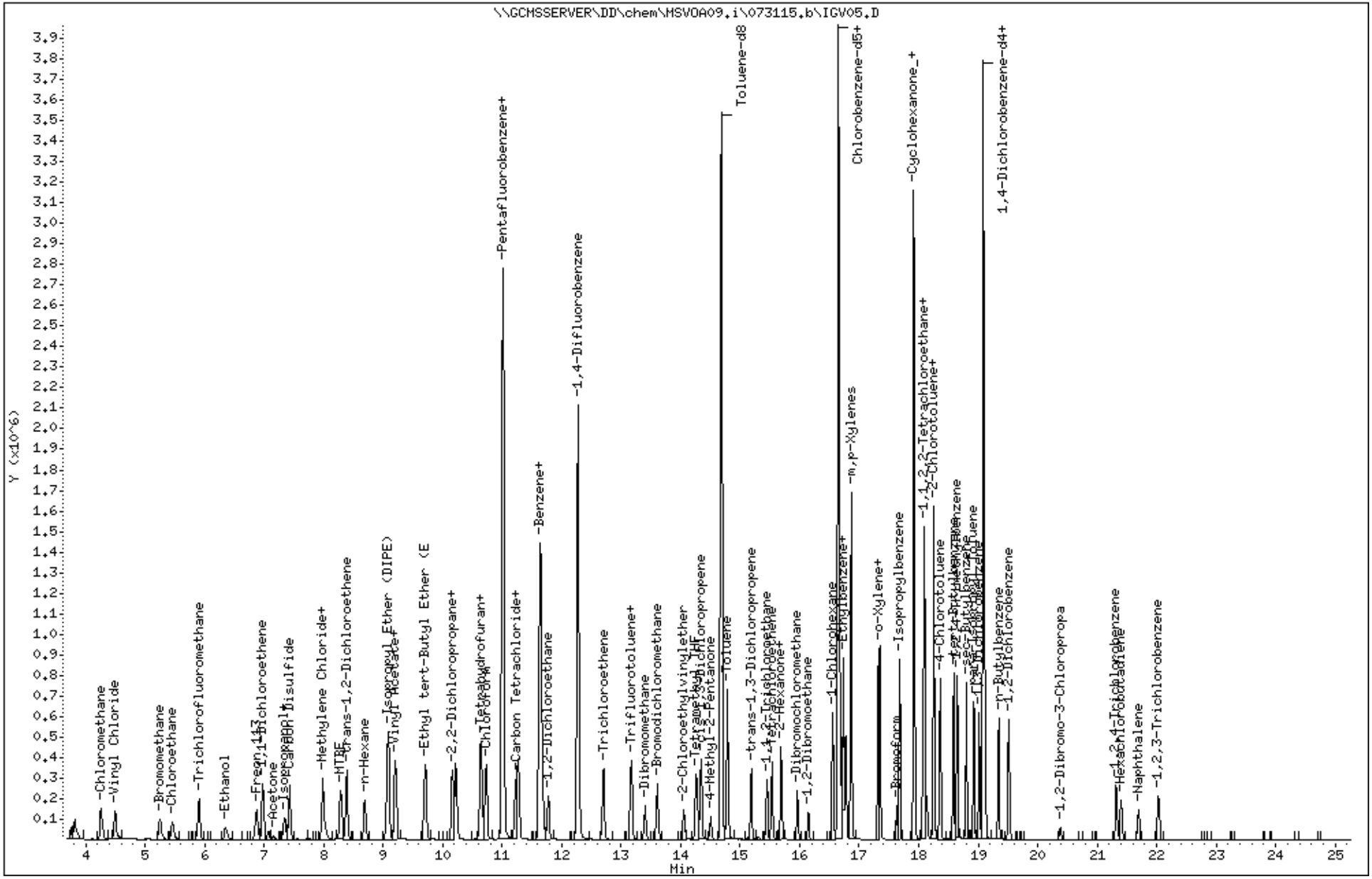
ISTD (ICAL ig713)	ICAL Area	BS Area	%Drift	ICAL RT	BS RT	Drift
Pentafluorobenzene	987439	1186250	20.13	11.04	11.01	-0.03
1,4-Difluorobenzene	1506110	2036955	35.25	12.30	12.28	-0.02
Chlorobenzene-d5	1326780	1950523	47.01	16.67	16.65	-0.02
1,4-Dichlorobenzene-d4	740445	971246	31.17	19.10	19.09	-0.01

ISTD (ICAL ig713)	ICAL Area	BSD Area	%Drift	ICAL RT	BSD RT	Drift
Pentafluorobenzene	987439	1150168	16.48	11.04	11.03	-0.01
1,4-Difluorobenzene	1506110	1973923	31.06	12.30	12.29	-0.01
Chlorobenzene-d5	1326780	1867942	40.79	16.67	16.66	-0.01
1,4-Dichlorobenzene-d4	740445	947535	27.97	19.10	19.09	-0.01

Analyst: KKM Date: 08/06/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV05.D
Date : 31-JUL-2015 13:23
Client ID: DYNA P&T
Instrument: MSVOA09.i
Sample Info: bs,qc797874,225691,s27007,.005/100,s27558,
Purge Volume: 5.0
Operator: VOC
Column phase: RTx Volatiles
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV05.D
Report Date: 31-Jul-2015 13:42

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV05.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 31-JUL-2015 13:23 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : bs,qc797874,225691,s27007,.005/100,s27558,
Misc Info : .005/100,s27556,.005/100,s27533,.005/100
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\826GOX9W.m
Meth Date : 09-Jul-2015 11:11 Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.815	3.824	(0.347)	156322	9.04570	9.0456
2 Chloromethane	50	4.259	4.268	(0.387)	240735	9.26878	9.2687
3 Vinyl Chloride	62	4.495	4.504	(0.408)	206362	10.7590	10.7589
4 Bromomethane	94	5.254	5.263	(0.477)	109502	11.8282	11.8281
5 Chloroethane	64	5.461	5.470	(0.496)	112849	10.4708	10.4708
6 Trichlorofluoromethane	101	5.905	5.923	(0.536)	207555	10.5530	10.5530
7 Ethanol	45	6.348	6.367	(0.577)	116794	1410.08	1410.0832
8 Freon 113	101	6.870	6.889	(0.624)	101041	11.1063	11.1063
9 1,1-Dichloroethene	96	6.979	6.998	(0.634)	113873	12.1713	12.1713
10 Acetone	43	7.156	7.165	(0.650)	34555	13.6494	13.6494
11 Isopropanol	45	7.334	7.352	(0.666)	59631	139.089	139.0891
12 Iodomethane	142	7.343	7.362	(0.667)	135291	11.9556	11.9555
13 Carbon Disulfide	76	7.432	7.451	(0.675)	458740	11.4251	11.4250
14 Methylene Chloride	84	7.984	8.003	(0.725)	161470	13.4075	13.4074
15 tert-Butyl Alcohol (TBA)	59	8.053	8.072	(0.731)	37259	66.4706	66.4706
16 MTBE	73	8.290	8.308	(0.753)	291186	13.4738	13.4737

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	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	8.388	8.407	(0.762)	140731	12.9770	12.9770
	18 n-Hexane	57	8.694	8.712	(0.790)	105799	14.4467	14.4467
	19 Isopropyl Ether (DIPE)	45	9.078	9.097	(0.825)	760206	14.1313	14.1313
	20 Vinyl Acetate	43	9.196	9.215	(0.835)	329168	17.1605	17.1605
	21 1,1-Dichloroethane	63	9.206	9.225	(0.836)	334432	13.5823	13.5823
	22 Ethyl tert-Butyl Ether (ETBE)	59	9.709	9.727	(0.882)	493515	13.6238	13.6238
	23 2,2-Dichloropropane	77	10.162	10.191	(0.923)	265951	15.2322	15.2321
	24 cis-1,2-Dichloroethene	96	10.221	10.240	(0.928)	160972	13.4018	13.4017
	25 2-Butanone	43	10.211	10.230	(0.927)	56132	14.5575	14.5575
	26 Tetrahydrofuran	42	10.635	10.654	(0.966)	281887	138.537	138.5372
	27 Bromochloromethane	128	10.655	10.674	(0.968)	72310	13.0258	13.0257
	28 Chloroform	83	10.734	10.752	(0.975)	319459	13.9221	13.9220
*	29 Pentafluorobenzene	168	11.010	11.038	(1.000)	1186250	50.0000	
	30 Dibromofluoromethane	113	11.019	11.038	(1.001)	881636	56.6509	56.6508
	31 1,1,1-Trichloroethane	97	11.000	11.028	(0.999)	249367	13.9382	13.9381
	32 Carbon Tetrachloride	117	11.226	11.255	(0.914)	210674	12.6114	12.6113
	33 1,1-Dichloropropene	75	11.276	11.294	(0.918)	210512	11.5420	11.5419
	34 Benzene	78	11.630	11.649	(0.947)	606748	12.7111	12.7111
	35 1,2-Dichloroethane-d4	65	11.650	11.669	(0.949)	842406	56.8601	56.8600
	36 Methyl tert-Amyl Ether (TAME)	73	11.670	11.689	(0.950)	351483	12.1232	12.1231
	37 1,2-Dichloroethane	62	11.778	11.797	(0.959)	209016	12.5101	12.5100
*	38 1,4-Difluorobenzene	114	12.281	12.300	(1.000)	2036955	50.0000	
	39 Trichloroethene	95	12.705	12.723	(1.035)	147998	11.7406	11.7405
	40 Trifluorotoluene	146	13.158	13.177	(1.071)	3385	0.23846	0.2384(a)
	41 1,2-Dichloropropane	63	13.168	13.187	(1.072)	172969	11.6704	11.6703
	42 Dibromomethane	93	13.404	13.423	(1.091)	88151	12.2096	12.2096
	43 Bromodichloromethane	83	13.611	13.630	(1.108)	213940	12.1482	12.1481
	44 2-Chloroethylvinylether	63	14.055	14.074	(1.144)	71584	12.2527	12.2526
	45 Tetramethyl THF	43	14.262	14.281	(1.161)	312711	11.2017	11.2017
	46 cis-1,3-Dichloropropene	75	14.341	14.359	(1.168)	237487	12.1857	12.1856
	47 4-Methyl-2-Pentanone	43	14.508	14.517	(1.181)	121126	12.7475	12.7475
	48 Toluene-d8	98	14.686	14.704	(0.882)	2613649	48.6483	48.6482
	49 Toluene	92	14.784	14.803	(0.888)	331597	11.5255	11.5255
	50 trans-1,3-Dichloropropene	75	15.188	15.197	(0.912)	177447	10.2728	10.2727
	51 1,1,2-Trichloroethane	85	15.454	15.463	(0.928)	55851	11.3774	11.3774
	52 Tetrachloroethene	166	15.543	15.552	(0.934)	107141	9.64570	9.6456
	53 2-Hexanone	43	15.681	15.700	(0.942)	86213	11.7678	11.7678
	54 1,3-Dichloropropane	76	15.691	15.710	(0.943)	181729	11.4602	11.4602
	55 Dibromochloromethane	129	15.967	15.976	(0.959)	122359	10.5393	10.5393
	56 1,2-Dibromoethane	107	16.144	16.163	(0.970)	95127	10.6640	10.6640
	57 1-Chlorohexane	91	16.558	16.567	(0.995)	165069	10.7766	10.7766
*	58 Chlorobenzene-d5	117	16.647	16.665	(1.000)	1950523	50.0000	
	59 Chlorobenzene	112	16.686	16.695	(1.002)	350230	10.9338	10.9338
	60 Ethylbenzene	91	16.735	16.744	(1.005)	601866	10.7324	10.7323
	61 1,1,1,2-Tetrachloroethane	131	16.775	16.784	(1.008)	127979	10.5480	10.5479
	62 m,p-Xylenes	106	16.864	16.882	(1.013)	424564	21.6785	21.6785
	63 o-Xylene	106	17.327	17.336	(1.041)	205425	10.6661	10.6660

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV05.D
Report Date: 31-Jul-2015 13:42

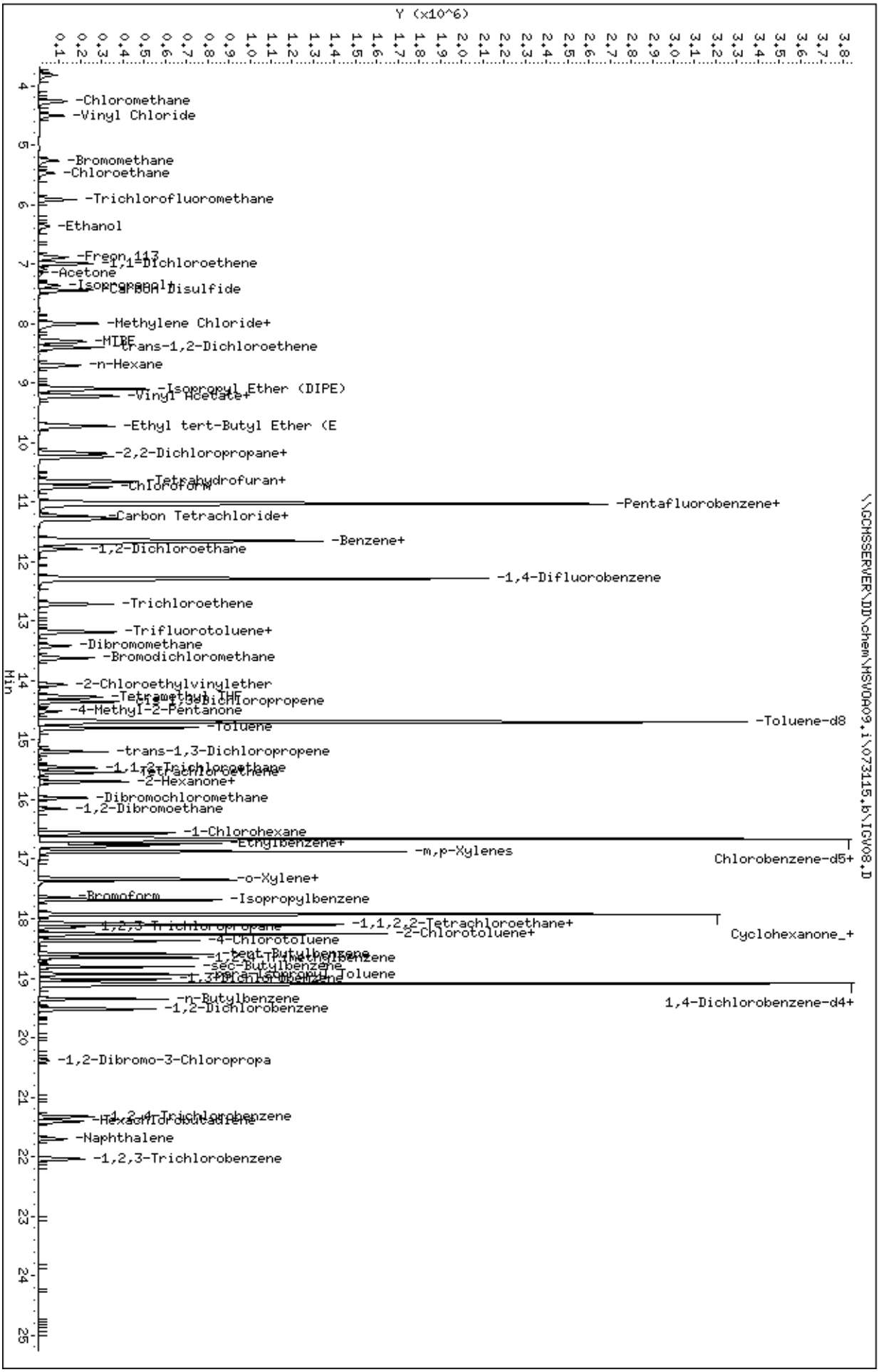
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	17.346	17.365	(1.042)	361465	11.6699	11.6699
65 Bromoform	173	17.632	17.641	(1.059)	63578	11.2892	11.2891
66 Isopropylbenzene	105	17.682	17.690	(0.926)	512236	10.7499	10.7498
67 Cyclohexanone_	55	17.908	17.937	(0.938)	38877	26.0896	26.0895
68 Bromofluorobenzene	95	17.918	17.937	(0.939)	997397	51.9712	51.9711
69 1,1,2,2-Tetrachloroethane	83	18.066	18.075	(0.946)	113300	11.9286	11.9285
70 Propylbenzene	91	18.095	18.104	(0.948)	626534	10.8378	10.8378
71 Bromobenzene	156	18.095	18.104	(0.948)	139168	11.1344	11.1344
72 1,2,3-Trichloropropane	110	18.145	18.154	(0.950)	25546	11.5172	11.5171
73 2-Chlorotoluene	91	18.253	18.262	(0.956)	453675	11.5486	11.5486
74 1,3,5-Trimethylbenzene	105	18.253	18.272	(0.956)	414247	10.9722	10.9721
75 4-Chlorotoluene	91	18.362	18.370	(0.962)	394897	10.9582	10.9581
76 tert-Butylbenzene	119	18.588	18.597	(0.974)	320570	9.78478	9.7847
77 1,2,4-Trimethylbenzene	105	18.647	18.656	(0.977)	388842	10.3942	10.3942
78 sec-Butylbenzene	105	18.805	18.814	(0.985)	490784	10.0316	10.0315
79 para-Isopropyl Toluene	119	18.923	18.942	(0.991)	366288	9.90761	9.9076
80 1,3-Dichlorobenzene	146	19.022	19.031	(0.996)	233528	11.1069	11.1069
* 81 1,4-Dichlorobenzene-d4	152	19.091	19.100	(1.000)	971246	50.0000	
82 1,4-Dichlorobenzene	146	19.111	19.129	(1.001)	243539	11.1299	11.1298
83 n-Butylbenzene	91	19.347	19.356	(1.013)	331047	9.65739	9.6573
84 1,2-Dichlorobenzene	146	19.515	19.533	(1.022)	214722	11.2525	11.2524
85 1,2-Dibromo-3-Chloropropane	75	20.382	20.391	(1.068)	16748	11.4481	11.4480
86 1,2,4-Trichlorobenzene	180	21.328	21.337	(1.117)	90699	9.64275	9.6427
87 Hexachlorobutadiene	225	21.407	21.416	(1.121)	41968	8.75855	8.7585
88 Naphthalene	128	21.693	21.711	(1.136)	132296	8.62824	8.6282
89 1,2,3-Trichlorobenzene	180	22.038	22.046	(1.154)	75031	9.09650	9.0964

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\GCMSSERVER\DD\chem\MSVOA09,i\073115,b\IGV08,D
Date : 31-JUL-2015 15:06
Client ID: DYNA P&T
Sample Info: bsd,9c797875,225691,s27007,.005/100,s27558,
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09,i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV08.D
Report Date: 31-Jul-2015 15:25

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV08.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 31-JUL-2015 15:06 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : bsd,qc797875,225691,s27007,.005/100,s27558,
Misc Info : .005/100,s27556,.005/100,s27533,.005/100
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\826GOX9W.m
Meth Date : 09-Jul-2015 11:11 Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.825	3.824	(0.347)	139044	8.29833	8.2983
2 Chloromethane	50	4.259	4.268	(0.386)	226771	8.98414	8.9841
3 Vinyl Chloride	62	4.505	4.504	(0.408)	184420	9.91665	9.9166
4 Bromomethane	94	5.254	5.263	(0.476)	100419	11.1874	11.1873
5 Chloroethane	64	5.471	5.470	(0.496)	100787	9.64499	9.6449
6 Trichlorofluoromethane	101	5.915	5.923	(0.536)	180263	9.45289	9.4528
7 Ethanol	45	6.368	6.367	(0.577)	102823	1280.35	1280.3547
8 Freon 113	101	6.890	6.889	(0.625)	99996	11.3363	11.3363
9 1,1-Dichloroethene	96	6.989	6.998	(0.634)	106436	11.7333	11.7333
10 Acetone	43	7.166	7.165	(0.650)	31070	12.6578	12.6578
11 Isopropanol	45	7.344	7.352	(0.666)	53659	129.088	129.0875
12 Iodomethane	142	7.363	7.362	(0.668)	130333	11.8787	11.8787
13 Carbon Disulfide	76	7.442	7.451	(0.675)	439022	11.2770	11.2770
14 Methylene Chloride	84	8.004	8.003	(0.726)	152511	13.0609	13.0608
15 tert-Butyl Alcohol (TBA)	59	8.063	8.072	(0.731)	35399	65.1333	65.1332
16 MTBE	73	8.300	8.308	(0.752)	279096	13.3195	13.3194

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV08.D
Report Date: 31-Jul-2015 15:25

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	8.398	8.407	(0.761)	131943	12.5483	12.5483
	18 n-Hexane	57	8.704	8.712	(0.789)	108682	15.3060	15.3059
	19 Isopropyl Ether (DIPE)	45	9.098	9.097	(0.825)	739556	14.1787	14.1787
	20 Vinyl Acetate	43	9.206	9.215	(0.835)	308411	16.5828	16.5827
	21 1,1-Dichloroethane	63	9.226	9.225	(0.836)	324119	13.5764	13.5764
	22 Ethyl tert-Butyl Ether (ETBE)	59	9.719	9.727	(0.881)	475593	13.5410	13.5409
	23 2,2-Dichloropropane	77	10.182	10.191	(0.923)	249027	14.7103	14.7102
	24 cis-1,2-Dichloroethene	96	10.241	10.240	(0.929)	155858	13.3831	13.3831
	25 2-Butanone	43	10.231	10.230	(0.928)	53532	14.3188	14.3188
	26 Tetrahydrofuran	42	10.645	10.654	(0.965)	266868	135.270	135.2701
	27 Bromochloromethane	128	10.665	10.674	(0.967)	68683	12.7605	12.7605
	28 Chloroform	83	10.744	10.752	(0.974)	308573	13.8695	13.8695
*	29 Pentafluorobenzene	168	11.029	11.038	(1.000)	1150168	50.0000	
	30 Dibromofluoromethane	113	11.029	11.038	(1.000)	836300	55.4236	55.4235
	31 1,1,1-Trichloroethane	97	11.020	11.028	(0.999)	233477	13.4594	13.4594
	32 Carbon Tetrachloride	117	11.246	11.255	(0.915)	199634	12.3321	12.3320
	33 1,1-Dichloropropene	75	11.286	11.294	(0.918)	202739	11.4707	11.4707
	34 Benzene	78	11.640	11.649	(0.947)	584764	12.6418	12.6417
	35 1,2-Dichloroethane-d4	65	11.660	11.669	(0.949)	795380	55.4003	55.4002
	36 Methyl tert-Amyl Ether (TAME)	73	11.680	11.689	(0.950)	341007	12.1374	12.1374
	37 1,2-Dichloroethane	62	11.788	11.797	(0.959)	205999	12.7232	12.7232
*	38 1,4-Difluorobenzene	114	12.291	12.300	(1.000)	1973923	50.0000	
	39 Trichloroethene	95	12.715	12.723	(1.034)	145708	11.9280	11.9280
	40 Trifluorotoluene	146	13.168	13.177	(1.071)	1788	0.12997	0.1299(a)
	41 1,2-Dichloropropane	63	13.178	13.187	(1.072)	167695	11.6758	11.6757
	42 Dibromomethane	93	13.414	13.423	(1.091)	83543	11.9409	11.9408
	43 Bromodichloromethane	83	13.621	13.630	(1.108)	203737	11.9382	11.9382
	44 2-Chloroethylvinylether	63	14.065	14.074	(1.144)	66649	11.7721	11.7721
	45 Tetramethyl THF	43	14.272	14.281	(1.161)	299234	11.0612	11.0612
	46 cis-1,3-Dichloropropene	75	14.351	14.359	(1.168)	226610	11.9989	11.9988
	47 4-Methyl-2-Pentanone	43	14.518	14.517	(1.181)	116197	12.6192	12.6192
	48 Toluene-d8	98	14.696	14.704	(0.882)	2489802	48.3919	48.3918
	49 Toluene	92	14.794	14.803	(0.888)	328394	11.9188	11.9187
	50 trans-1,3-Dichloropropene	75	15.198	15.197	(0.912)	171418	10.3625	10.3624
	51 1,1,2-Trichloroethane	85	15.464	15.463	(0.928)	53224	11.3216	11.3215
	52 Tetrachloroethene	166	15.543	15.552	(0.933)	109537	10.2973	10.2973
	53 2-Hexanone	43	15.691	15.700	(0.942)	81108	11.5605	11.5605
	54 1,3-Dichloropropane	76	15.701	15.710	(0.943)	172295	11.3457	11.3456
	55 Dibromochloromethane	129	15.977	15.976	(0.959)	119107	10.7128	10.7127
	56 1,2-Dibromoethane	107	16.154	16.163	(0.970)	91620	10.7249	10.7249
	57 1-Chlorohexane	91	16.558	16.567	(0.994)	171795	11.7116	11.7115
*	58 Chlorobenzene-d5	117	16.657	16.665	(1.000)	1867942	50.0000	
	59 Chlorobenzene	112	16.686	16.695	(1.002)	346822	11.3061	11.3061
	60 Ethylbenzene	91	16.745	16.744	(1.005)	616905	11.4869	11.4868
	61 1,1,1,2-Tetrachloroethane	131	16.775	16.784	(1.007)	127359	10.9609	10.9609
	62 m,p-Xylenes	106	16.874	16.882	(1.013)	435658	23.2284	23.2284
	63 o-Xylene	106	17.327	17.336	(1.040)	205502	11.1418	11.1417

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV08.D
Report Date: 31-Jul-2015 15:25

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	17.356	17.365	(1.042)	355103	11.9714	11.9714
65 Bromoform	173	17.642	17.641	(1.059)	60016	11.1277	11.1276
66 Isopropylbenzene	105	17.682	17.690	(0.926)	524302	11.2784	11.2784
67 Cyclohexanone_	55	17.908	17.937	(0.938)	38225	26.2936	26.2936
68 Bromofluorobenzene	95	17.928	17.937	(0.939)	952558	50.8769	50.8768
69 1,1,2,2-Tetrachloroethane	83	18.076	18.075	(0.947)	108017	11.6570	11.6570
70 Propylbenzene	91	18.105	18.104	(0.948)	650978	11.5425	11.5424
71 Bromobenzene	156	18.105	18.104	(0.948)	138497	11.3581	11.3580
72 1,2,3-Trichloropropane	110	18.145	18.154	(0.950)	25249	11.6682	11.6682
73 2-Chlorotoluene	91	18.263	18.262	(0.957)	458774	11.9707	11.9706
74 1,3,5-Trimethylbenzene	105	18.263	18.272	(0.957)	437097	11.8671	11.8671
75 4-Chlorotoluene	91	18.372	18.370	(0.962)	405878	11.5448	11.5447
76 tert-Butylbenzene	119	18.598	18.597	(0.974)	354480	11.0906	11.0906
77 1,2,4-Trimethylbenzene	105	18.657	18.656	(0.977)	398477	10.9184	10.9183
78 sec-Butylbenzene	105	18.805	18.814	(0.985)	516792	10.8275	10.8275
79 para-Isopropyl Toluene	119	18.933	18.942	(0.992)	379772	10.5294	10.5294
80 1,3-Dichlorobenzene	146	19.022	19.031	(0.996)	228325	11.1312	11.1312
* 81 1,4-Dichlorobenzene-d4	152	19.091	19.100	(1.000)	947535	50.0000	
82 1,4-Dichlorobenzene	146	19.121	19.129	(1.002)	245686	11.5090	11.5089
83 n-Butylbenzene	91	19.347	19.356	(1.013)	350730	10.4876	10.4876
84 1,2-Dichlorobenzene	146	19.525	19.533	(1.023)	207949	11.1702	11.1702
85 1,2-Dibromo-3-Chloropropane	75	20.382	20.391	(1.068)	15112	10.5882	10.5882
86 1,2,4-Trichlorobenzene	180	21.328	21.337	(1.117)	87800	9.56815	9.5681
87 Hexachlorobutadiene	225	21.407	21.416	(1.121)	45539	9.74169	9.7416
88 Naphthalene	128	21.703	21.711	(1.137)	122147	8.16572	8.1657
89 1,2,3-Trichlorobenzene	180	22.038	22.046	(1.154)	76632	9.52313	9.5231

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

CURTIS & TOMPKINS SPIKE USER REPORT FOR 268557 MSVOA Water
EPA 8260C

Type : MSS	Type : MS	Type : MSD
Inst : MSVOA08	Inst : MSVOA08	Inst : MSVOA08
Seqnum : 475304292022	Seqnum : 475304292024.3	Seqnum : 475304292025.3
File : hgu22	File : hgu24	File : hgu25
IDF : 5.0	IDF : 5.0	IDF : 5.0
Lab ID : 268557-001	Lab ID : QC797770	Lab ID : QC797771
Matrix : Water	Matrix : Water	Matrix : Water
Batch : 225639	Batch : 225639	Batch : 225639
Time : 30-JUL-2015 20:10	Time : 30-JUL-2015 21:18	Time : 30-JUL-2015 21:51
Cal : 475253923002	Cal : 475253923002	Cal : 475253923002
Caltype : WATER	Caltype : WATER	Caltype : WATER
Units : ug/L		

MSS:
MS:
MSD:

Analyte	MSS	Spiked	MS Raw	MS Result	%Rec	MSD Raw	MSD Result	%Rec	Limits	RPD	Lim	Flags
Freon 12	ND	50.00	10.94	54.69	109	10.34	51.71	103	30-155	6	30	u v+ **b***
Chloromethane	ND	50.00	9.515	47.57	95	9.200	46.00	92	40-125	3	30	u
Vinyl Chloride	ND	50.00	10.83	54.17	108	10.26	51.30	103	50-145	5	30	u
Bromomethane	ND	50.00	4.303	21.52	43	5.051	25.25	51	30-145	16	30	u
Chloroethane	ND	50.00	10.10	50.48	101	9.968	49.84	100	60-135	1	30	u
Trichlorofluoromethane	ND	50.00	9.859	49.30	99	9.297	46.49	93	60-145	6	30	u
Acetone	ND	62.50	9.848	49.24	79	8.887	44.44	71	40-140	10	30	u
Freon 113	ND	62.50	9.752	48.76	78	9.480	47.40	76	61-138	3	30	c- u v- **b***
1,1-Dichloroethene	ND	62.50	10.80	53.99	86	10.29	51.43	82	70-130	5	30	u
Methylene Chloride	ND	62.50	13.23	66.13	106	13.03	65.15	104	55-140	1	30	u
Carbon Disulfide	0.8440 J	62.50	11.55	57.76	91	10.73	53.65	84	35-160	7	30	u v- **b***
MTBE	ND	62.50	13.38	66.91	107	12.30	61.48	98	65-125	8	30	u
trans-1,2-Dichloroethene	ND	62.50	12.89	64.45	103	11.51	57.53	92	60-140	11	30	u
Vinyl Acetate	ND	62.50	20.97	104.8	168	21.38	106.9	171	60-194	2	30	c+ u v+ **b***
1,1-Dichloroethane	ND	62.50	13.47	67.33	108	13.30	66.51	106	70-135	1	30	u
2-Butanone	ND	62.50	12.32	61.58	99	11.86	59.31	95	30-150	4	30	u
cis-1,2-Dichloroethene	ND	62.50	13.19	65.94	105	13.03	65.15	104	70-125	1	30	u
2,2-Dichloropropane	ND	62.50	14.52	72.61	116	13.90	69.49	111	70-135	4	30	u
Chloroform	ND	62.50	15.11	75.54	121	13.61	68.03	109	65-135	10	30	u
Bromochloromethane	ND	62.50	12.05	60.26	96	11.87	59.33	95	65-130	2	30	u
1,1,1-Trichloroethane	ND	62.50	14.73	73.64	118	12.96	64.82	104	65-130	13	30	u
1,1-Dichloropropene	ND	62.50	13.34	66.70	107	12.12	60.58	97	75-130	10	30	u
Carbon Tetrachloride	ND	62.50	14.51	72.56	116	12.83	64.17	103	65-140	12	30	u
1,2-Dichloroethane	ND	62.50	15.86	79.32	127	13.99	69.93	112	70-130	13	30	u
Benzene	ND	62.50	13.75	68.73	110	11.94	59.72	96	80-120	14	30	u
Trichloroethene	ND	62.50	13.18	65.90	105	11.57	57.86	93	70-125	13	30	u
1,2-Dichloropropane	ND	62.50	13.32	66.60	107	11.37	56.85	91	75-125	16	30	u
Bromodichloromethane	ND	62.50	14.33	71.67	115	12.64	63.20	101	75-120	13	30	u
Dibromomethane	ND	62.50	13.79	68.94	110	12.17	60.86	97	75-125	12	30	u
4-Methyl-2-Pentanone	ND	62.50	13.44	67.18	107	11.55	57.73	92	60-135	15	30	u
cis-1,3-Dichloropropene	ND	62.50	13.42	67.08	107	11.53	57.67	92	70-130	15	30	u
Toluene	ND	62.50	12.80	63.98	102	11.66	58.31	93	75-120	9	30	u
trans-1,3-Dichloropropene	ND	62.50	12.38	61.92	99	11.25	56.27	90	55-140	10	30	u
1,1,2-Trichloroethane	ND	62.50	13.58	67.89	109	11.02	55.09	88	75-125	21	30	u
2-Hexanone	ND	62.50	12.62	63.10	101	10.92	54.59	87	55-130	14	30	u
1,3-Dichloropropane	ND	62.50	13.45	67.27	108	12.10	60.51	97	75-125	11	30	u

Analyte	MSS	Spiked	MS Raw	MS Result	%Rec	MSD Raw	MSD Result	%Rec	Limits	RPD	Lim	Flags
Tetrachloroethene	ND	62.50	12.81	64.06	103	11.11	55.56	89	45-150	14	30	u
Dibromochloromethane	ND	62.50	12.82	64.08	103	11.20	55.99	90	60-135	13	30	u
1,2-Dibromoethane	ND	62.50	12.99	64.93	104	12.00	60.01	96	80-120	8	30	u
Chlorobenzene	10.86	62.50	15.66	78.31	108	14.60	73.00	99	80-120	7	30	u
1,1,1,2-Tetrachloroethane	ND	62.50	14.14	70.71	113	12.20	61.02	98	80-130	15	30	u
Ethylbenzene	ND	62.50	14.17	70.87	113	12.37	61.86	99	75-125	14	30	u
m,p-Xylenes	ND	125.0	26.49	132.4	106	24.04	120.2	96	75-130	10	30	u
o-Xylene	ND	62.50	13.96	69.78	112	12.25	61.26	98	80-120	13	30	u
Styrene	ND	62.50	12.87	64.35	103	11.40	57.00	91	65-135	12	30	u
Bromoform	ND	62.50	11.19	55.97	90	10.11	50.57	81	70-130	10	30	u
Isopropylbenzene	ND	62.50	11.98	59.90	96	11.15	55.74	89	75-125	7	30	u
1,1,2,2-Tetrachloroethane	ND	62.50	12.58	62.92	101	11.78	58.92	94	65-130	7	30	u
1,2,3-Trichloropropane	ND	62.50	12.36	61.81	99	11.89	59.47	95	75-125	4	30	u
Propylbenzene	ND	62.50	12.78	63.88	102	11.92	59.58	95	70-130	7	30	u
Bromobenzene	ND	62.50	12.87	64.36	103	11.89	59.44	95	75-125	8	30	u
1,3,5-Trimethylbenzene	ND	62.50	13.59	67.97	109	12.25	61.27	98	75-130	10	30	u
2-Chlorotoluene	ND	62.50	13.58	67.92	109	11.75	58.76	94	75-125	14	30	u
4-Chlorotoluene	ND	62.50	13.76	68.82	110	12.96	64.81	104	75-130	6	30	u
tert-Butylbenzene	ND	62.50	12.19	60.94	98	11.49	57.46	92	70-130	6	30	u
1,2,4-Trimethylbenzene	ND	62.50	13.12	65.61	105	11.58	57.92	93	75-130	12	30	u
sec-Butylbenzene	ND	62.50	11.95	59.74	96	11.11	55.57	89	70-125	7	30	u
para-Isopropyl Toluene	ND	62.50	11.98	59.91	96	11.52	57.61	92	75-130	4	30	u
1,3-Dichlorobenzene	1.458 J	62.50	13.12	65.58	103	12.23	61.14	95	75-125	7	30	u
1,4-Dichlorobenzene	7.140	62.50	13.98	69.92	100	13.63	68.16	98	75-125	3	30	u
n-Butylbenzene	ND	62.50	12.58	62.89	101	10.94	54.72	88	70-135	14	30	u
1,2-Dichlorobenzene	0.6685 J	62.50	13.18	65.90	104	11.87	59.36	94	70-120	10	30	u
1,2-Dibromo-3-Chloropropane	ND	62.50	11.94	59.72	96	10.92	54.62	87	50-130	9	30	u
1,2,4-Trichlorobenzene	ND	62.50	11.99	59.95	96	10.96	54.82	88	65-135	9	30	u
Hexachlorobutadiene	ND	62.50	11.16	55.80	89	10.75	53.74	86	50-140	4	30	u
Naphthalene	ND	62.50	10.65	53.24	85	9.740	48.70	78	55-140	9	30	u
1,2,3-Trichlorobenzene	ND	62.50	12.64	63.19	101	11.26	56.31	90	55-140	12	30	u
Dibromofluoromethane		250.0	55.24	276.2	110	54.01	270.0	108	85-115			u
1,2-Dichloroethane-d4		250.0	63.73	318.6	**127***	59.09	295.4	118	70-120			u
Toluene-d8		250.0	51.93	259.6	104	49.44	247.2	99	85-120			u
Bromofluorobenzene		250.0	50.37	251.8	101	49.41	247.0	99	75-120			u

ISTD (ICAL hfp14)	ICAL Area	MS Area	%Drift	ICAL RT	MS RT	Drift
Pentafluorobenzene	1032422	1210709	17.27	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	1856895	12.70	11.26	11.25	-0.01
Chlorobenzene-d5	1426621	1617821	13.40	15.76	15.75	-0.01
1,4-Dichlorobenzene-d4	722873	946824	30.98	18.61	18.60	-0.01

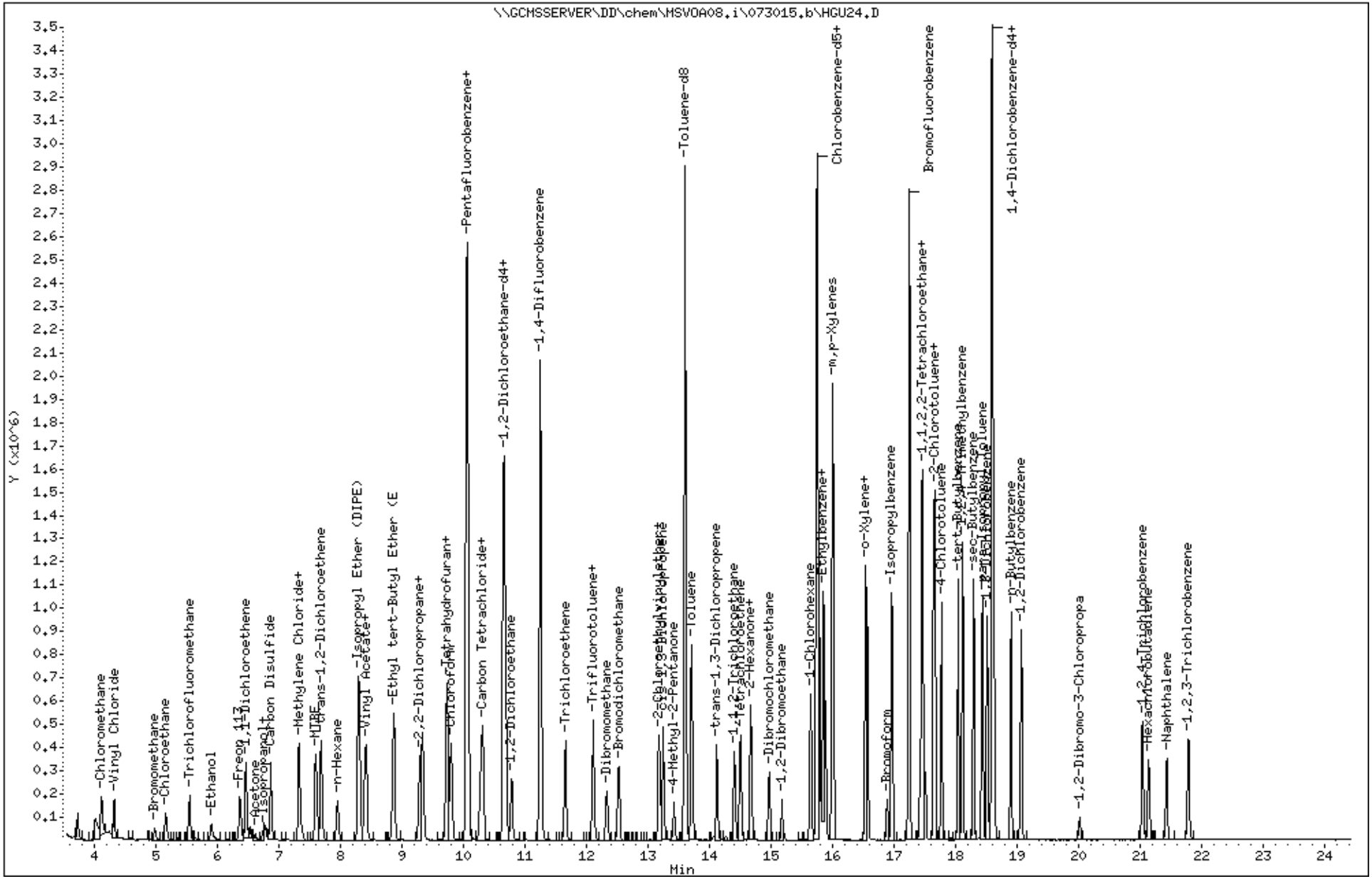
ISTD (ICAL hfp14)	ICAL Area	MSD Area	%Drift	ICAL RT	MSD RT	Drift
Pentafluorobenzene	1032422	1260902	22.13	10.06	10.05	-0.01
1,4-Difluorobenzene	1647573	2052580	24.58	11.26	11.25	-0.01
Chlorobenzene-d5	1426621	1774853	24.41	15.76	15.75	-0.01
1,4-Dichlorobenzene-d4	722873	992628	37.32	18.61	18.60	-0.01

DJA 07/31/15 : Was diluted due to foaming. [general version]

Analyst: KKM Date: 08/06/15 Reviewer: LW Date: 08/10/15

+=high bias -=low bias b=noncompliant c=CCV u=use v=ICV

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU24.D
Date : 30-JUL-2015 21:18
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ms,QC797770,225693,S27558,.005/100,S27556,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU24.D
Report Date: 30-Jul-2015 21:48

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU24.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 21:18 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ms,QC797770,225693,S27558,.005/100,S27556,
Misc Info : .005/100,S27533,.005/100,S26064,.005/100
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 24
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.718	3.718	(0.370)	124239	10.9373	10.9373
2 Chloromethane	50	4.112	4.103	(0.409)	183953	9.51466	9.5146
3 Vinyl Chloride	62	4.319	4.310	(0.430)	174229	10.8330	10.8330
4 Bromomethane	94	4.980	4.970	(0.496)	37189	4.30320	4.3031
5 Chloroethane	64	5.158	5.148	(0.513)	117081	10.0957	10.0956
6 Trichlorofluoromethane	101	5.543	5.533	(0.551)	179007	9.85908	9.8590
7 Ethanol	45	5.898	5.888	(0.587)	126225	1117.13	1117.1321
8 Freon 113	101	6.361	6.351	(0.633)	103412	9.75158	9.7515
9 1,1-Dichloroethene	96	6.460	6.460	(0.643)	121635	10.7980	10.7979
10 Acetone	43	6.608	6.598	(0.657)	42030	9.84790	9.8478
11 Isopropanol	45	6.736	6.726	(0.670)	68075	116.370	116.3704
12 Iodomethane	142	6.785	6.775	(0.675)	80988	14.1978	14.1977
13 Carbon Disulfide	76	6.864	6.854	(0.683)	536999	11.5523	11.5523
14 Methylene Chloride	84	7.328	7.318	(0.729)	188425	13.2262	13.2261
15 tert-Butyl Alcohol (TBA)	59	7.367	7.357	(0.733)	46897	62.0071	62.0071
16 MTBE	73	7.594	7.584	(0.756)	424432	13.3815	13.3815

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU24.D
Report Date: 30-Jul-2015 21:48

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	7.683	7.673	(0.764)	165115	12.8890	12.8889
	18 n-Hexane	57	7.949	7.939	(0.791)	88048	18.4663	18.4662
	19 Isopropyl Ether (DIPE)	45	8.294	8.284	(0.825)	917683	13.7256	13.7255
	20 Vinyl Acetate	43	8.393	8.383	(0.835)	410244	20.9698	20.9697
	21 1,1-Dichloroethane	63	8.422	8.403	(0.838)	384089	13.4659	13.4659
	22 Ethyl tert-Butyl Ether (ETBE)	59	8.866	8.847	(0.882)	663355	13.9640	13.9640
	23 2,2-Dichloropropane	77	9.290	9.281	(0.924)	257637	14.5229	14.5229
	24 2-Butanone	43	9.330	9.320	(0.928)	66923	12.3169	12.3169
	25 cis-1,2-Dichloroethene	96	9.340	9.330	(0.929)	189345	13.1873	13.1873
	26 Tetrahydrofuran	42	9.724	9.714	(0.968)	351640	120.928	120.9282
	27 Bromochloromethane	128	9.734	9.724	(0.969)	81243	12.0517	12.0517
	28 Chloroform	83	9.793	9.784	(0.974)	368626	15.1079	15.1079
*	29 Pentafluorobenzene	168	10.050	10.040	(1.000)	1210709	50.0000	
	30 Dibromofluoromethane	113	10.070	10.050	(1.002)	726152	55.2369	55.2369
	31 1,1,1-Trichloroethane	97	10.070	10.050	(1.002)	257251	14.7282	14.7282
	32 Carbon Tetrachloride	117	10.277	10.267	(0.913)	206908	14.5117	14.5116
	33 1,1-Dichloropropene	75	10.316	10.306	(0.917)	246013	13.3393	13.3392
	34 1,2-Dichloroethane-d4	65	10.661	10.651	(0.947)	821499	63.7285	63.7285
	35 Methyl tert-Amyl Ether (TAME)	73	10.691	10.671	(0.950)	462554	12.8915	12.8914
	36 Benzene	78	10.651	10.642	(0.947)	720566	13.7469	13.7469
	37 1,2-Dichloroethane	62	10.780	10.770	(0.958)	279781	15.8643	15.8643
*	38 1,4-Difluorobenzene	114	11.253	11.233	(1.000)	1856895	50.0000	
	39 Trichloroethene	95	11.657	11.648	(1.036)	168906	13.1807	13.1806
	40 Trifluorotoluene	146	12.101	12.082	(1.075)	2209	0.11689	0.1168(a)
	41 1,2-Dichloropropane	63	12.111	12.101	(1.076)	216510	13.3208	13.3208
	42 Dibromomethane	93	12.328	12.318	(1.096)	107738	13.7876	13.7876
	43 Bromodichloromethane	83	12.525	12.506	(1.113)	257897	14.3342	14.3341
	44 2-Chloroethylvinylether	63	13.176	12.950	(1.171)	122	0.03382	0.0338(a)
	45 Tetramethyl THF	43	13.186	13.166	(1.172)	413197	12.6727	12.6727
	46 cis-1,3-Dichloropropene	75	13.245	13.236	(1.177)	293512	13.4152	13.4151
	47 4-Methyl-2-Pentanone	43	13.423	13.413	(1.193)	161156	13.4351	13.4351
	48 Toluene-d8	98	13.600	13.591	(0.863)	2046531	51.9281	51.9281
	49 Toluene	92	13.709	13.699	(0.870)	381168	12.7958	12.7957
	50 trans-1,3-Dichloropropene	75	14.123	14.113	(0.897)	223623	12.3848	12.3848
	51 1,1,2-Trichloroethane	85	14.409	14.399	(0.915)	74844	13.5781	13.5780
	52 Tetrachloroethene	166	14.508	14.498	(0.921)	150533	12.8127	12.8126
	53 2-Hexanone	43	14.676	14.666	(0.932)	106628	12.6209	12.6209
	54 1,3-Dichloropropane	76	14.676	14.666	(0.932)	243319	13.4540	13.4539
	55 Dibromochloromethane	129	14.971	14.962	(0.951)	162449	12.8162	12.8162
	56 1,2-Dibromoethane	107	15.179	15.169	(0.964)	130421	12.9857	12.9856
	57 1-Chlorohexane	91	15.652	15.642	(0.994)	194470	11.1081	11.1080
*	58 Chlorobenzene-d5	117	15.751	15.741	(1.000)	1617821	50.0000	
	59 Chlorobenzene	112	15.790	15.780	(1.002)	524082	15.6628	15.6628
	60 Ethylbenzene	91	15.849	15.839	(1.006)	801492	14.1748	14.1748
	61 1,1,1,2-Tetrachloroethane	131	15.889	15.879	(1.009)	172583	14.1428	14.1428
	62 m,p-Xylenes	106	16.007	15.997	(1.016)	549556	26.4873	26.4872
	63 o-Xylene	106	16.540	16.530	(1.050)	295104	13.9553	13.9552

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU24.D
Report Date: 30-Jul-2015 21:48

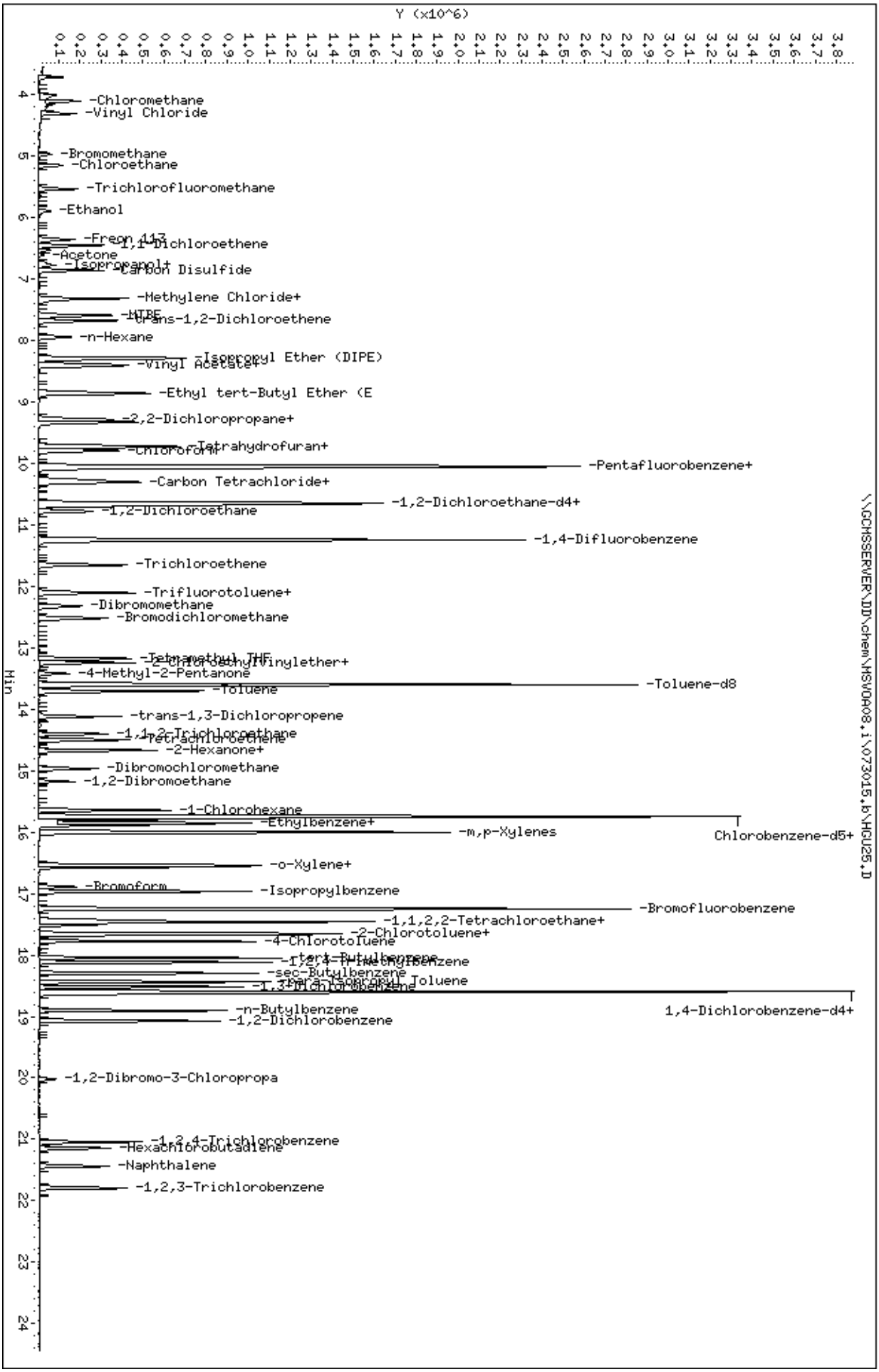
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	16.569	16.559	(1.052)	453230	12.8705	12.8705
65 Bromoform	173	16.895	16.885	(1.073)	86167	11.1943	11.1943
66 Isopropylbenzene	105	16.964	16.954	(0.912)	702286	11.9798	11.9798
67 Bromofluorobenzene	95	17.250	17.240	(0.927)	932766	50.3696	50.3695
68 1,1,2,2-Tetrachloroethane	83	17.427	17.417	(0.937)	162644	12.5837	12.5837
69 Bromobenzene	156	17.457	17.447	(0.938)	209737	12.8716	12.8715
70 Propylbenzene	91	17.467	17.457	(0.939)	895198	12.7769	12.7768
71 1,2,3-Trichloropropane	110	17.516	17.506	(0.942)	36860	12.3623	12.3622
72 2-Chlorotoluene	91	17.644	17.634	(0.949)	657914	13.5849	13.5848
73 1,3,5-Trimethylbenzene	105	17.664	17.654	(0.950)	638097	13.5946	13.5945
74 4-Chlorotoluene	91	17.772	17.772	(0.955)	597290	13.7634	13.7634
75 tert-Butylbenzene	119	18.049	18.039	(0.970)	523195	12.1882	12.1881
76 1,2,4-Trimethylbenzene	105	18.118	18.108	(0.974)	638389	13.1223	13.1222
77 sec-Butylbenzene	105	18.295	18.285	(0.984)	754552	11.9477	11.9476
78 para-Isopropyl Toluene	119	18.443	18.433	(0.992)	595835	11.9816	11.9816
79 1,3-Dichlorobenzene	146	18.522	18.512	(0.996)	380245	13.1155	13.1154
* 80 1,4-Dichlorobenzene-d4	152	18.601	18.591	(1.000)	946824	50.0000	
81 1,4-Dichlorobenzene	146	18.631	18.621	(1.002)	401852	13.9833	13.9833
82 n-Butylbenzene	91	18.907	18.897	(1.016)	555572	12.5774	12.5773
83 1,2-Dichlorobenzene	146	19.074	19.065	(1.025)	366385	13.1801	13.1801
84 1,2-Dibromo-3-Chloropropane	75	20.021	20.011	(1.076)	24747	11.9447	11.9447
85 1,2,4-Trichlorobenzene	180	21.047	21.037	(1.131)	191506	11.9903	11.9902
86 Hexachlorobutadiene	225	21.146	21.136	(1.137)	85299	11.1608	11.1608
87 Naphthalene	128	21.441	21.432	(1.153)	340684	10.6478	10.6478
88 1,2,3-Trichlorobenzene	180	21.797	21.777	(1.172)	182424	12.6381	12.6381

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU25.D
Date : 30-JUL-2015 21:51
Client ID: DYNA P&T
Sample Info: msd,QC797771,225693,S27558,,005/100,S27556,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU25.D
Report Date: 30-Jul-2015 22:21

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU25.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 21:51 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : msd,QC797771,225693,S27558,.005/100,S27556,
Misc Info : .005/100,S27533,.005/100,S26064,.005/100/
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 25
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.724	3.718	(0.371)	122356	10.3428	10.3428
2 Chloromethane	50	4.109	4.103	(0.409)	185247	9.20018	9.2001
3 Vinyl Chloride	62	4.316	4.310	(0.430)	171855	10.2601	10.2600
4 Bromomethane	94	4.977	4.970	(0.495)	45458	5.05056	5.0505
5 Chloroethane	64	5.154	5.148	(0.513)	120396	9.96825	9.9682
6 Trichlorofluoromethane	101	5.539	5.533	(0.551)	175803	9.29720	9.2972
7 Ethanol	45	5.894	5.888	(0.587)	110289	937.240	937.2395
8 Freon 113	101	6.358	6.351	(0.633)	104698	9.47990	9.4799
9 1,1-Dichloroethene	96	6.456	6.460	(0.643)	120677	10.2864	10.2864
10 Acetone	43	6.614	6.598	(0.658)	39503	8.88741	8.8874
11 Isopropanol	45	6.742	6.726	(0.671)	60884	99.9340	99.9340
12 Iodomethane	142	6.782	6.775	(0.675)	106454	17.1148	17.1148
13 Carbon Disulfide	76	6.861	6.854	(0.683)	519434	10.7296	10.7296
14 Methylene Chloride	84	7.324	7.318	(0.729)	193316	13.0293	13.0293
15 tert-Butyl Alcohol (TBA)	59	7.373	7.357	(0.734)	45409	57.6490	57.6490
16 MTBE	73	7.600	7.584	(0.757)	406152	12.2955	12.2954

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU25.D
Report Date: 30-Jul-2015 22:21

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	7.689	7.673	(0.765)	153504	11.5056	11.5056
	18 n-Hexane	57	7.955	7.939	(0.792)	85466	17.2112	17.2111
	19 Isopropyl Ether (DIPE)	45	8.291	8.284	(0.825)	926409	13.3045	13.3045
	20 Vinyl Acetate	43	8.389	8.383	(0.835)	435521	21.3757	21.3756
	21 1,1-Dichloroethane	63	8.419	8.403	(0.838)	395167	13.3028	13.3028
	22 Ethyl tert-Butyl Ether (ETBE)	59	8.863	8.847	(0.882)	651784	13.1743	13.1742
	23 2,2-Dichloropropane	77	9.287	9.281	(0.924)	256767	13.8977	13.8977
	24 2-Butanone	43	9.326	9.320	(0.928)	67121	11.8616	11.8616
	25 cis-1,2-Dichloroethene	96	9.336	9.330	(0.929)	194834	13.0295	13.0294
	26 Tetrahydrofuran	42	9.721	9.714	(0.968)	351276	115.994	115.9944
	27 Bromochloromethane	128	9.731	9.724	(0.969)	83314	11.8669	11.8668
	28 Chloroform	83	9.800	9.784	(0.975)	345764	13.6068	13.6068
*	29 Pentafluorobenzene	168	10.046	10.040	(1.000)	1260902	50.0000	
	30 Dibromofluoromethane	113	10.066	10.050	(1.002)	739420	54.0072	54.0071
	31 1,1,1-Trichloroethane	97	10.066	10.050	(1.002)	235841	12.9649	12.9649
	32 Carbon Tetrachloride	117	10.273	10.267	(0.913)	202275	12.8342	12.8342
	33 1,1-Dichloropropene	75	10.313	10.306	(0.917)	247007	12.1163	12.1163
	34 1,2-Dichloroethane-d4	65	10.658	10.651	(0.947)	841936	59.0871	59.0871
	35 Methyl tert-Amyl Ether (TAME)	73	10.687	10.671	(0.950)	451130	11.3744	11.3744
	36 Benzene	78	10.648	10.642	(0.947)	692074	11.9446	11.9445
	37 1,2-Dichloroethane	62	10.786	10.770	(0.959)	272661	13.9866	13.9866
*	38 1,4-Difluorobenzene	114	11.250	11.233	(1.000)	2052580	50.0000	
	39 Trichloroethene	95	11.654	11.648	(1.036)	163929	11.5727	11.5727
	40 Trifluorotoluene	146	12.088	12.082	(1.075)	2356	0.11277	0.1127(a)
	41 1,2-Dichloropropane	63	12.108	12.101	(1.076)	204265	11.3694	11.3693
	42 Dibromomethane	93	12.335	12.318	(1.096)	105133	12.1716	12.1716
	43 Bromodichloromethane	83	12.522	12.506	(1.113)	251391	12.6405	12.6405
	44 2-Chloroethylvinylether	63	13.252	12.950	(1.178)	1702	0.42524	0.4252(a)
	45 Tetramethyl THF	43	13.183	13.166	(1.172)	393601	10.9209	10.9208
	46 cis-1,3-Dichloropropene	75	13.252	13.236	(1.178)	278923	11.5330	11.5329
	47 4-Methyl-2-Pentanone	43	13.419	13.413	(1.193)	153097	11.5465	11.5464
	48 Toluene-d8	98	13.607	13.591	(0.864)	2137706	49.4425	49.4425
	49 Toluene	92	13.705	13.699	(0.870)	381131	11.6625	11.6625
	50 trans-1,3-Dichloropropene	75	14.120	14.113	(0.897)	222937	11.2544	11.2544
	51 1,1,2-Trichloroethane	85	14.406	14.399	(0.915)	66627	11.0181	11.0180
	52 Tetrachloroethene	166	14.504	14.498	(0.921)	143220	11.1117	11.1116
	53 2-Hexanone	43	14.672	14.666	(0.932)	101189	10.9175	10.9174
	54 1,3-Dichloropropane	76	14.672	14.666	(0.932)	240128	12.1028	12.1028
	55 Dibromochloromethane	129	14.968	14.962	(0.951)	155720	11.1984	11.1983
	56 1,2-Dibromoethane	107	15.175	15.169	(0.964)	132243	12.0021	12.0020
	57 1-Chlorohexane	91	15.648	15.642	(0.994)	178418	9.28956	9.2895
*	58 Chlorobenzene-d5	117	15.747	15.741	(1.000)	1774853	50.0000	
	59 Chlorobenzene	112	15.787	15.780	(1.002)	535944	14.6002	14.6001
	60 Ethylbenzene	91	15.856	15.839	(1.007)	767477	12.3724	12.3723
	61 1,1,1,2-Tetrachloroethane	131	15.885	15.879	(1.009)	163374	12.2036	12.2036
	62 m,p-Xylenes	106	16.004	15.997	(1.016)	547234	24.0418	24.0417
	63 o-Xylene	106	16.536	16.530	(1.050)	284223	12.2516	12.2515

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU25.D
Report Date: 30-Jul-2015 22:21

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	16.566	16.559	(1.052)	440449	11.4009	11.4009
65 Bromoform	173	16.891	16.885	(1.073)	85400	10.1131	10.1130
66 Isopropylbenzene	105	16.970	16.954	(0.912)	685114	11.1476	11.1476
67 Bromofluorobenzene	95	17.246	17.240	(0.927)	959166	49.4052	49.4051
68 1,1,2,2-Tetrachloroethane	83	17.424	17.417	(0.937)	159670	11.7836	11.7835
69 Bromobenzene	156	17.453	17.447	(0.938)	203076	11.8877	11.8876
70 Propylbenzene	91	17.463	17.457	(0.939)	875217	11.9153	11.9152
71 1,2,3-Trichloropropane	110	17.513	17.506	(0.942)	37179	11.8940	11.8939
72 2-Chlorotoluene	91	17.641	17.634	(0.949)	596657	11.7515	11.7515
73 1,3,5-Trimethylbenzene	105	17.670	17.654	(0.950)	603007	12.2542	12.2541
74 4-Chlorotoluene	91	17.779	17.772	(0.956)	589689	12.9613	12.9612
75 tert-Butylbenzene	119	18.045	18.039	(0.970)	517199	11.4925	11.4925
76 1,2,4-Trimethylbenzene	105	18.114	18.108	(0.974)	590862	11.5849	11.5849
77 sec-Butylbenzene	105	18.292	18.285	(0.984)	735829	11.1136	11.1136
78 para-Isopropyl Toluene	119	18.440	18.433	(0.992)	600704	11.5221	11.5221
79 1,3-Dichlorobenzene	146	18.519	18.512	(0.996)	371678	12.2284	12.2284
* 80 1,4-Dichlorobenzene-d4	152	18.597	18.591	(1.000)	992628	50.0000	
81 1,4-Dichlorobenzene	146	18.627	18.621	(1.002)	410699	13.6318	13.6317
82 n-Butylbenzene	91	18.903	18.897	(1.016)	506843	10.9447	10.9447
83 1,2-Dichlorobenzene	146	19.071	19.065	(1.025)	345994	11.8723	11.8722
84 1,2-Dibromo-3-Chloropropane	75	20.018	20.011	(1.076)	23726	10.9232	10.9231
85 1,2,4-Trichlorobenzene	180	21.043	21.037	(1.132)	183578	10.9635	10.9635
86 Hexachlorobutadiene	225	21.142	21.136	(1.137)	86114	10.7475	10.7475
87 Naphthalene	128	21.438	21.432	(1.153)	326714	9.74002	9.7400
88 1,2,3-Trichlorobenzene	180	21.793	21.777	(1.172)	170438	11.2629	11.2628

QC Flag Legend

a - Target compound detected but, quantitated amount
Below Limit Of Quantitation(BLOQ).

Initial Calibration Raw Data

CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475253923005 File : hfp05 Time : 25-JUN-2015 10:29

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	5962	25.78	
75	30% - 60% of mass 95	11251	48.65	
95		23128	100.00	
96	5% - 9% of mass 95	1708	7.38	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18311	79.17	
175	5% - 9% of mass 174	1349	7.37	
176	> 95% and < 101% of mass 174	18027	98.45	
177	5% - 9% of mass 176	1178	6.53	

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\062515.b\HFP05.D

Date : 25-JUN-2015 10:29

Client ID: bfb tune std

Instrument: MSVOA08.i

Sample Info: BFB,S27180

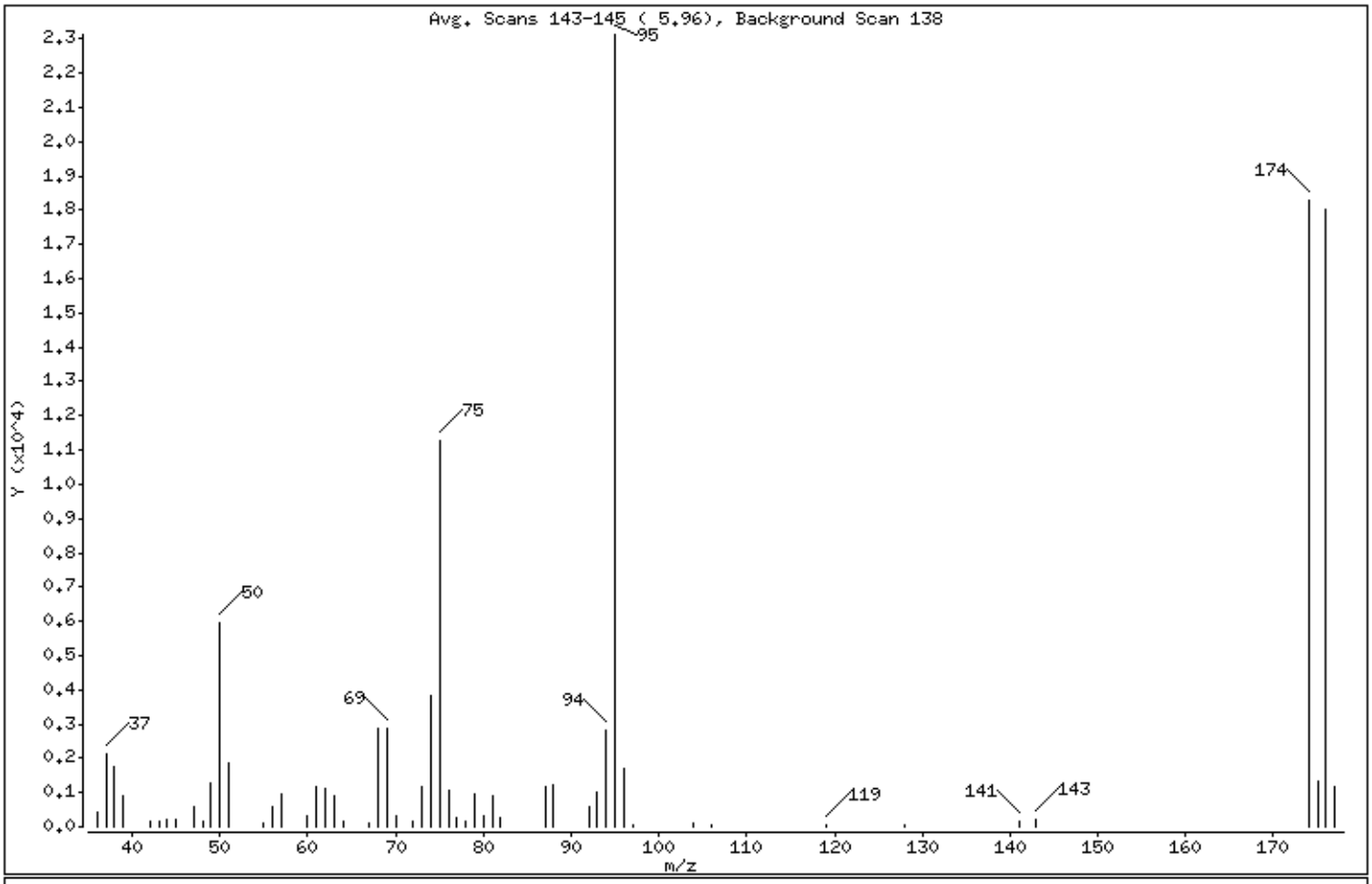
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	25.78
75	30.00 - 60.00% of mass 95	48.65
96	5.00 - 9.00% of mass 95	7.38
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	79.17
175	5.00 - 9.00% of mass 174	5.83 (7.37)
176	95.01 - 100.99% of mass 174	77.94 (98.45)
177	5.00 - 9.00% of mass 176	5.09 (6.53)

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\062515.b\HFP05.D

Date : 25-JUN-2015 10:29

Client ID: bfb tune std

Instrument: MSVOA08.i

Sample Info: BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

Data File: HFP05.D
Spectrum: Avg. Scans 143-145 (5.96), Background Scan 138
Location of Maximum: 95.00
Number of points: 54

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	409	56.00	574	75.00	11251	96.00	1708
37.00	2138	57.00	972	76.00	1058	97.00	67
38.00	1744	60.00	321	77.00	247	104.00	108
39.00	886	61.00	1171	78.00	174	106.00	54
42.00	185	62.00	1095	79.00	956	119.00	53
43.00	143	63.00	899	80.00	305	128.00	52
44.00	226	64.00	163	81.00	917	141.00	170
45.00	213	67.00	88	82.00	250	143.00	187
47.00	594	68.00	2851	87.00	1175	174.00	18304
48.00	166	69.00	2887	88.00	1220	175.00	1349
49.00	1294	70.00	321	92.00	559	176.00	18024
50.00	5962	72.00	139	93.00	996	177.00	1178
51.00	1858	73.00	1186	94.00	2792		
55.00	96	74.00	3802	95.00	23128		

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\062515.b\HFP05.D

Date : 25-JUN-2015 10:29

Client ID: bfb tune std

Instrument: MSVOA08.i

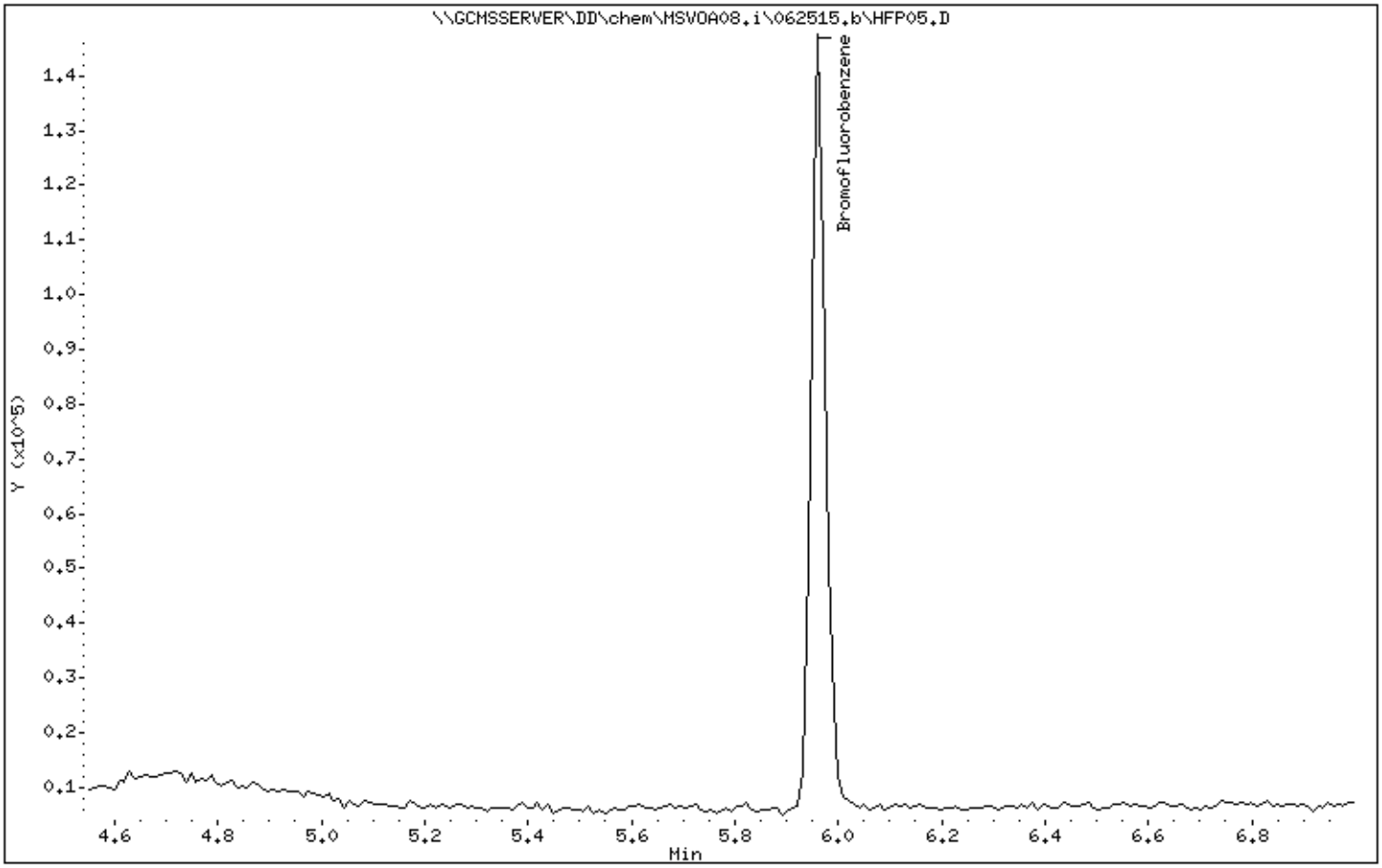
Sample Info: BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00



CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475304292006 File : hgu06 Time : 30-JUL-2015 10:16

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	9230	25.37	
75	30% - 60% of mass 95	18415	50.62	
95		36376	100.00	
96	5% - 9% of mass 95	2570	7.07	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	26269	72.22	
175	5% - 9% of mass 174	2139	8.14	
176	> 95% and < 101% of mass 174	25927	98.70	
177	5% - 9% of mass 176	1829	7.05	

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU06.D

Date : 30-JUL-2015 10:16

Client ID: bfb tune std

Instrument: MSVOA08.i

Sample Info: BFB,S27180

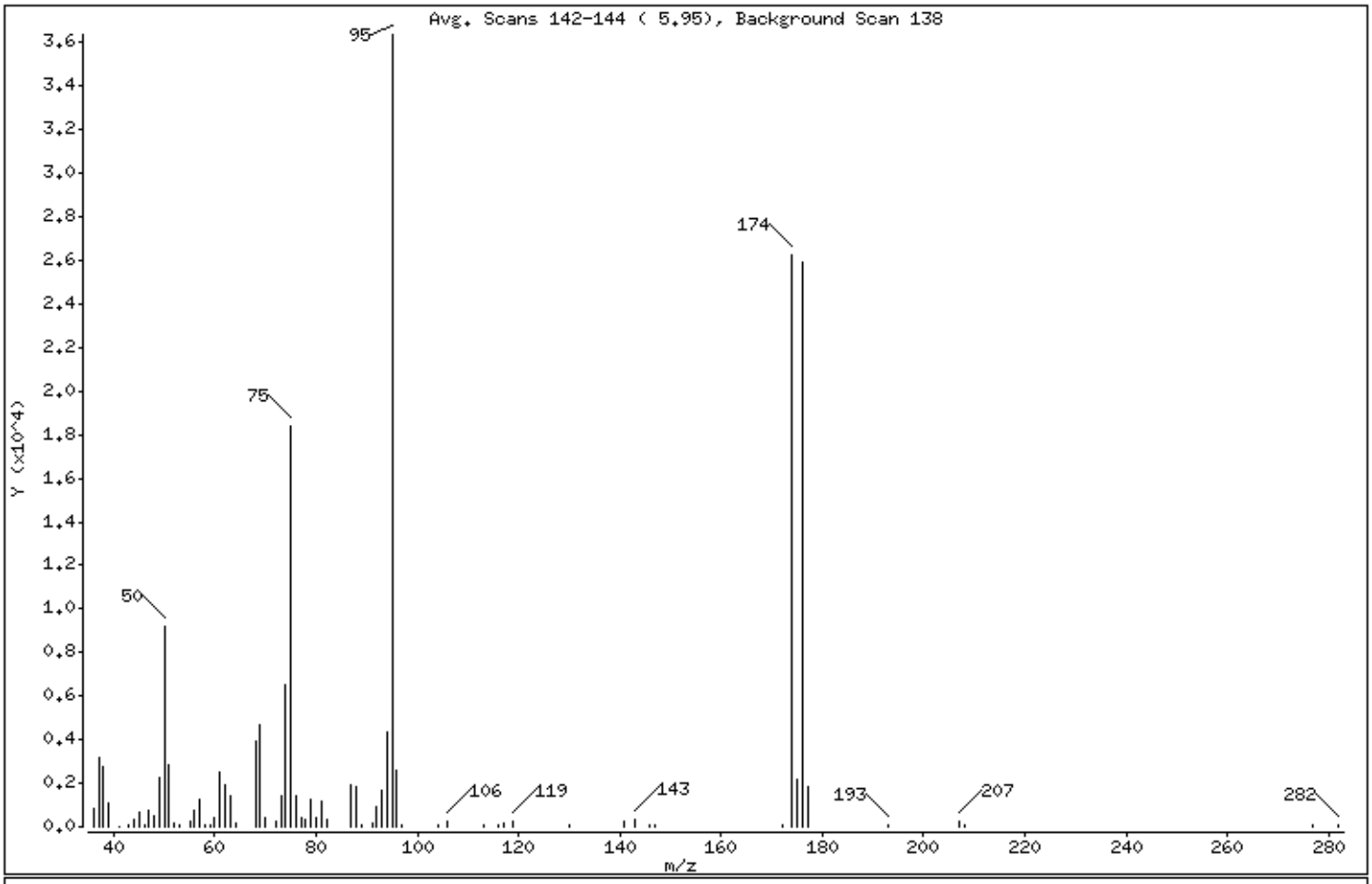
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	25.37
75	30.00 - 60.00% of mass 95	50.62
96	5.00 - 9.00% of mass 95	7.07
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	72.22
175	5.00 - 9.00% of mass 174	5.88 (8.14)
176	95.01 - 100.99% of mass 174	71.28 (98.70)
177	5.00 - 9.00% of mass 176	5.03 (7.05)

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU06.D

Date : 30-JUL-2015 10:16

Client ID: bfb tune std

Instrument: MSVOA08.i

Sample Info: BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

Data File: HGU06.D
Spectrum: Avg. Scans 142-144 (5.95), Background Scan 138
Location of Maximum: 95.00
Number of points: 71

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	805	57.00	1266	79.00	1226	117.00	174
37.00	3156	58.00	95	80.00	447	119.00	258
38.00	2775	59.00	64	81.00	1199	130.00	56
39.00	1076	60.00	450	82.00	318	141.00	259
41.00	25	61.00	2520	87.00	1899	143.00	342
43.00	90	62.00	1959	88.00	1840	146.00	120
44.00	308	63.00	1424	89.00	57	147.00	53
45.00	649	64.00	179	91.00	200	172.00	58
46.00	55	68.00	3955	92.00	952	174.00	26264
47.00	711	69.00	4724	93.00	1705	175.00	2139
48.00	507	70.00	417	94.00	4377	176.00	25920
49.00	2280	72.00	231	95.00	36376	177.00	1829
50.00	9230	73.00	1461	96.00	2570	193.00	57
51.00	2862	74.00	6554	97.00	57	207.00	228
52.00	194	75.00	18408	104.00	79	208.00	80
53.00	55	76.00	1433	106.00	221	277.00	52
55.00	268	77.00	414	113.00	63	282.00	58
56.00	738	78.00	375	116.00	71		

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU06.D

Date : 30-JUL-2015 10:16

Client ID: bfb tune std

Instrument: MSVOA08.i

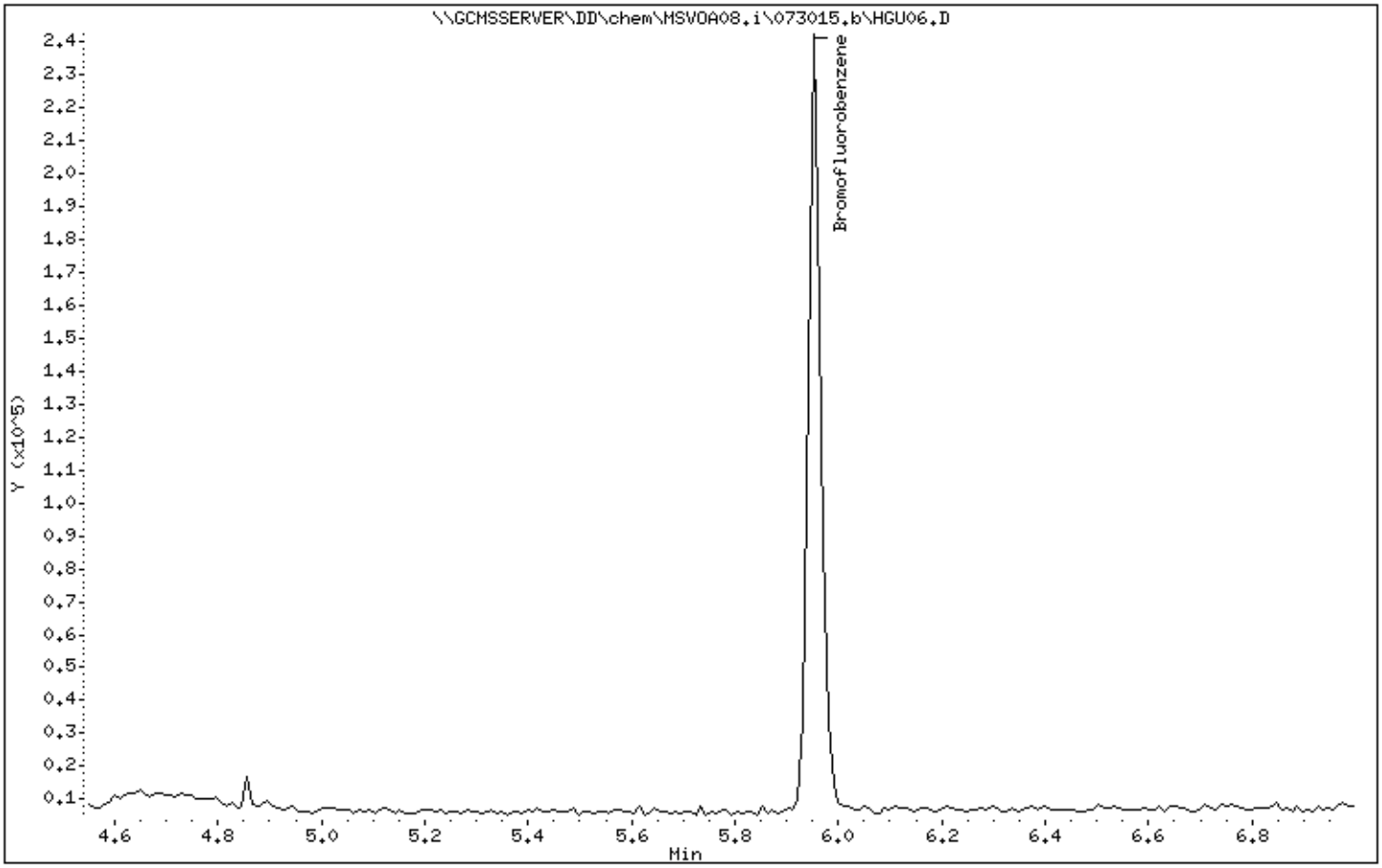
Sample Info: BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00



CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485271359002 File : ig702 Time : 07-JUL-2015 10:49

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	8478	30.49	
75	30% - 60% of mass 95	15441	55.53	
95		27808	100.00	
96	5% - 9% of mass 95	2013	7.24	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18113	65.14	
175	5% - 9% of mass 174	1377	7.60	
176	> 95% and < 101% of mass 174	18059	99.70	
177	5% - 9% of mass 176	1227	6.79	

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG702.D

Date : 07-JUL-2015 10:49

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

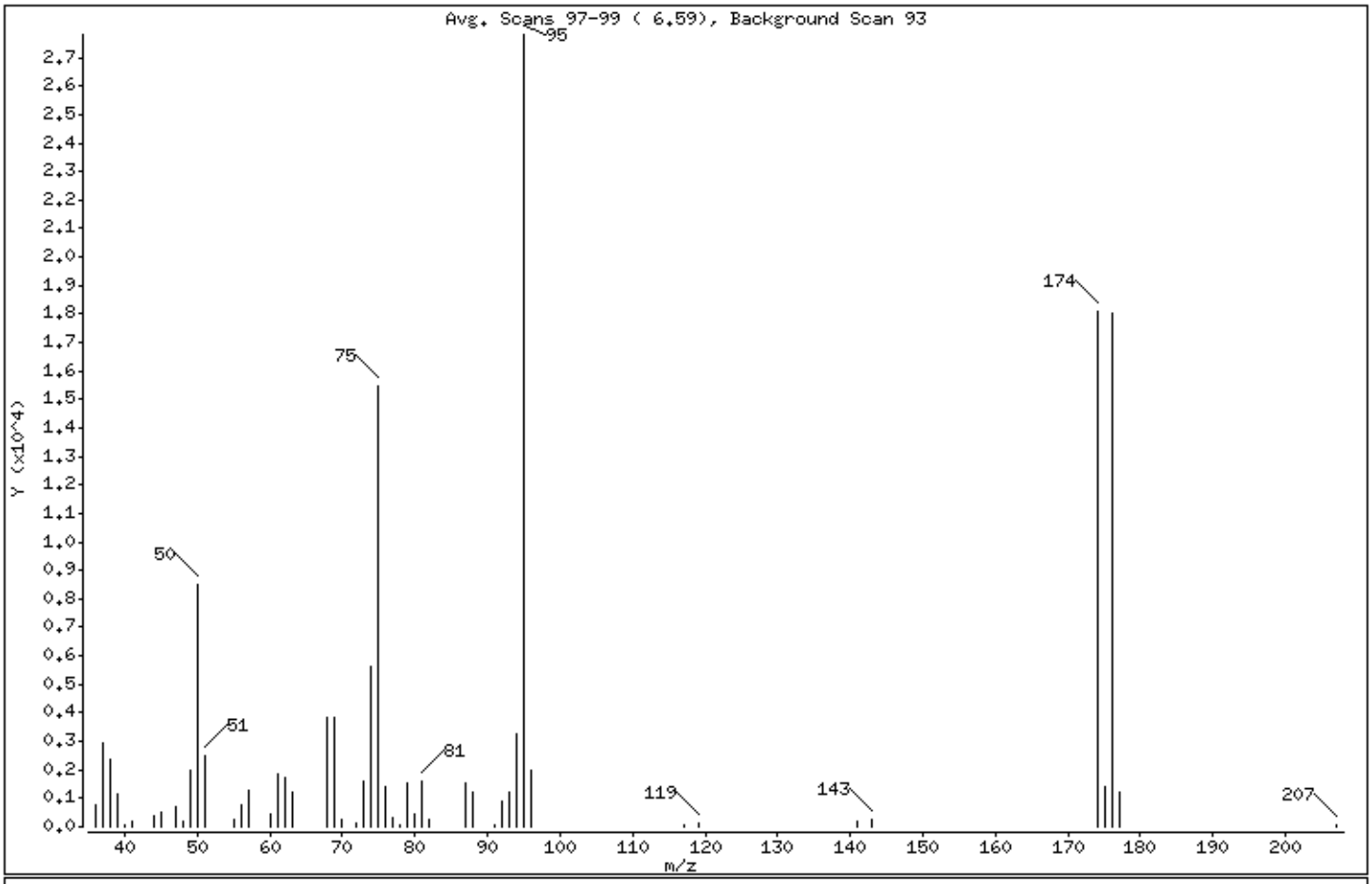
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	30.49
75	30.00 - 60.00% of mass 95	55.53
96	5.00 - 9.00% of mass 95	7.24
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	65.14
175	5.00 - 9.00% of mass 174	4.95 (7.60)
176	95.01 - 100.99% of mass 174	64.94 (99.70)
177	5.00 - 9.00% of mass 176	4.41 (6.79)

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG702.D

Date : 07-JUL-2015 10:49

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

Data File: IG702.D
Spectrum: Avg. Scans 97-99 (6.59), Background Scan 93
Location of Maximum: 95.00
Number of points: 51

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	770	55.00	241	75.00	15441	94.00	3246
37.00	2964	56.00	746	76.00	1396	95.00	27808
38.00	2390	57.00	1289	77.00	315	96.00	2013
39.00	1131	60.00	439	78.00	94	117.00	90
40.00	42	61.00	1873	79.00	1525	119.00	96
41.00	205	62.00	1711	80.00	424	141.00	218
44.00	373	63.00	1232	81.00	1573	143.00	250
45.00	534	68.00	3813	82.00	239	174.00	18112
47.00	673	69.00	3851	87.00	1506	175.00	1377
48.00	219	70.00	254	88.00	1231	176.00	18056
49.00	1975	72.00	97	91.00	85	177.00	1227
50.00	8478	73.00	1578	92.00	893	207.00	87
51.00	2491	74.00	5627	93.00	1204		

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG702.D

Date : 07-JUL-2015 10:49

Client ID: bfb tune std

Instrument: MSVOA09.i

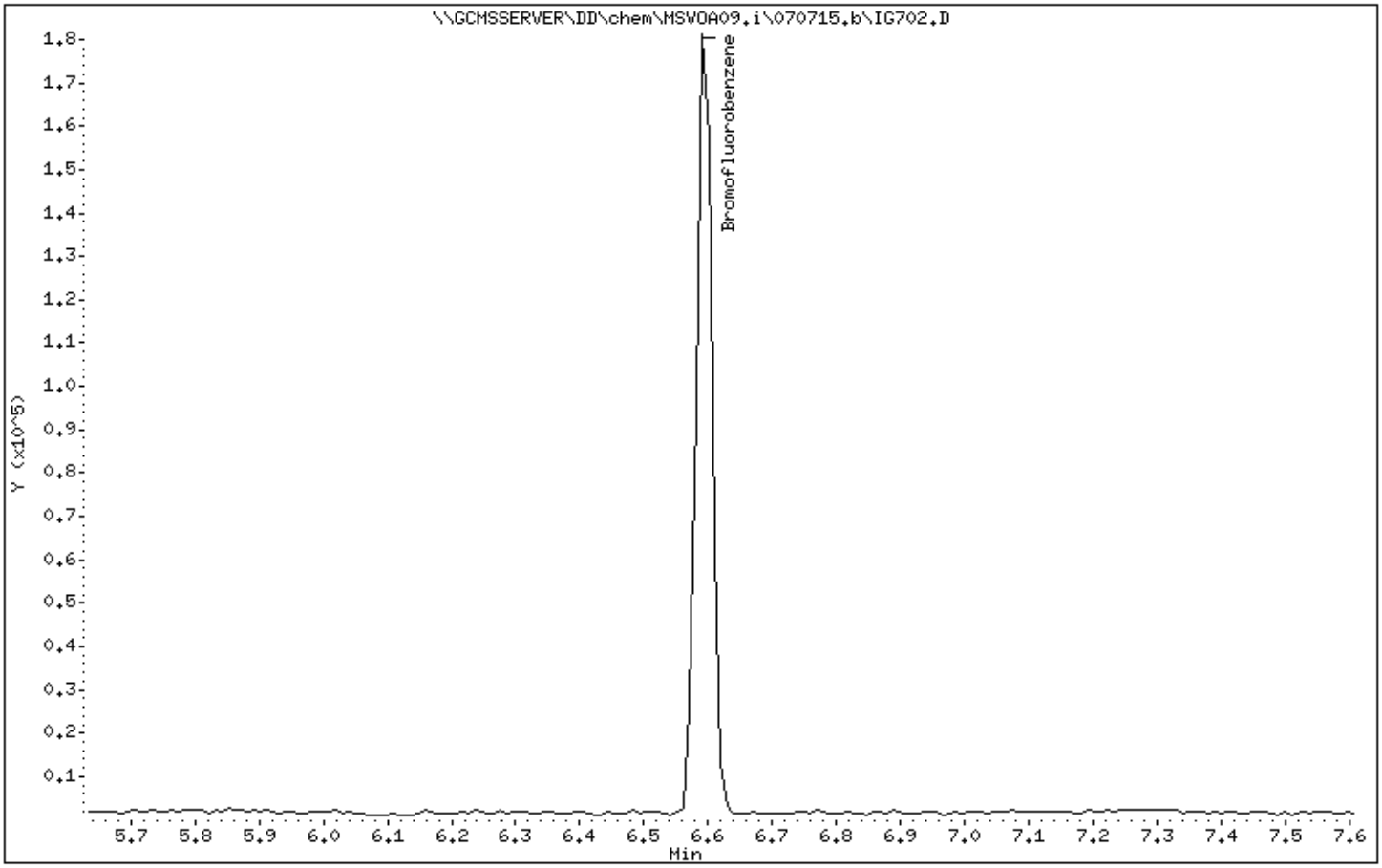
Sample Info: TUN,BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00



CURTIS & TOMPKINS BFB TUNE FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485305964003 File : igv03 Time : 31-JUL-2015 12:08

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	48674	33.84	
75	30% - 60% of mass 95	84784	58.95	
95		143818	100.00	
96	5% - 9% of mass 95	9854	6.85	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	91269	63.46	
175	5% - 9% of mass 174	6879	7.54	
176	> 95% and < 101% of mass 174	88248	96.69	
177	5% - 9% of mass 176	6075	6.88	

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/03/15

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV03.D

Date : 31-JUL-2015 12:08

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

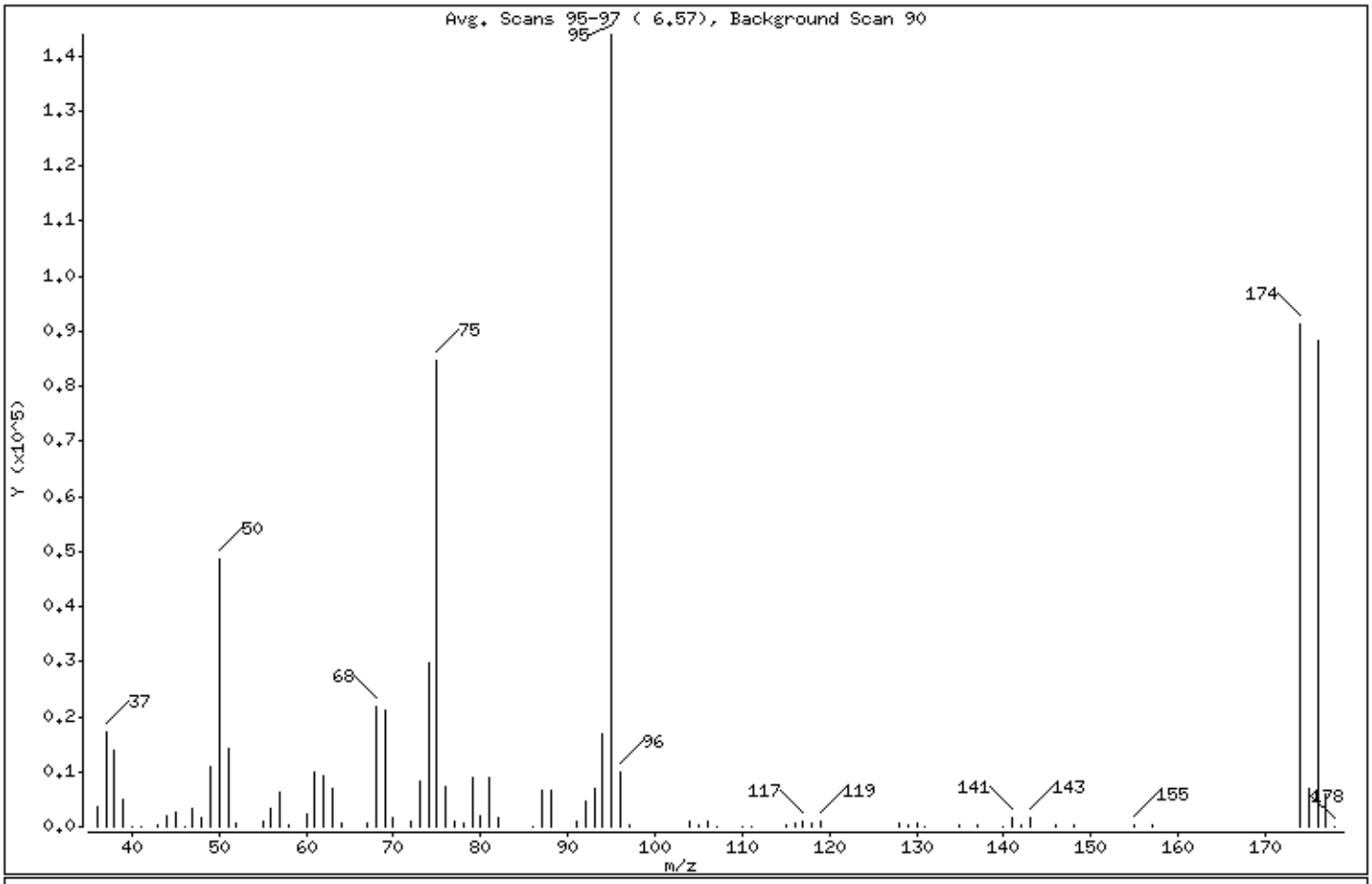
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	33.84
75	30.00 - 60.00% of mass 95	58.95
96	5.00 - 9.00% of mass 95	6.85
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	63.46
175	5.00 - 9.00% of mass 174	4.78 (7.54)
176	95.01 - 100.99% of mass 174	61.36 (96.69)
177	5.00 - 9.00% of mass 176	4.22 (6.88)

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU06.D

Date : 30-JUL-2015 10:16

Client ID: bfb tune std

Instrument: MSVOA08.i

Sample Info: BFB,S27180

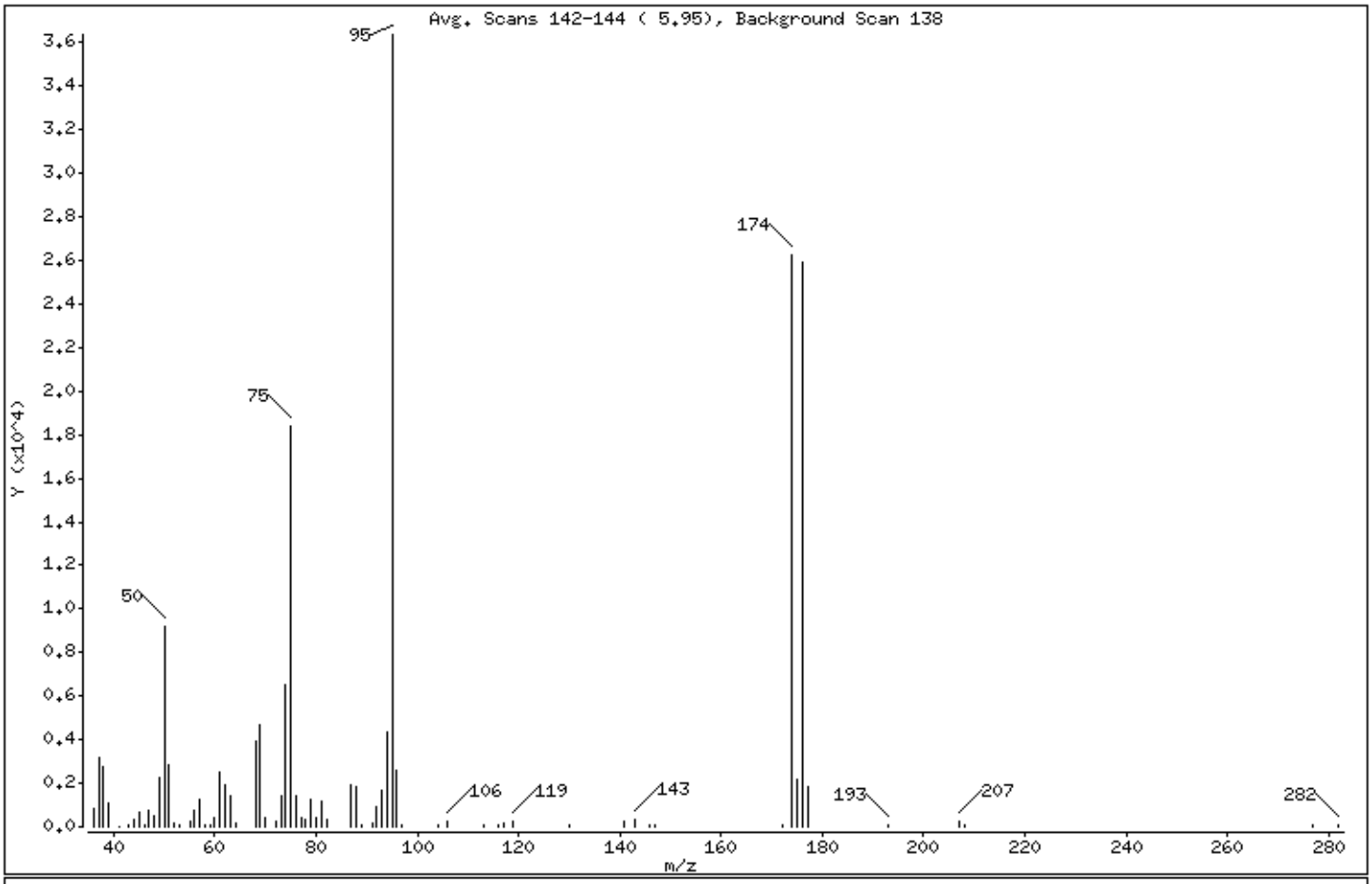
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	25.37
75	30.00 - 60.00% of mass 95	50.62
96	5.00 - 9.00% of mass 95	7.07
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	72.22
175	5.00 - 9.00% of mass 174	5.88 (8.14)
176	95.01 - 100.99% of mass 174	71.28 (98.70)
177	5.00 - 9.00% of mass 176	5.03 (7.05)

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU06.D

Date : 30-JUL-2015 10:16

Client ID: bfb tune std

Instrument: MSVOA08.i

Sample Info: BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

Data File: HGU06.D
Spectrum: Avg. Scans 142-144 (5.95), Background Scan 138
Location of Maximum: 95.00
Number of points: 71

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	805	57.00	1266	79.00	1226	117.00	174
37.00	3156	58.00	95	80.00	447	119.00	258
38.00	2775	59.00	64	81.00	1199	130.00	56
39.00	1076	60.00	450	82.00	318	141.00	259
41.00	25	61.00	2520	87.00	1899	143.00	342
43.00	90	62.00	1959	88.00	1840	146.00	120
44.00	308	63.00	1424	89.00	57	147.00	53
45.00	649	64.00	179	91.00	200	172.00	58
46.00	55	68.00	3955	92.00	952	174.00	26264
47.00	711	69.00	4724	93.00	1705	175.00	2139
48.00	507	70.00	417	94.00	4377	176.00	25920
49.00	2280	72.00	231	95.00	36376	177.00	1829
50.00	9230	73.00	1461	96.00	2570	193.00	57
51.00	2862	74.00	6554	97.00	57	207.00	228
52.00	194	75.00	18408	104.00	79	208.00	80
53.00	55	76.00	1433	106.00	221	277.00	52
55.00	268	77.00	414	113.00	63	282.00	58
56.00	738	78.00	375	116.00	71		

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG702.D

Date : 07-JUL-2015 10:49

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

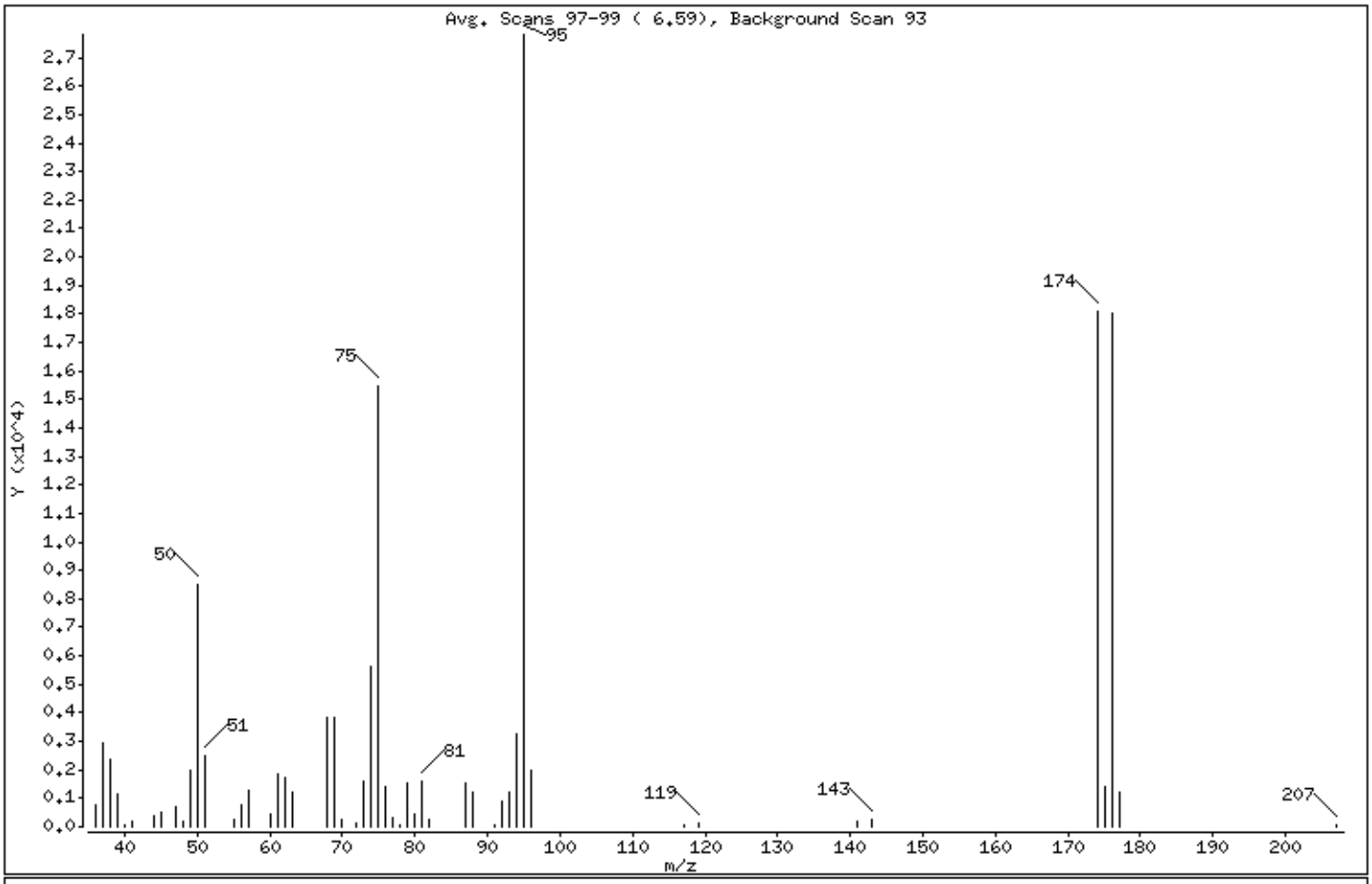
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	30.49
75	30.00 - 60.00% of mass 95	55.53
96	5.00 - 9.00% of mass 95	7.24
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	65.14
175	5.00 - 9.00% of mass 174	4.95 (7.60)
176	95.01 - 100.99% of mass 174	64.94 (99.70)
177	5.00 - 9.00% of mass 176	4.41 (6.79)

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG702.D

Date : 07-JUL-2015 10:49

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

Data File: IG702.D
Spectrum: Avg. Scans 97-99 (6.59), Background Scan 93
Location of Maximum: 95.00
Number of points: 51

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	770	55.00	241	75.00	15441	94.00	3246
37.00	2964	56.00	746	76.00	1396	95.00	27808
38.00	2390	57.00	1289	77.00	315	96.00	2013
39.00	1131	60.00	439	78.00	94	117.00	90
40.00	42	61.00	1873	79.00	1525	119.00	96
41.00	205	62.00	1711	80.00	424	141.00	218
44.00	373	63.00	1232	81.00	1573	143.00	250
45.00	534	68.00	3813	82.00	239	174.00	18112
47.00	673	69.00	3851	87.00	1506	175.00	1377
48.00	219	70.00	254	88.00	1231	176.00	18056
49.00	1975	72.00	97	91.00	85	177.00	1227
50.00	8478	73.00	1578	92.00	893	207.00	87
51.00	2491	74.00	5627	93.00	1204		

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV03.D

Date : 31-JUL-2015 12:08

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

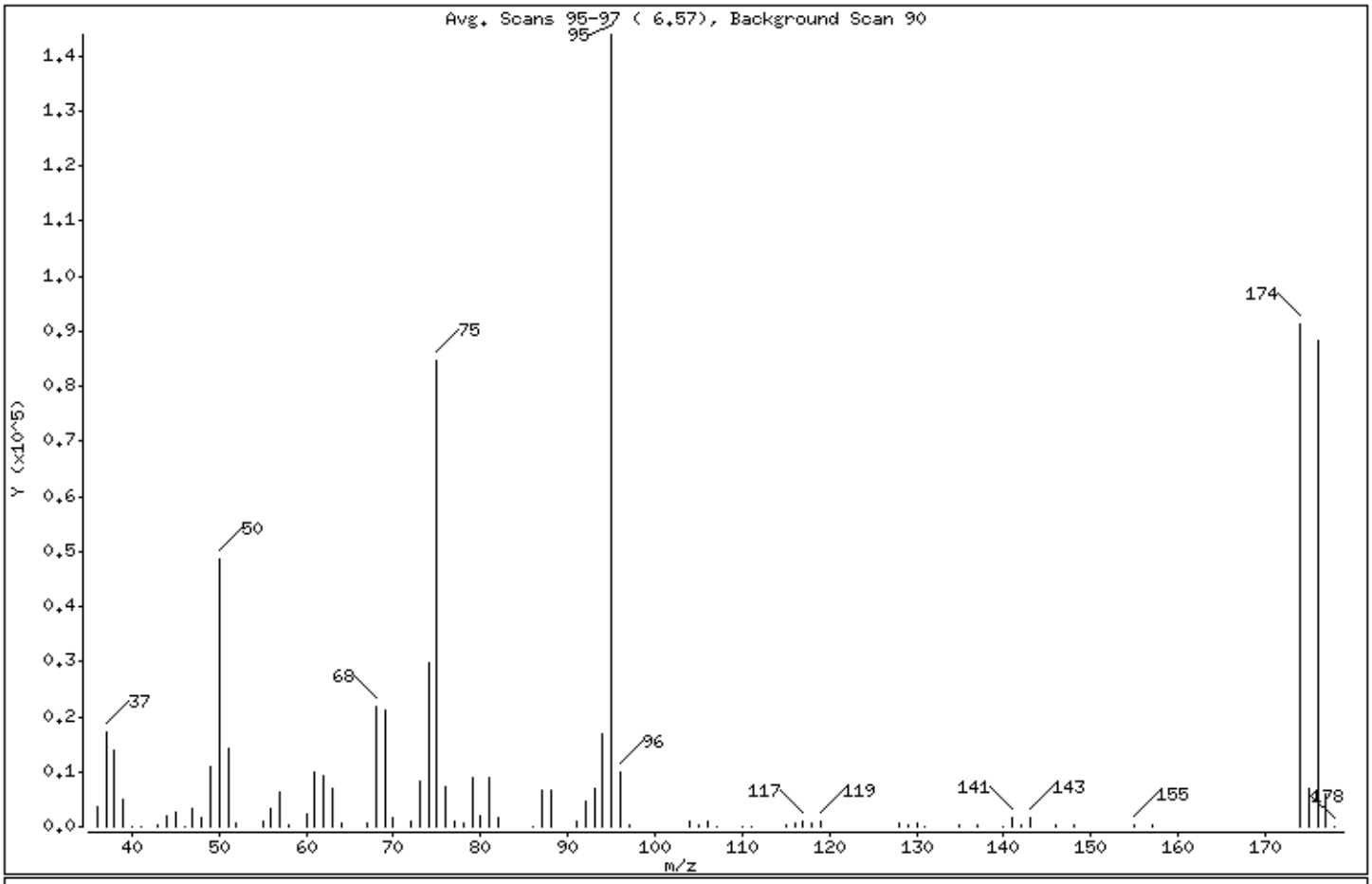
Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

1 Bromofluorobenzene



m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
95	Base Peak, 100% relative abundance	100.00
50	15.00 - 40.00% of mass 95	33.84
75	30.00 - 60.00% of mass 95	58.95
96	5.00 - 9.00% of mass 95	6.85
173	Less than 2.00% of mass 174	0.00 (0.00)
174	50.00 - 99.99% of mass 95	63.46
175	5.00 - 9.00% of mass 174	4.78 (7.54)
176	95.01 - 100.99% of mass 174	61.36 (96.69)
177	5.00 - 9.00% of mass 176	4.22 (6.88)

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV03.D

Date : 31-JUL-2015 12:08

Client ID: bfb tune std

Instrument: MSVOA09.i

Sample Info: TUN,BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00

Data File: IGV03.D
Spectrum: Avg. Scans 95-97 (6.57), Background Scan 90
Location of Maximum: 95.00
Number of points: 80

m/z	Y	m/z	Y	m/z	Y	m/z	Y
36.00	3761	61.00	9823	88.00	6486	130.00	557
37.00	17184	62.00	9323	91.00	904	131.00	103
38.00	13855	63.00	6872	92.00	4548	135.00	243
39.00	5008	64.00	712	93.00	6933	137.00	235
40.00	76	67.00	609	94.00	16976	140.00	90
41.00	98	68.00	21880	95.00	143808	141.00	1557
43.00	361	69.00	21040	96.00	9854	142.00	177
44.00	1864	70.00	1538	97.00	307	143.00	1564
45.00	2703	72.00	1089	104.00	903	146.00	192
46.00	90	73.00	8323	105.00	245	148.00	358
47.00	3232	74.00	29824	106.00	992	155.00	242
48.00	1786	75.00	84784	107.00	102	157.00	210
49.00	10767	76.00	7369	110.00	89	174.00	91264
50.00	48672	77.00	1109	111.00	99	175.00	6879
51.00	14312	78.00	787	115.00	201	176.00	88248
52.00	679	79.00	8807	116.00	657	177.00	6075
55.00	853	80.00	1976	117.00	1118	178.00	87
56.00	3372	81.00	8969	118.00	646		
57.00	6335	82.00	1747	119.00	885		
58.00	239	86.00	129	128.00	646		
60.00	2300	87.00	6739	129.00	284		

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV03.D

Date : 31-JUL-2015 12:08

Client ID: bfb tune std

Instrument: MSVOA09.i

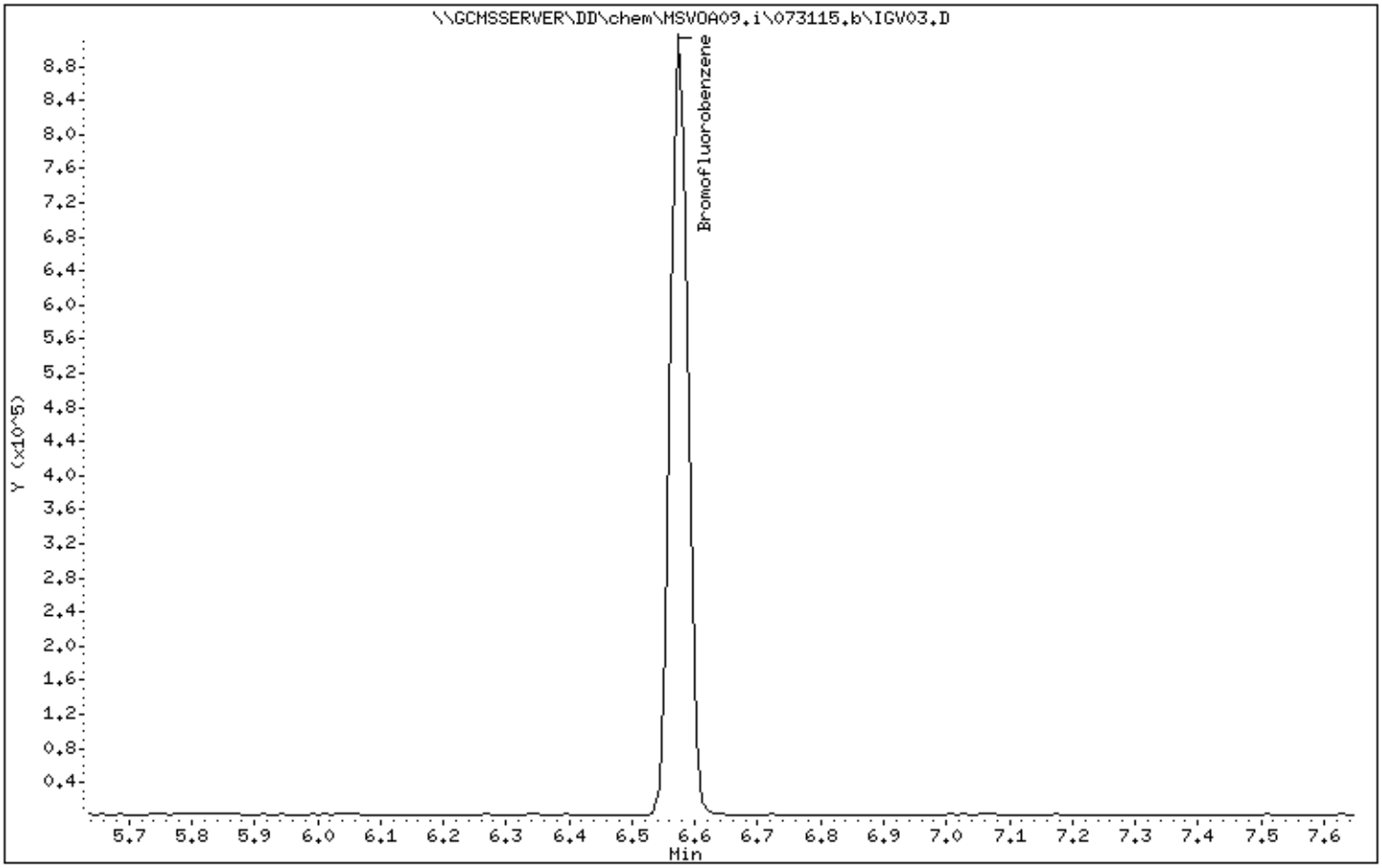
Sample Info: TUN,BFB,S27180

Volume Injected (uL): 1.0

Operator: VOC

Column phase:

Column diameter: 2.00



CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 MSVOA Water: EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Date : 25-JUN-2015 12:00 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	hfp08	475253923008		25-JUN-2015 12:00	S26360 (2000000X), S27172 (2000000X), S27416 (2000000X), S26220 (1000000X), S27244 (5000X)
L2	hfp09	475253923009		25-JUN-2015 12:34	S26360 (1000000X), S27172 (1000000X), S27416 (1000000X), S26220 (500000X), S27244 (5000X)
L3	hfp10	475253923010		25-JUN-2015 13:07	S26360 (500000X), S27172 (250000X), S27416 (250000X), S26220 (250000X), S27244 (5000X)
L4	hfp11	475253923011		25-JUN-2015 13:41	S26360 (200000X), S27172 (100000X), S27416 (100000X), S26220 (100000X), S27244 (5000X)
L5	hfp12	475253923012		25-JUN-2015 14:15	S26360 (100000X), S27172 (50000X), S27416 (50000X), S26220 (50000X), S27244 (5000X)
L6	hfp13	475253923013		25-JUN-2015 14:49	S26360 (50000X), S27172 (25000X), S27416 (25000X), S26220 (25000X), S27244 (5000X)
L7	hfp14	475253923014		25-JUN-2015 15:23	S26360 (20000X), S27172 (10000X), S27416 (10000X), S26220 (10000X), S27244 (5000X)
L8	hfp15	475253923015		25-JUN-2015 15:57	S26360 (13330X), S27172 (6667X), S27416 (6667X), S26220 (6667X), S27244 (5000X)
L9	hfp16	475253923016		25-JUN-2015 16:31	S26360 (10000X), S27172 (5000X), S27416 (5000X), S26220 (5000X), S27244 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.5422	0.5172	0.5083	0.3399	0.5062	0.4539	0.4517	0.4336	AVRG		2.13169		0.4691	14	15	0.100	0.99	
Chloromethane	0.8987	0.8619	0.8323	0.8605	0.8171	0.8121	0.7349	0.6966	0.6720	AVRG		1.25243		0.7984	10	15	0.100	0.99	
Vinyl Chloride	0.7472	0.7394	0.6855	0.7044	0.6029	0.6727	0.6189	0.6110	0.5959	AVRG		1.50556		0.6642	9	15	0.100	0.99	
Bromomethane		0.3169	0.3400	0.3409	0.3341	0.3597	0.3811	0.3912	0.3914	AVRG		2.80181		0.3569	8	15	0.100	0.99	
Chloroethane		0.5190	0.5062	0.5263	0.4961	0.4834	0.4365	0.4526	0.4115	AVRG		2.08793		0.4789	9	15	0.100	0.99	
Trichlorofluoromethane		0.8599	0.7998	0.8228	0.6661	0.7911	0.7085	0.6839	0.6666	AVRG		1.33363		0.7498	10	15	0.100	0.99	
Acetone			0.2098m	0.1934	0.1755	0.1674	0.1604	0.1621	0.1653	AVRG		5.67351		0.1763	11	15	0.100	0.99	
Freon 113		0.4643	0.4016	0.4799	0.4479	0.4213	0.4307	0.4330	0.4250	AVRG		2.28335		0.4380	6	15	0.100	0.99	
1,1-Dichloroethene		0.5416	0.4651	0.4820	0.4663	0.4663	0.4287	0.4455	0.4262	AVRG		2.14956		0.4652	8	15	0.100	0.99	
Methylene Chloride		0.6436	0.6139	0.6102	0.6145	0.6035	0.5455	0.5371	0.5385	AVRG		1.69968		0.5883	7	15	0.100	0.99	
Carbon Disulfide		2.2300	2.0330	2.0278	1.9431	1.9496	1.7400	1.6979	1.7361	AVRG		0.52091		1.9197	10	15	0.100	0.99	
MTBE		1.3888	1.3144	1.3297	1.3535	1.3915	1.2257	1.2301	1.2454	AVRG		0.76343		1.3099	5	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5812	0.5351	0.5851	0.5296	0.5331	0.5010	0.4983	0.4690	AVRG		1.89017		0.5291	8	15	0.100	0.99	
Vinyl Acetate			0.7359	0.6400	0.8340	0.8982	0.8688	0.8276	0.8511	AVRG		1.23772		0.8079	11	15	0.05	0.99	
1,1-Dichloroethane		1.3753	1.2376	1.2462	1.1611	1.1683	1.1000	1.0691	1.0659	AVRG		0.84893		1.1779	9	15	0.200	0.99	
2-Butanone			0.2614	0.2269	0.2295	0.2269	0.2145	0.2088	0.2028	AVRG		4.45653		0.2244	9	15	0.100	0.99	
2,2-Dichloropropane		0.7852	0.7823	0.7849	0.7152	0.7194	0.7163	0.7042	0.6535	AVRG		1.36494		0.7326	6	15	0.05	0.99	
cis-1,2-Dichloroethene		0.6590	0.6388	0.5839	0.6112	0.6097	0.5601	0.5469	0.5340	AVRG		1.68645		0.5930	7	15	0.100	0.99	
Chloroform		1.1317	1.0698	1.0659	1.0149	1.0293	0.9363	0.8979	0.9156	AVRG		0.99240		1.0077	8	15	0.200	0.99	
Bromochloromethane		0.2644	0.3006	0.3029	0.2793	0.2925	0.2695	0.2638	0.2543	AVRG		3.59193		0.2784	7	15	0.05	0.99	
1,1,1-Trichloroethane		0.8707	0.7206	0.7798	0.6962	0.7108	0.6643	0.6648	0.6634	AVRG		1.38632		0.7213	10	15	0.100	0.99	
1,1-Dichloropropene		0.5538	0.5096	0.5468	0.4778	0.5060	0.4532	0.4734	0.4523	AVRG		2.01368		0.4966	8	15	0.05	0.99	
Carbon Tetrachloride		0.3917	0.3751	0.4286	0.3784	0.3849	0.3630	0.3799	0.3699	AVRG		2.60469		0.3839	5	15	0.100	0.99	
1,2-Dichloroethane		0.5047	0.4779	0.4911	0.4735	0.5064	0.4484	0.4529	0.4442	AVRG		2.10581		0.4749	5	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.5632	1.5167	1.4824	1.4720	1.4606	1.3102	1.2779	1.2083	AVRG		0.70851		1.4114	9	15	0.500	0.99	
Trichloroethene		0.3870	0.3602	0.3743	0.3418	0.3531	0.3047	0.3260	0.3134	AVRG		2.89807		0.3451	8	15	0.200	0.99	
1,2-Dichloropropane		0.5174	0.4563	0.4633	0.4413	0.4534	0.4028	0.3963	0.3705	AVRG		2.28492		0.4377	11	15	0.100	0.99	
Bromodichloromethane		0.4992	0.4895	0.5068	0.4887	0.5016	0.4669	0.4680	0.4549	AVRG		2.06416		0.4845	4	15	0.200	0.99	
Dibromomethane		0.2078	0.2173	0.2173	0.2140	0.2242	0.1945	0.2075	0.2007	AVRG		4.75265		0.2104	5	15	0.05	0.99	
4-Methyl-2-Pentanone			0.3218	0.3344	0.3197	0.3439	0.3090	0.3173	0.3148	AVRG		3.09607		0.3230	4	15	0.100	0.99	
cis-1,3-Dichloropropene		0.6154	0.5989	0.6159	0.5977	0.6234	0.5411	0.5759	0.5448	AVRG		1.69741		0.5891	5	15	0.200	0.99	
Toluene		1.0224	0.9429	0.9938	0.9723	0.9383	0.8279	0.8469	0.8207	AVRG		1.08620		0.9206	9	15	0.400	0.99	
trans-1,3-Dichloropropene		0.5650	0.5537	0.5999	0.5693	0.6022	0.5310	0.5293	0.5139	AVRG		1.79198		0.5580	6	15	0.100	0.99	
1,1,2-Trichloroethane		0.1716	0.1666	0.1737	0.1855	0.1759	0.1653	0.1615	0.1629	AVRG		5.87006		0.1704	5	15	0.100	0.99	
2-Hexanone			0.2465	0.2714	0.2872	0.2906	0.2446	0.2504	0.2370	AVRG		3.82982		0.2611	8	15	0.100	0.99	
1,3-Dichloropropane		0.5966	0.5576	0.5777	0.5933	0.6025	0.5081	0.5297	0.5060	AVRG		1.78910		0.5589	7	15	0.05	0.99	
Tetrachloroethene		0.4077	0.3511	0.3912	0.3619	0.3609	0.3465	0.3444	0.3411	AVRG		2.75402		0.3631	7	15	0.200	0.99	
Dibromochloromethane		0.4205	0.3824	0.4068	0.3951	0.4081	0.3771	0.3798	0.3640	AVRG		2.55272		0.3917	5	15	0.100	0.99	
1,2-Dibromoethane		0.3051	0.2983	0.3170	0.3311	0.3331	0.2974	0.3034	0.2978	AVRG		3.22162		0.3104	5	15	0.100	0.99	
Chlorobenzene		1.1487	1.0740	1.0830	1.1014	1.0667	0.9835	0.9232	0.8924	AVRG		0.96701		1.0341	9	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3898	0.3841	0.3962	0.3912	0.3937	0.3630	0.3546	0.3447	AVRG		2.65153		0.3771	5	15	0.05	0.99	
Ethylbenzene		2.1020	1.8039	1.8765	1.8615	1.8090	1.6155	1.4887	1.4229	AVRG		0.57224		1.7475	13	15	0.100	0.99	
m,p-Xylenes	0.7721	0.7192	0.6722	0.6843	0.6504	0.6350	0.5744	0.5242	0.5393	AVRG		1.55950		0.6412	13	15	0.100	0.99	
o-Xylene		0.7054	0.6630	0.7309	0.6989	0.6587	0.6158	0.6096	0.5461	AVRG		1.53011		0.6535	9	15	0.300	0.99	
Styrene		1.1980	1.1097	1.1508	1.1944	1.1394	0.9943	0.9919	0.9282	AVRG		0.91884		1.0883	9	15	0.300	0.99	
Bromoform		0.2468	0.2178	0.2419	0.2501	0.2488	0.2334	0.2326	0.2319	AVRG		4.20356		0.2379	5	15	0.100	0.99	
Isopropylbenzene		3.4974	3.0271	3.4716	3.0495	3.2300	2.9020	2.8573	2.7311	AVRG		0.32302		3.0957	9	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.7011	0.6579	0.6731	0.7109	0.7192	0.6823	0.6676	0.6484	AVRG		1.46510		0.6825	4	15	0.300	0.99	
1,2,3-Trichloropropane		0.1542	0.1480	0.1597	0.1614	0.1664	0.1588	0.1530	0.1581	AVRG		6.35096		0.1575	4	15	0.05	0.99	
Propylbenzene		4.3941	3.7295	4.2665	3.7562	3.7654	3.2979	3.2519	3.1380	AVRG		0.27027		3.6999	12	15	0.05	0.99	
Bromobenzene		0.9120	0.8565	0.9502	0.8781	0.8905	0.7964	0.8080	0.7921	AVRG		1.16213		0.8605	7	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.7860	2.4893	2.7158	2.5052	2.5559	2.3980	2.2380	2.1413	AVRG		0.40344		2.4787	9	15	0.05	0.99	
2-Chlorotoluene		2.9848	2.6126	2.8160	2.5401	2.6568	2.3990	2.2559	2.1947	AVRG		0.39101		2.5575	11	15	0.05	0.99	
4-Chlorotoluene		2.5557	2.3392	2.5925	2.2163	2.4050	2.1946	2.0120	2.0184	AVRG		0.43636		2.2917	10	15	0.05	0.99	
tert-Butylbenzene		2.6516	2.2627	2.4891	2.2054	2.2931	2.1491	2.0971	1.9869	AVRG		0.44114		2.2669	9	15	0.05	0.99	
1,2,4-Trimethylbenzene		2.7768	2.6016	2.8543	2.6590	2.6498	2.4846	2.2838	2.2427	AVRG		0.38924		2.5691	9	15	0.05	0.99	
sec-Butylbenzene		4.0142	3.2043	3.8608	3.2315	3.3984	3.0471	3.0080	2.9162	AVRG		0.29984		3.3351	12	15	0.05	0.99	
para-Isopropyl Toluene		3.0247	2.5007	3.0671	2.6166	2.6063	2.4679	2.4005	2.3250	AVRG		0.38079		2.6261	11	15	0.05	0.99	
1,3-Dichlorobenzene		1.6852	1.6196	1.7181	1.4987	1.5268	1.4843	1.3826	1.3330	AVRG		0.65316		1.5310	9	15	0.600	0.99	
1,4-Dichlorobenzene		1.7753	1.4944	1.6634	1.5229	1.5577	1.4016	1.3890	1.3364	AVRG		0.65894		1.5176	10	15	0.500	0.99	
n-Butylbenzene		2.8244	2.2910	2.5993	2.3256	2.3830	2.0953	2.1596	1.9830	AVRG		0.42869		2.3327	12	15	0.05	0.99	
1,2-Dichlorobenzene		1.5589	1.4915	1.6288	1.4351	1.5716	1.3607	1.3855	1.3116	AVRG		0.68121		1.4680	8	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane		0.0894	0.1025	0.1176	0.1156	0.1145	0.1095	0.1151	0.1112	AVRG		9.13983		0.1094	9	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.8337	0.8172	0.9044	0.8459	0.8707	0.8161	0.8507	0.8089	AVRG		1.18562		0.8434	4	15	0.200	0.99	
Hexachlorobutadiene		0.4130	0.3469	0.4456	0.3995	0.4029	0.4009	0.4175	0.4024	AVRG		2.47771		0.4036	7	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		1.5902	1.4888	1.7739	1.7189	1.8194	1.7103	1.7313	1.6843	AVRG		0.59185		1.6896	6	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.7379	0.6874	0.8280	0.7628	0.7913	0.7594	0.7912	0.7401	AVRG		1.31189		0.7623	6	15	0.05	0.99	
Dibromofluoromethane	0.5486	0.5583	0.5453	0.5389	0.5478	0.5395	0.5306	0.5368	0.5402	AVRG		1.84192		0.5429	1	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3674	0.3486	0.3555	0.3377	0.3602	0.3507	0.3383	0.3410	0.3245	AVRG		2.88100		0.3471	4	15	0.05	0.99	
Toluene-d8	1.2273	1.2367	1.2015	1.2252	1.2397	1.2262	1.1762	1.2035	1.2258	AVRG		0.82100		1.2180	2	15	0.05	0.99	
Bromofluorobenzene	1.0100	0.9928	0.9628	0.9688	0.9553	0.9718	0.9400	0.9874	1.0124	AVRG		1.02257		0.9779	3	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	16	2.0000	10	5.0000	8	10.000	**-28**	20.000	8	50.000	-3	75.000	-4	100.00	-8
Chloromethane	0.5000	13	1.0000	8	2.0000	4	5.0000	8	10.000	2	20.000	2	50.000	-8	75.000	-13	100.00	-16
Vinyl Chloride	0.5000	12	1.0000	11	2.0000	3	5.0000	6	10.000	-9	20.000	1	50.000	-7	75.000	-8	100.00	-10
Bromomethane			1.0000	-11	2.0000	-5	5.0000	-4	10.000	-6	20.000	1	50.000	7	75.000	10	100.00	10
Chloroethane			1.0000	8	2.0000	6	5.0000	10	10.000	4	20.000	1	50.000	-9	75.000	-6	100.00	-14
Trichlorofluoromethane			1.0000	15	2.0000	7	5.0000	10	10.000	-11	20.000	6	50.000	-6	75.000	-9	100.00	-11
Acetone					2.0000	19	5.0000	10	10.000	0	20.000	-5	50.000	-9	75.000	-8	100.00	-6
Freon 113			0.5000	6	2.0000	-8	5.0000	10	10.000	2	20.000	-4	50.000	-2	75.000	-1	100.00	-3
1,1-Dichloroethene			0.5000	16	2.0000	0	5.0000	4	10.000	0	20.000	0	50.000	-8	75.000	-4	100.00	-8
Methylene Chloride			0.5000	9	2.0000	4	5.0000	4	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-8
Carbon Disulfide			0.5000	16	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-9	75.000	-12	100.00	-10
MTBE			0.5000	6	2.0000	0	5.0000	2	10.000	3	20.000	6	50.000	-6	75.000	-6	100.00	-5
trans-1,2-Dichloroethene			0.5000	10	2.0000	1	5.0000	11	10.000	0	20.000	1	50.000	-5	75.000	-6	100.00	-11
Vinyl Acetate					2.0000	-9	5.0000	**-21**	10.000	3	20.000	11	50.000	8	75.000	2	100.00	5
1,1-Dichloroethane			0.5000	17	2.0000	5	5.0000	6	10.000	-1	20.000	-1	50.000	-7	75.000	-9	100.00	-10
2-Butanone					2.0000	16	5.0000	1	10.000	2	20.000	1	50.000	-4	75.000	-7	100.00	-10
2,2-Dichloropropane			0.5000	7	2.0000	7	5.0000	7	10.000	-2	20.000	-2	50.000	-2	75.000	-4	100.00	-11
cis-1,2-Dichloroethene			0.5000	11	2.0000	8	5.0000	-2	10.000	3	20.000	3	50.000	-6	75.000	-8	100.00	-10
Chloroform			0.5000	12	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-7	75.000	-11	100.00	-9
Bromochloromethane			0.5000	-5	2.0000	8	5.0000	9	10.000	0	20.000	5	50.000	-3	75.000	-5	100.00	-9
1,1,1-Trichloroethane			0.5000	**21**	2.0000	0	5.0000	8	10.000	-3	20.000	-1	50.000	-8	75.000	-8	100.00	-8
1,1-Dichloropropene			0.5000	12	2.0000	3	5.0000	10	10.000	-4	20.000	2	50.000	-9	75.000	-5	100.00	-9
Carbon Tetrachloride			0.5000	2	2.0000	-2	5.0000	12	10.000	-1	20.000	0	50.000	-5	75.000	-1	100.00	-4
1,2-Dichloroethane			0.5000	6	2.0000	1	5.0000	3	10.000	0	20.000	7	50.000	-6	75.000	-5	100.00	-6
Benzene			0.5000	11	2.0000	7	5.0000	5	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-14
Trichloroethene			0.5000	12	2.0000	4	5.0000	8	10.000	-1	20.000	2	50.000	-12	75.000	-6	100.00	-9
1,2-Dichloropropane			0.5000	18	2.0000	4	5.0000	6	10.000	1	20.000	4	50.000	-8	75.000	-9	100.00	-15
Bromodichloromethane			0.5000	3	2.0000	1	5.0000	5	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-6
Dibromomethane			0.5000	-1	2.0000	3	5.0000	3	10.000	2	20.000	7	50.000	-8	75.000	-1	100.00	-5
4-Methyl-2-Pentanone					2.0000	0	5.0000	4	10.000	-1	20.000	6	50.000	-4	75.000	-2	100.00	-3
cis-1,3-Dichloropropene			0.5000	4	2.0000	2	5.0000	5	10.000	1	20.000	6	50.000	-8	75.000	-2	100.00	-8
Toluene			0.5000	11	2.0000	2	5.0000	8	10.000	6	20.000	2	50.000	-10	75.000	-8	100.00	-11
trans-1,3-Dichloropropene			0.5000	1	2.0000	-1	5.0000	7	10.000	2	20.000	8	50.000	-5	75.000	-5	100.00	-8
1,1,2-Trichloroethane			0.5000	1	2.0000	-2	5.0000	2	10.000	9	20.000	3	50.000	-3	75.000	-5	100.00	-4
2-Hexanone					2.0000	-6	5.0000	4	10.000	10	20.000	11	50.000	-6	75.000	-4	100.00	-9
1,3-Dichloropropane			0.5000	7	2.0000	0	5.0000	3	10.000	6	20.000	8	50.000	-9	75.000	-5	100.00	-9
Tetrachloroethene			0.5000	12	2.0000	-3	5.0000	8	10.000	0	20.000	-1	50.000	-5	75.000	-5	100.00	-6
Dibromochloromethane			0.5000	7	2.0000	-2	5.0000	4	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-7
1,2-Dibromoethane			0.5000	-2	2.0000	-4	5.0000	2	10.000	7	20.000	7	50.000	-4	75.000	-2	100.00	-4
Chlorobenzene			0.5000	11	2.0000	4	5.0000	5	10.000	7	20.000	3	50.000	-5	75.000	-11	100.00	-14
1,1,1,2-Tetrachloroethane			0.5000	3	2.0000	2	5.0000	5	10.000	4	20.000	4	50.000	-4	75.000	-6	100.00	-9
Ethylbenzene			0.5000	20	2.0000	3	5.0000	7	10.000	7	20.000	4	50.000	-8	75.000	-15	100.00	-19

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	20	1.0000	12	4.0000	5	10.000	7	20.000	1	40.000	-1	100.00	-10	150.00	-18	200.00	-16
o-Xylene			0.5000	8	2.0000	1	5.0000	12	10.000	7	20.000	1	50.000	-6	75.000	-7	100.00	-16
Styrene			0.5000	10	2.0000	2	5.0000	6	10.000	10	20.000	5	50.000	-9	75.000	-9	100.00	-15
Bromoform			0.5000	4	2.0000	-8	5.0000	2	10.000	5	20.000	5	50.000	-2	75.000	-2	100.00	-3
Isopropylbenzene			0.5000	13	2.0000	-2	5.0000	12	10.000	-1	20.000	4	50.000	-6	75.000	-8	100.00	-12
1,1,2,2-Tetrachloroethane			0.5000	3	2.0000	-4	5.0000	-1	10.000	4	20.000	5	50.000	0	75.000	-2	100.00	-5
1,2,3-Trichloropropane			0.5000	-2	2.0000	-6	5.0000	1	10.000	3	20.000	6	50.000	1	75.000	-3	100.00	0
Propylbenzene			0.5000	19	2.0000	1	5.0000	15	10.000	2	20.000	2	50.000	-11	75.000	-12	100.00	-15
Bromobenzene			0.5000	6	2.0000	0	5.0000	10	10.000	2	20.000	3	50.000	-7	75.000	-6	100.00	-8
1,3,5-Trimethylbenzene			0.5000	12	2.0000	0	5.0000	10	10.000	1	20.000	3	50.000	-3	75.000	-10	100.00	-14
2-Chlorotoluene			0.5000	17	2.0000	2	5.0000	10	10.000	-1	20.000	4	50.000	-6	75.000	-12	100.00	-14
4-Chlorotoluene			0.5000	12	2.0000	2	5.0000	13	10.000	-3	20.000	5	50.000	-4	75.000	-12	100.00	-12
tert-Butylbenzene			0.5000	17	2.0000	0	5.0000	10	10.000	-3	20.000	1	50.000	-5	75.000	-7	100.00	-12
1,2,4-Trimethylbenzene			0.5000	8	2.0000	1	5.0000	11	10.000	3	20.000	3	50.000	-3	75.000	-11	100.00	-13
sec-Butylbenzene			0.5000	20	2.0000	-4	5.0000	16	10.000	-3	20.000	2	50.000	-9	75.000	-10	100.00	-13
para-Isopropyl Toluene			0.5000	15	2.0000	-5	5.0000	17	10.000	0	20.000	-1	50.000	-6	75.000	-9	100.00	-11
1,3-Dichlorobenzene			0.5000	10	2.0000	6	5.0000	12	10.000	-2	20.000	0	50.000	-3	75.000	-10	100.00	-13
1,4-Dichlorobenzene			0.5000	17	2.0000	-2	5.0000	10	10.000	0	20.000	3	50.000	-8	75.000	-8	100.00	-12
n-Butylbenzene			0.5000	**21**	2.0000	-2	5.0000	11	10.000	0	20.000	2	50.000	-10	75.000	-7	100.00	-15
1,2-Dichlorobenzene			0.5000	6	2.0000	2	5.0000	11	10.000	-2	20.000	7	50.000	-7	75.000	-6	100.00	-11
1,2-Dibromo-3-Chloropropane			0.5000	-18	2.0000	-6	5.0000	7	10.000	6	20.000	5	50.000	0	75.000	5	100.00	2
1,2,4-Trichlorobenzene			0.5000	-1	2.0000	-3	5.0000	7	10.000	0	20.000	3	50.000	-3	75.000	1	100.00	-4
Hexachlorobutadiene			0.5000	2	2.0000	-14	5.0000	10	10.000	-1	20.000	0	50.000	-1	75.000	3	100.00	0
Naphthalene			0.5000	-6	2.0000	-12	5.0000	5	10.000	2	20.000	8	50.000	1	75.000	2	100.00	0
1,2,3-Trichlorobenzene			0.5000	-3	2.0000	-10	5.0000	9	10.000	0	20.000	4	50.000	0	75.000	4	100.00	-3
Dibromofluoromethane	50.000	1	50.000	3	50.000	0	50.000	-1	50.000	1	50.000	-1	50.000	-2	50.000	-1	50.000	-1
1,2-Dichloroethane-d4	50.000	6	50.000	0	50.000	2	50.000	-3	50.000	4	50.000	1	50.000	-3	50.000	-2	50.000	-7
Toluene-d8	50.000	1	50.000	2	50.000	-1	50.000	1	50.000	2	50.000	1	50.000	-3	50.000	-1	50.000	1
Bromofluorobenzene	50.000	3	50.000	2	50.000	-2	50.000	-1	50.000	-2	50.000	-1	50.000	-4	50.000	1	50.000	4

DJA 06/26/15 [Ethanol]: Corrected fronting or tailing peak integration in multiple levels.

DJA 06/26/15 [Acetone]: Corrected fronting or tailing peak integration in (hfp10).

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Cal Date : 25-JUN-2015 Type : WATER

ICV 475253923017 (hfp17 25-JUN-2015) stds: S26064 (10000X), S27244 (5000X)
ICV 475253923018 (hfp18 25-JUN-2015) stds: S27331 (10000X), S27404 (10000X), S27533 (10000X), S27244 (5000X)

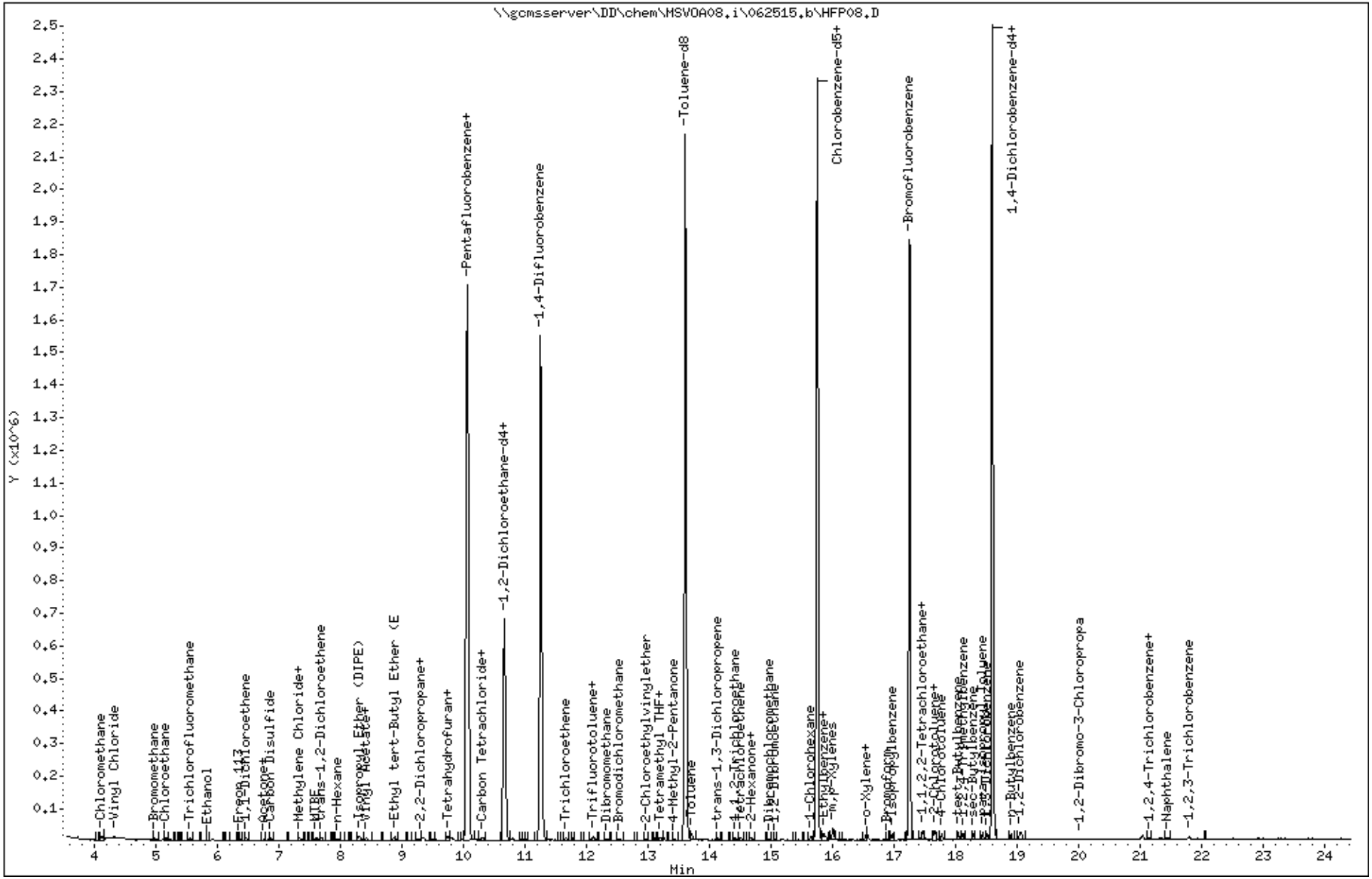
Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	475253923017	20.00	25.38	ug/L	**27**	20	v+ ***
Chloromethane	475253923017	20.00	19.54	ug/L	-2	20	
Vinyl Chloride	475253923017	20.00	20.18	ug/L	1	20	
Bromomethane	475253923017	20.00	19.54	ug/L	-2	20	
Chloroethane	475253923017	20.00	18.42	ug/L	-8	20	
Trichlorofluoromethane	475253923017	20.00	20.66	ug/L	3	20	
Acetone	475253923018	25.00	20.00	ug/L	-20	20	
Freon 113	475253923018	25.00	19.09	ug/L	**-24**	20	v- ***
1,1-Dichloroethene	475253923018	25.00	21.38	ug/L	-14	20	
Methylene Chloride	475253923018	25.00	23.31	ug/L	-7	20	
Carbon Disulfide	475253923018	25.00	18.77	ug/L	**-25**	20	v- ***
MTBE	475253923018	25.00	24.72	ug/L	-1	20	
trans-1,2-Dichloroethene	475253923018	25.00	22.57	ug/L	-10	20	
Vinyl Acetate	475253923018	25.00	32.45	ug/L	**30**	20	v+ ***
1,1-Dichloroethane	475253923018	25.00	22.75	ug/L	-9	20	
2-Butanone	475253923018	25.00	23.98	ug/L	-4	20	
2,2-Dichloropropane	475253923018	25.00	22.60	ug/L	-10	20	
cis-1,2-Dichloroethene	475253923018	25.00	24.30	ug/L	-3	20	
Chloroform	475253923018	25.00	23.92	ug/L	-4	20	
Bromochloromethane	475253923018	25.00	24.42	ug/L	-2	20	
1,1,1-Trichloroethane	475253923018	25.00	24.02	ug/L	-4	20	
1,1-Dichloropropene	475253923018	25.00	22.74	ug/L	-9	20	
Carbon Tetrachloride	475253923018	25.00	24.08	ug/L	-4	20	
1,2-Dichloroethane	475253923018	25.00	23.25	ug/L	-7	20	
Benzene	475253923018	25.00	23.36	ug/L	-7	20	
Trichloroethene	475253923018	25.00	22.70	ug/L	-9	20	
1,2-Dichloropropane	475253923018	25.00	22.01	ug/L	-12	20	
Bromodichloromethane	475253923018	25.00	22.78	ug/L	-9	20	
Dibromomethane	475253923018	25.00	23.64	ug/L	-5	20	
4-Methyl-2-Pentanone	475253923018	25.00	23.16	ug/L	-7	20	
cis-1,3-Dichloropropene	475253923018	25.00	23.42	ug/L	-6	20	
Toluene	475253923018	25.00	24.30	ug/L	-3	20	
trans-1,3-Dichloropropene	475253923018	25.00	22.10	ug/L	-12	20	
1,1,2-Trichloroethane	475253923018	25.00	24.93	ug/L	0	20	
2-Hexanone	475253923018	25.00	25.36	ug/L	1	20	
1,3-Dichloropropane	475253923018	25.00	24.96	ug/L	0	20	
Tetrachloroethene	475253923018	25.00	24.15	ug/L	-3	20	
Dibromochloromethane	475253923018	25.00	24.48	ug/L	-2	20	
1,2-Dibromoethane	475253923018	25.00	24.67	ug/L	-1	20	
Chlorobenzene	475253923018	25.00	23.11	ug/L	-8	20	
1,1,1,2-Tetrachloroethane	475253923018	25.00	23.85	ug/L	-5	20	
Ethylbenzene	475253923018	25.00	23.76	ug/L	-5	20	
m,p-Xylenes	475253923018	50.00	48.45	ug/L	-3	20	
o-Xylene	475253923018	25.00	24.72	ug/L	-1	20	
Styrene	475253923018	25.00	25.11	ug/L	0	20	
Bromoform	475253923018	25.00	24.91	ug/L	0	20	
Isopropylbenzene	475253923018	25.00	24.38	ug/L	-2	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	475253923018	25.00	26.77	ug/L	7	20	
1,2,3-Trichloropropane	475253923018	25.00	25.78	ug/L	3	20	
Propylbenzene	475253923018	25.00	24.98	ug/L	0	20	
Bromobenzene	475253923018	25.00	25.71	ug/L	3	20	
1,3,5-Trimethylbenzene	475253923018	25.00	25.45	ug/L	2	20	
2-Chlorotoluene	475253923018	25.00	24.35	ug/L	-3	20	
4-Chlorotoluene	475253923018	25.00	25.97	ug/L	4	20	
tert-Butylbenzene	475253923018	25.00	25.13	ug/L	1	20	
1,2,4-Trimethylbenzene	475253923018	25.00	24.23	ug/L	-3	20	
sec-Butylbenzene	475253923018	25.00	24.65	ug/L	-1	20	
para-Isopropyl Toluene	475253923018	25.00	25.08	ug/L	0	20	
1,3-Dichlorobenzene	475253923018	25.00	25.51	ug/L	2	20	
1,4-Dichlorobenzene	475253923018	25.00	24.94	ug/L	0	20	
n-Butylbenzene	475253923018	25.00	24.68	ug/L	-1	20	
1,2-Dichlorobenzene	475253923018	25.00	25.91	ug/L	4	20	
1,2-Dibromo-3-Chloropropane	475253923018	25.00	25.00	ug/L	0	20	
1,2,4-Trichlorobenzene	475253923018	25.00	25.19	ug/L	1	20	
Hexachlorobutadiene	475253923018	25.00	24.66	ug/L	-1	20	
Naphthalene	475253923018	25.00	24.72	ug/L	-1	20	
1,2,3-Trichlorobenzene	475253923018	25.00	26.69	ug/L	7	20	

475253923017: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15
475253923018: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

+=high bias -=low bias v=ICV

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP08.D
Date : 25-JUN-2015 12:00
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ICAL,S26360,.0005/1000,S27172,.0005/1000,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP08.D
Report Date: 26-Jun-2015 10:49

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP08.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 12:00 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.0005/1000,S27172,.0005/1000,
Misc Info : S27416,.0005/1000,S26220,.001/1000
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:49 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 12:00 Cal File: HFP08.D
Als bottle: 9 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.727	3.747	(0.371)	4995	0.50000	0.5362
2 Chloromethane	50	4.112	4.141	(0.409)	8922	0.50000	0.5627
3 Vinyl Chloride	62	4.319	4.348	(0.429)	7418	0.50000	0.5624
4 Bromomethane	94	4.990	5.009	(0.496)	3199	0.50000	0.4514(a)
5 Chloroethane	64	5.167	5.186	(0.514)	5596	0.50000	0.5884
6 Trichlorofluoromethane	101	5.542	5.571	(0.551)	7801	0.50000	0.5239
7 Ethanol	45	5.907	5.926	(0.587)	2079	0.25000	22.4394(A)
8 Freon 113	101	6.371	6.389	(0.633)	1983	0.25000	0.2280(a)
9 1,1-Dichloroethene	96	6.469	6.488	(0.643)	2602	0.25000	0.2816(a)
10 Acetone	43	6.617	6.645	(0.658)	2098	0.25000	0.5994
11 Isopropanol	45	6.745	6.773	(0.671)	811	0.25000	1.6907(A)
12 Iodomethane	142	6.795	6.813	(0.675)	894	0.25000	3.1289(A)
13 Carbon Disulfide	76	6.874	6.892	(0.683)	11197	0.25000	0.2937(a)
14 Methylene Chloride	84	7.337	7.355	(0.729)	3272	0.25000	0.2800(a)
15 tert-Butyl Alcohol (TBA)	59	7.387	7.404	(0.734)	1552	2.50000	2.5025(A)
16 MTBE	73	7.604	7.621	(0.756)	7412	0.25000	0.2849(a)
17 trans-1,2-Dichloroethene	96	7.692	7.710	(0.765)	3501	0.25000	0.3332(a)
18 n-Hexane	57	7.949	7.976	(0.790)	1025	0.25000	0.2621(aA)
19 Isopropyl Ether (DIPE)	45	8.304	8.321	(0.825)	17162	0.25000	0.3130(aA)
20 Vinyl Acetate	43	8.402	8.420	(0.835)	3432	0.25000	0.2139(a)
21 1,1-Dichloroethane	63	8.422	8.439	(0.837)	7306	0.25000	0.3123(a)
22 Ethyl tert-Butyl Ether (ETBE)	59	8.876	8.893	(0.882)	10998	0.25000	0.2823(aA)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP08.D
Report Date: 26-Jun-2015 10:49

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.300	9.317	(0.925)	4402	0.25000	0.3026(a)
	24 2-Butanone	43	9.339	9.357	(0.928)	2170	0.25000	0.4870(a)
	25 cis-1,2-Dichloroethene	96	9.339	9.366	(0.928)	3880	0.25000	0.3295(a)
	26 Tetrahydrofuran	42	9.734	9.751	(0.968)	7185	0.25000	3.0133(A)
	27 Bromochloromethane	128	9.734	9.761	(0.968)	1644	0.25000	0.2974(a)
	28 Chloroform	83	9.803	9.820	(0.975)	6316	0.25000	0.3156(a)
*	29 Pentafluorobenzene	168	10.059	10.076	(1.000)	992755	50.0000	
	30 Dibromofluoromethane	113	10.069	10.086	(1.001)	544665	50.0000	50.5276
	31 1,1,1-Trichloroethane	97	10.059	10.096	(1.000)	3807	0.25000	0.2658(a)
	32 Carbon Tetrachloride	117	10.276	10.303	(0.913)	3461	0.25000	0.2965(a)
	33 1,1-Dichloropropene	75	10.316	10.343	(0.917)	5159	0.25000	0.3416(a)
	34 1,2-Dichloroethane-d4	65	10.661	10.688	(0.947)	558540	50.0000	52.9273
	35 Methyl tert-Amyl Ether (TAME)	73	10.700	10.707	(0.951)	9120	0.25000	0.3104(aA)
	36 Benzene	78	10.651	10.678	(0.947)	14603	0.25000	0.3403(a)
	37 1,2-Dichloroethane	62	10.789	10.806	(0.959)	4322	0.25000	0.2993(a)
*	38 1,4-Difluorobenzene	114	11.253	11.279	(1.000)	1520154	50.0000	
	39 Trichloroethene	95	11.667	11.683	(1.037)	3336	0.25000	0.3179(a)
	40 Trifluorotoluene	146	12.101	12.117	(1.075)	4261	0.25000	0.2753(aA)
	41 1,2-Dichloropropane	63	12.111	12.137	(1.076)	4059	0.25000	0.3050(a)
	42 Dibromomethane	93	12.338	12.354	(1.096)	1731	0.25000	0.2705(a)
	43 Bromodichloromethane	83	12.535	12.551	(1.114)	4597	0.25000	0.3121(a)
	44 2-Chloroethylvinylether	63	12.969	12.985	(1.153)	1231	0.25000	0.4150(a)
	45 Tetramethyl THF	43	13.196	13.202	(1.173)	7757	0.25000	0.2906(aA)
	46 cis-1,3-Dichloropropene	75	13.255	13.271	(1.178)	5395	0.25000	0.3012(a)
	47 4-Methyl-2-Pentanone	43	13.432	13.448	(1.194)	3849	0.25000	0.3919(a)
	48 Toluene-d8	98	13.610	13.626	(0.864)	1680060	50.0000	50.3824
	49 Toluene	92	13.719	13.734	(0.871)	8000	0.25000	0.3174(a)
	50 trans-1,3-Dichloropropene	75	14.133	14.148	(0.897)	4149	0.25000	0.2715(a)
	51 1,1,2-Trichloroethane	85	14.419	14.424	(0.915)	1597	0.25000	0.3424(a)
	52 Tetrachloroethene	166	14.508	14.523	(0.921)	2739	0.25000	0.2755(a)
	53 2-Hexanone	43	14.685	14.700	(0.932)	2813	0.25000	0.3935(a)
	54 1,3-Dichloropropane	76	14.675	14.691	(0.932)	3979	0.25000	0.2600(a)
	55 Dibromochloromethane	129	14.981	14.986	(0.951)	2902	0.25000	0.2705(a)
	56 1,2-Dibromoethane	107	15.188	15.193	(0.964)	2257	0.25000	0.2655(a)
	57 1-Chlorohexane	91	15.652	15.667	(0.994)	4148	0.25000	0.2800(aA)
*	58 Chlorobenzene-d5	117	15.750	15.765	(1.000)	1368865	50.0000	
	59 Chlorobenzene	112	15.790	15.805	(1.002)	8543	0.25000	0.3017(a)
	60 Ethylbenzene	91	15.859	15.874	(1.007)	14375	0.25000	0.3004(a)
	61 1,1,1,2-Tetrachloroethane	131	15.888	15.903	(1.009)	2645	0.25000	0.2561(a)
	62 m,p-Xylenes	106	16.007	16.021	(1.016)	10569	0.50000	0.6020
	63 o-Xylene	106	16.549	16.553	(1.051)	4794	0.25000	0.2679(a)
	64 Styrene	104	16.579	16.593	(1.053)	8561	0.25000	0.2873(a)
	65 Bromoform	173	16.894	16.908	(1.073)	1656	0.25000	0.2542(a)
	66 Isopropylbenzene	105	16.973	16.988	(0.913)	12936	0.25000	0.3057(a)
	67 Bromofluorobenzene	95	17.249	17.264	(0.927)	690282	50.0000	51.6404
	68 1,1,2,2-Tetrachloroethane	83	17.427	17.440	(0.937)	3097	0.25000	0.3319(a)
	69 Bromobenzene	156	17.466	17.471	(0.939)	4014	0.25000	0.3412(a)
	70 Propylbenzene	91	17.476	17.481	(0.940)	16236	0.25000	0.3210(a)
	71 1,2,3-Trichloropropane	110	17.516	17.530	(0.942)	585	0.25000	0.2718(a)
	72 2-Chlorotoluene	91	17.644	17.658	(0.949)	11752	0.25000	0.3361(a)
	73 1,3,5-Trimethylbenzene	105	17.674	17.688	(0.950)	10654	0.25000	0.3144(a)
	74 4-Chlorotoluene	91	17.782	17.796	(0.956)	10263	0.25000	0.3276(a)
	75 tert-Butylbenzene	119	18.048	18.063	(0.970)	9128	0.25000	0.2945(a)
	76 1,2,4-Trimethylbenzene	105	18.127	18.132	(0.975)	9947	0.25000	0.2832(a)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP08.D
Report Date: 26-Jun-2015 10:49

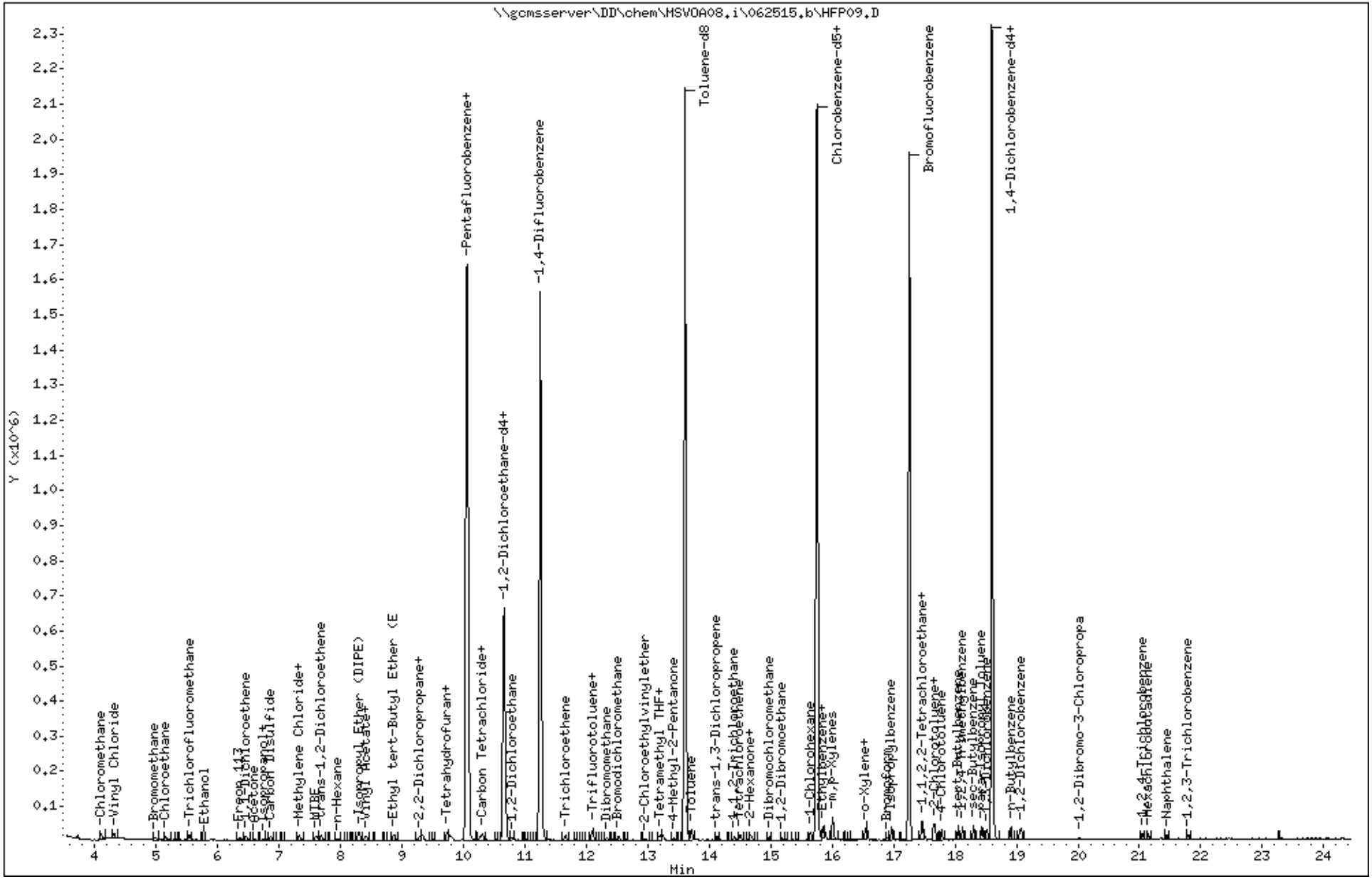
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.305	18.309	(0.984)	14352	0.25000	0.3148(a)
78 para-Isopropyl Toluene	119	18.443	18.457	(0.992)	11054	0.25000	0.3079(a)
79 1,3-Dichlorobenzene	146	18.522	18.536	(0.996)	7013	0.25000	0.3351(a)
* 80 1,4-Dichlorobenzene-d4	152	18.601	18.615	(1.000)	683442	50.0000	
81 1,4-Dichlorobenzene	146	18.630	18.644	(1.002)	6479	0.25000	0.3123(a)
82 n-Butylbenzene	91	18.906	18.920	(1.016)	9768	0.25000	0.3063(a)
83 1,2-Dichlorobenzene	146	19.084	19.088	(1.026)	6279	0.25000	0.3129(a)
84 1,2-Dibromo-3-Chloropropane	75	20.031	20.044	(1.077)	434	0.25000	0.2901(a)
85 1,2,4-Trichlorobenzene	180	21.047	21.070	(1.131)	3316	0.25000	0.2876(a)
86 Hexachlorobutadiene	225	21.155	21.168	(1.137)	1598	0.25000	0.2896(a)
87 Naphthalene	128	21.451	21.464	(1.153)	5515	0.25000	0.2387(a)
88 1,2,3-Trichlorobenzene	180	21.796	21.819	(1.172)	2782	0.25000	0.2670(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP09.D
Date : 25-JUN-2015 12:34
Client ID: DYNA P&T
Sample Info: ICAL,S26360,.001/1000,S27172,.001/1000,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP09.D
Report Date: 26-Jun-2015 10:50

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP09.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 12:34 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.001/1000,S27172,.001/1000,
Misc Info : S27416,.001/1000,S26220,.002/1000
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:50 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 12:34 Cal File: HFP09.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.723	3.747	(0.370)	10581	1.00000	1.1557
2 Chloromethane	50	4.118	4.141	(0.410)	16821	1.00000	1.0794
3 Vinyl Chloride	62	4.325	4.348	(0.430)	14431	1.00000	1.1132
4 Bromomethane	94	4.986	5.009	(0.496)	6184	1.00000	0.8877
5 Chloroethane	64	5.163	5.186	(0.514)	10129	1.00000	1.0836
6 Trichlorofluoromethane	101	5.548	5.571	(0.552)	16783	1.00000	1.1468
7 Ethanol	45	5.913	5.926	(0.588)	4407	50.0000	48.3920(A)
8 Freon 113	101	6.366	6.389	(0.633)	4531	0.50000	0.5301
9 1,1-Dichloroethene	96	6.465	6.488	(0.643)	5285	0.50000	0.5820
10 Acetone	43	6.633	6.645	(0.660)	2122	0.50000	0.6168
11 Isopropanol	45	6.751	6.773	(0.671)	2573	5.00000	5.4571(A)
12 Iodomethane	142	6.791	6.813	(0.675)	1856	0.50000	3.2979(A)
13 Carbon Disulfide	76	6.869	6.892	(0.683)	21761	0.50000	0.5808
14 Methylene Chloride	84	7.333	7.355	(0.729)	6280	0.50000	0.5469
15 tert-Butyl Alcohol (TBA)	59	7.372	7.404	(0.733)	2742	5.00000	4.4980(A)
16 MTBE	73	7.609	7.621	(0.757)	13552	0.50000	0.5301
17 trans-1,2-Dichloroethene	96	7.688	7.710	(0.765)	5671	0.50000	0.5492
18 n-Hexane	57	7.954	7.976	(0.791)	2304	0.50000	0.5995(A)
19 Isopropyl Ether (DIPE)	45	8.309	8.321	(0.826)	30247	0.50000	0.5612(A)
20 Vinyl Acetate	43	8.408	8.420	(0.836)	8653	0.50000	0.5487
21 1,1-Dichloroethane	63	8.418	8.439	(0.837)	13420	0.50000	0.5837
22 Ethyl tert-Butyl Ether (ETBE)	59	8.881	8.893	(0.883)	20317	0.50000	0.5306(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP09.D
Report Date: 26-Jun-2015 10:50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.296	9.317	(0.924)	7662	0.50000	0.5358
	24 2-Butanone	43	9.345	9.357	(0.929)	1391	0.50000	0.3176(a)
	25 cis-1,2-Dichloroethene	96	9.345	9.366	(0.929)	6431	0.50000	0.5557
	26 Tetrahydrofuran	42	9.740	9.751	(0.969)	12892	5.00000	5.5007(A)
	27 Bromochloromethane	128	9.740	9.761	(0.969)	2580	0.50000	0.4748(a)
	28 Chloroform	83	9.799	9.820	(0.974)	11043	0.50000	0.5615
*	29 Pentafluorobenzene	168	10.055	10.076	(1.000)	975817	50.0000	
	30 Dibromofluoromethane	113	10.065	10.086	(1.001)	544825	50.0000	51.4197
	31 1,1,1-Trichloroethane	97	10.075	10.096	(1.002)	8496	0.50000	0.6035
	32 Carbon Tetrachloride	117	10.272	10.303	(0.912)	6132	0.50000	0.5100
	33 1,1-Dichloropropene	75	10.321	10.343	(0.917)	8670	0.50000	0.5575
	34 1,2-Dichloroethane-d4	65	10.667	10.688	(0.947)	545741	50.0000	50.2117
	35 Methyl tert-Amyl Ether (TAME)	73	10.696	10.707	(0.950)	15201	0.50000	0.5024(A)
	36 Benzene	78	10.657	10.678	(0.947)	24474	0.50000	0.5537
	37 1,2-Dichloroethane	62	10.795	10.806	(0.959)	7902	0.50000	0.5314
*	38 1,4-Difluorobenzene	114	11.258	11.279	(1.000)	1565650	50.0000	
	39 Trichloroethene	95	11.663	11.683	(1.036)	6059	0.50000	0.5607
	40 Trifluorotoluene	146	12.097	12.117	(1.074)	8936	0.50000	0.5606(A)
	41 1,2-Dichloropropane	63	12.117	12.137	(1.076)	8100	0.50000	0.5910
	42 Dibromomethane	93	12.334	12.354	(1.095)	3253	0.50000	0.4937(a)
	43 Bromodichloromethane	83	12.521	12.551	(1.112)	7816	0.50000	0.5152
	44 2-Chloroethylvinylether	63	12.955	12.985	(1.151)	2199	1.00000	0.7198
	45 Tetramethyl THF	43	13.201	13.202	(1.173)	15383	0.50000	0.5595(A)
	46 cis-1,3-Dichloropropene	75	13.251	13.271	(1.177)	9635	0.50000	0.5222
	47 4-Methyl-2-Pentanone	43	13.428	13.448	(1.193)	5581	0.50000	0.5518
	48 Toluene-d8	98	13.606	13.626	(0.864)	1622693	50.0000	50.7670
	49 Toluene	92	13.714	13.734	(0.870)	13415	0.50000	0.5552
	50 trans-1,3-Dichloropropene	75	14.129	14.148	(0.897)	7414	0.50000	0.5062
	51 1,1,2-Trichloroethane	85	14.415	14.424	(0.915)	2251	0.50000	0.5035
	52 Tetrachloroethene	166	14.513	14.523	(0.921)	5349	0.50000	0.5613
	53 2-Hexanone	43	14.681	14.700	(0.932)	3622	0.50000	0.5286
	54 1,3-Dichloropropane	76	14.681	14.691	(0.932)	7828	0.50000	0.5336
	55 Dibromochloromethane	129	14.977	14.986	(0.951)	5518	0.50000	0.5367
	56 1,2-Dibromoethane	107	15.184	15.193	(0.964)	4003	0.50000	0.4914(a)
	57 1-Chlorohexane	91	15.647	15.667	(0.993)	7246	0.50000	0.5103(A)
*	58 Chlorobenzene-d5	117	15.756	15.765	(1.000)	1312107	50.0000	
	59 Chlorobenzene	112	15.795	15.805	(1.002)	15072	0.50000	0.5553
	60 Ethylbenzene	91	15.855	15.874	(1.006)	27580	0.50000	0.6014
	61 1,1,1,2-Tetrachloroethane	131	15.894	15.903	(1.009)	5114	0.50000	0.5167
	62 m,p-Xylenes	106	16.012	16.021	(1.016)	18873	1.00000	1.1215
	63 o-Xylene	106	16.545	16.553	(1.050)	9255	0.50000	0.5396
	64 Styrene	104	16.575	16.593	(1.052)	15719	0.50000	0.5503
	65 Bromoform	173	16.900	16.908	(1.073)	3238	0.50000	0.5186
	66 Isopropylbenzene	105	16.969	16.988	(0.912)	24378	0.50000	0.5648
	67 Bromofluorobenzene	95	17.255	17.264	(0.927)	691988	50.0000	50.7593
	68 1,1,2,2-Tetrachloroethane	83	17.433	17.440	(0.937)	4887	0.50000	0.5136
	69 Bromobenzene	156	17.462	17.471	(0.939)	6357	0.50000	0.5299
	70 Propylbenzene	91	17.472	17.481	(0.939)	30628	0.50000	0.5938
	71 1,2,3-Trichloropropane	110	17.521	17.530	(0.942)	1075	0.50000	0.4897(a)
	72 2-Chlorotoluene	91	17.650	17.658	(0.949)	20805	0.50000	0.5835
	73 1,3,5-Trimethylbenzene	105	17.669	17.688	(0.950)	19419	0.50000	0.5619
	74 4-Chlorotoluene	91	17.778	17.796	(0.955)	17814	0.50000	0.5576
	75 tert-Butylbenzene	119	18.054	18.063	(0.970)	18482	0.50000	0.5848
	76 1,2,4-Trimethylbenzene	105	18.123	18.132	(0.974)	19355	0.50000	0.5404

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP09.D
Report Date: 26-Jun-2015 10:50

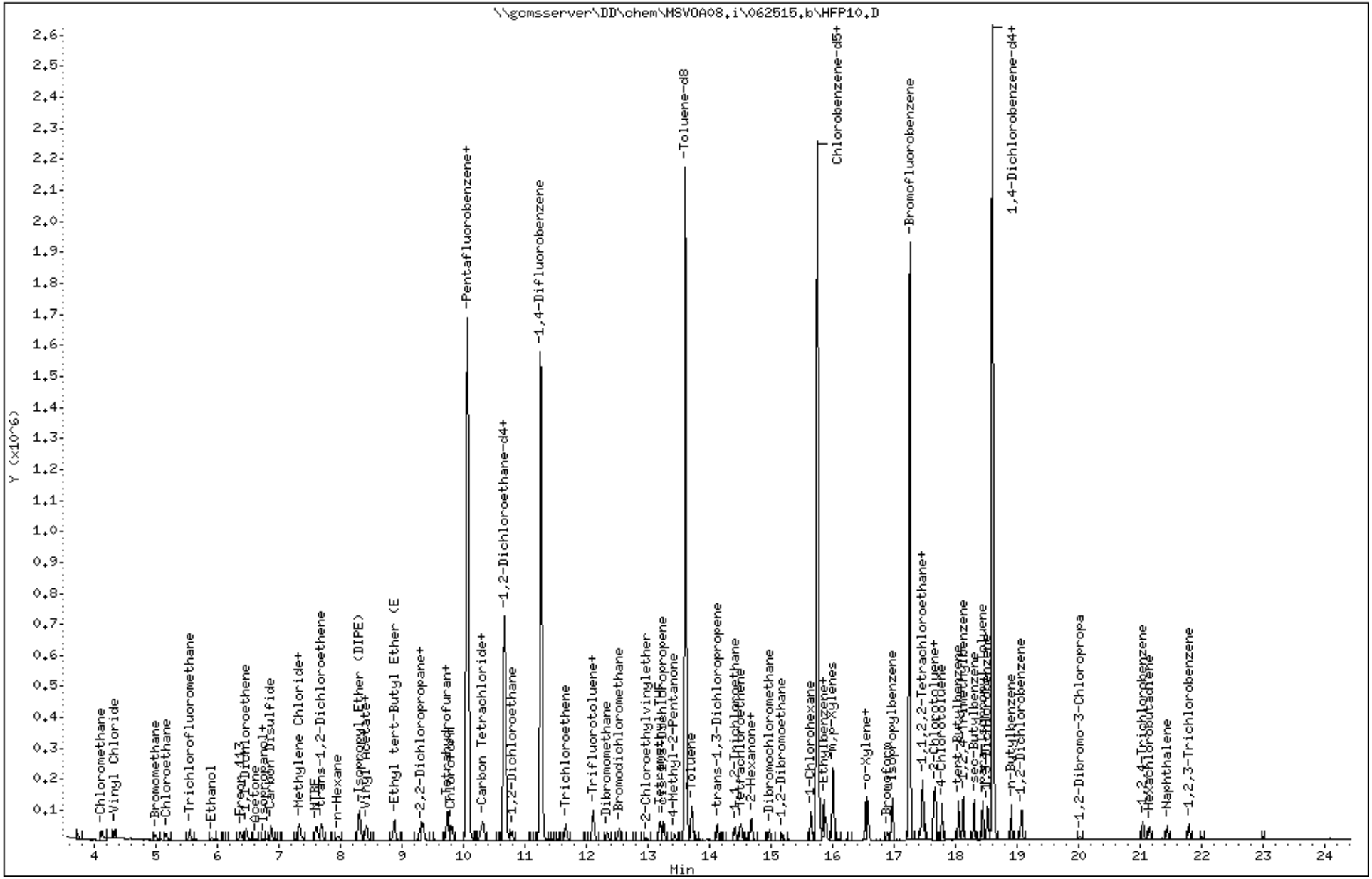
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.301	18.309	(0.984)	27980	0.50000	0.6018
78 para-Isopropyl Toluene	119	18.439	18.457	(0.991)	21083	0.50000	0.5758
79 1,3-Dichlorobenzene	146	18.527	18.536	(0.996)	11746	0.50000	0.5503
* 80 1,4-Dichlorobenzene-d4	152	18.606	18.615	(1.000)	697024	50.0000	
81 1,4-Dichlorobenzene	146	18.626	18.644	(1.001)	12374	0.50000	0.5848
82 n-Butylbenzene	91	18.912	18.920	(1.016)	19687	0.50000	0.6054
83 1,2-Dichlorobenzene	146	19.080	19.088	(1.025)	10866	0.50000	0.5309
84 1,2-Dibromo-3-Chloropropane	75	20.027	20.044	(1.076)	623	0.50000	0.4084(a)
85 1,2,4-Trichlorobenzene	180	21.052	21.070	(1.131)	5811	0.50000	0.4942(a)
86 Hexachlorobutadiene	225	21.151	21.168	(1.137)	2879	0.50000	0.5116
87 Naphthalene	128	21.447	21.464	(1.153)	11084	0.50000	0.4705(a)
88 1,2,3-Trichlorobenzene	180	21.802	21.819	(1.172)	5143	0.50000	0.4839(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D
Date : 25-JUN-2015 13:07
Client ID: DYNA P&T
Sample Info: ICAL,S26360,.001/500,S27172,.002/500,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D
Report Date: 26-Jun-2015 10:50

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 13:07 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.001/500,S27172,.002/500,
Misc Info : S27416,.002/500,S26220,.002/500
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:50 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 13:07 Cal File: HFP10.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.727	3.747	(0.371)	20585	2.00000	2.2050
2 Chloromethane	50	4.111	4.141	(0.409)	33127	2.00000	2.0848
3 Vinyl Chloride	62	4.318	4.348	(0.429)	27284	2.00000	2.0641
4 Bromomethane	94	4.989	5.009	(0.496)	13532	2.00000	1.9051
5 Chloroethane	64	5.157	5.186	(0.513)	20148	2.00000	2.1139
6 Trichlorofluoromethane	101	5.551	5.571	(0.552)	31831	2.00000	2.1331
7 Ethanol	45	5.906	5.926	(0.587)	16431	200.000	176.9417(AM)
8 Freon 113	101	6.370	6.389	(0.633)	15983	2.00000	1.8338
9 1,1-Dichloroethene	96	6.468	6.488	(0.643)	18511	2.00000	1.9994
10 Acetone	43	6.616	6.645	(0.658)	8349	2.00000	2.3802(M)
11 Isopropanol	45	6.754	6.773	(0.672)	9023	20.0000	18.7676(A)
12 Iodomethane	142	6.784	6.813	(0.674)	4766	2.00000	3.7852(A)
13 Carbon Disulfide	76	6.873	6.892	(0.683)	80917	2.00000	2.1180
14 Methylene Chloride	84	7.326	7.355	(0.728)	24433	2.00000	2.0867
15 tert-Butyl Alcohol (TBA)	59	7.376	7.404	(0.733)	11839	20.0000	19.0462(A)
16 MTBE	73	7.603	7.621	(0.756)	52313	2.00000	2.0068
17 trans-1,2-Dichloroethene	96	7.691	7.710	(0.765)	21298	2.00000	2.0229
18 n-Hexane	57	7.958	7.976	(0.791)	7762	2.00000	1.9807(A)
19 Isopropyl Ether (DIPE)	45	8.303	8.321	(0.825)	118528	2.00000	2.1570(A)
20 Vinyl Acetate	43	8.402	8.420	(0.835)	29289	2.00000	1.8216
21 1,1-Dichloroethane	63	8.421	8.439	(0.837)	49259	2.00000	2.1013
22 Ethyl tert-Butyl Ether (ETBE)	59	8.875	8.893	(0.882)	82259	2.00000	2.1069(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D
Report Date: 26-Jun-2015 10:50

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.299	9.317	(0.925)	31137	2.00000	2.1356
	24 2-Butanone	43	9.348	9.357	(0.929)	10403	2.00000	2.3296
	25 cis-1,2-Dichloroethene	96	9.348	9.366	(0.929)	25426	2.00000	2.1547
	26 Tetrahydrofuran	42	9.733	9.751	(0.968)	48853	20.0000	20.4421(A)
	27 Bromochloromethane	128	9.743	9.761	(0.969)	11965	2.00000	2.1596
	28 Chloroform	83	9.802	9.820	(0.975)	42577	2.00000	2.1232
*	29 Pentafluorobenzene	168	10.059	10.076	(1.000)	995022	50.0000	
	30 Dibromofluoromethane	113	10.068	10.086	(1.001)	542631	50.0000	50.2242
	31 1,1,1-Trichloroethane	97	10.068	10.096	(1.001)	28680	2.00000	1.9979
	32 Carbon Tetrachloride	117	10.275	10.303	(0.913)	23523	2.00000	1.9542
	33 1,1-Dichloropropene	75	10.315	10.343	(0.917)	31955	2.00000	2.0523
	34 1,2-Dichloroethane-d4	65	10.660	10.688	(0.947)	557372	50.0000	51.2167
	35 Methyl tert-Amyl Ether (TAME)	73	10.690	10.707	(0.950)	62204	2.00000	2.0535(A)
	36 Benzene	78	10.650	10.678	(0.947)	95106	2.00000	2.1492
	37 1,2-Dichloroethane	62	10.788	10.806	(0.959)	29964	2.00000	2.0125
*	38 1,4-Difluorobenzene	114	11.252	11.279	(1.000)	1567642	50.0000	
	39 Trichloroethene	95	11.656	11.683	(1.036)	22589	2.00000	2.0879
	40 Trifluorotoluene	146	12.100	12.117	(1.075)	31067	2.00000	1.9467(A)
	41 1,2-Dichloropropane	63	12.110	12.137	(1.076)	28615	2.00000	2.0853
	42 Dibromomethane	93	12.337	12.354	(1.096)	13628	2.00000	2.0658
	43 Bromodichloromethane	83	12.534	12.551	(1.114)	30693	2.00000	2.0207
	44 2-Chloroethylvinylether	63	12.978	12.985	(1.153)	4981	2.00000	1.6285
	45 Tetramethyl THF	43	13.195	13.202	(1.173)	57305	2.00000	2.0818(A)
	46 cis-1,3-Dichloropropene	75	13.254	13.271	(1.178)	37552	2.00000	2.0330
	47 4-Methyl-2-Pentanone	43	13.432	13.448	(1.194)	20181	2.00000	1.9928
	48 Toluene-d8	98	13.609	13.626	(0.864)	1649822	50.0000	49.3210
	49 Toluene	92	13.718	13.734	(0.871)	51789	2.00000	2.0483
	50 trans-1,3-Dichloropropene	75	14.132	14.148	(0.897)	30410	2.00000	1.9842
	51 1,1,2-Trichloroethane	85	14.418	14.424	(0.915)	9148	2.00000	1.9553
	52 Tetrachloroethene	166	14.517	14.523	(0.922)	19286	2.00000	1.9340
	53 2-Hexanone	43	14.684	14.700	(0.932)	13542	2.00000	1.8884
	54 1,3-Dichloropropane	76	14.684	14.691	(0.932)	30628	2.00000	1.9952
	55 Dibromochloromethane	129	14.970	14.986	(0.951)	21004	2.00000	1.9523
	56 1,2-Dibromoethane	107	15.187	15.193	(0.964)	16382	2.00000	1.9217
	57 1-Chlorohexane	91	15.651	15.667	(0.994)	30021	2.00000	2.0203(A)
*	58 Chlorobenzene-d5	117	15.749	15.765	(1.000)	1373156	50.0000	
	59 Chlorobenzene	112	15.799	15.805	(1.003)	58991	2.00000	2.0771
	60 Ethylbenzene	91	15.858	15.874	(1.007)	99083	2.00000	2.0645
	61 1,1,1,2-Tetrachloroethane	131	15.897	15.903	(1.009)	21095	2.00000	2.0366
	62 m,p-Xylenes	106	16.016	16.021	(1.017)	73844	4.00000	4.1932
	63 o-Xylene	106	16.548	16.553	(1.051)	36414	2.00000	2.0288
	64 Styrene	104	16.578	16.593	(1.053)	60949	2.00000	2.0391
	65 Bromoform	173	16.894	16.908	(1.073)	11962	2.00000	1.8309
	66 Isopropylbenzene	105	16.972	16.988	(0.913)	87851	2.00000	1.9556
	67 Bromofluorobenzene	95	17.258	17.264	(0.928)	698550	50.0000	49.2269
	68 1,1,2,2-Tetrachloroethane	83	17.426	17.440	(0.937)	19092	2.00000	1.9276
	69 Bromobenzene	156	17.466	17.471	(0.939)	24858	2.00000	1.9908
	70 Propylbenzene	91	17.475	17.481	(0.940)	108236	2.00000	2.0159
	71 1,2,3-Trichloropropane	110	17.515	17.530	(0.942)	4296	2.00000	1.8802
	72 2-Chlorotoluene	91	17.653	17.658	(0.949)	75821	2.00000	2.0430
	73 1,3,5-Trimethylbenzene	105	17.673	17.688	(0.950)	72244	2.00000	2.0085
	74 4-Chlorotoluene	91	17.781	17.796	(0.956)	67886	2.00000	2.0414
	75 tert-Butylbenzene	119	18.057	18.063	(0.971)	65668	2.00000	1.9963
	76 1,2,4-Trimethylbenzene	105	18.126	18.132	(0.975)	75502	2.00000	2.0253

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D
Report Date: 26-Jun-2015 10:50

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.304	18.309	(0.984)	92993	2.00000	1.9215
78 para-Isopropyl Toluene	119	18.442	18.457	(0.992)	72575	2.00000	1.9045
79 1,3-Dichlorobenzene	146	18.521	18.536	(0.996)	47002	2.00000	2.1156
* 80 1,4-Dichlorobenzene-d4	152	18.600	18.615	(1.000)	725537	50.0000	
81 1,4-Dichlorobenzene	146	18.629	18.644	(1.002)	43371	2.00000	1.9694
82 n-Butylbenzene	91	18.915	18.920	(1.017)	66487	2.00000	1.9642
83 1,2-Dichlorobenzene	146	19.083	19.088	(1.026)	43285	2.00000	2.0320
84 1,2-Dibromo-3-Chloropropane	75	20.030	20.044	(1.077)	2974	2.00000	1.8732
85 1,2,4-Trichlorobenzene	180	21.056	21.070	(1.132)	23716	2.00000	1.9377
86 Hexachlorobutadiene	225	21.154	21.168	(1.137)	10067	2.00000	1.7189
87 Naphthalene	128	21.450	21.464	(1.153)	43206	2.00000	1.7622
88 1,2,3-Trichlorobenzene	180	21.805	21.819	(1.172)	19948	2.00000	1.8034

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

[Acetone; 2.000 ug/L; response=8349; MI]

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D

Date : 25-JUN-2015 13:07

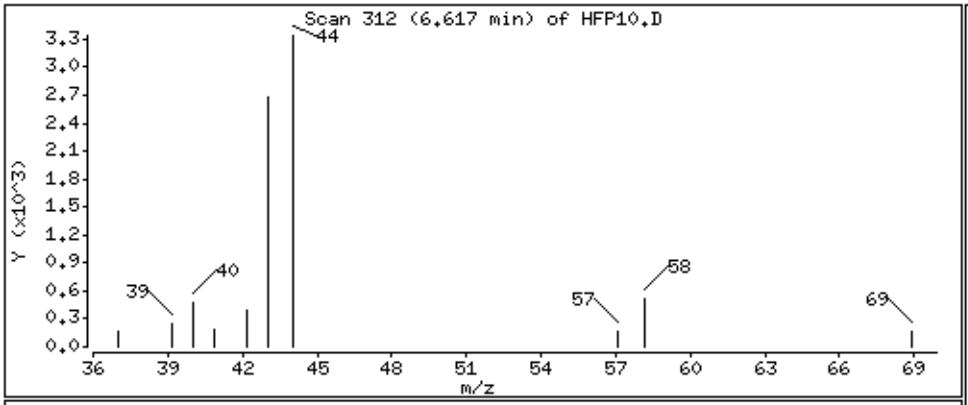
Client ID: DYNA P&T | Instrument: MSVOA08.i

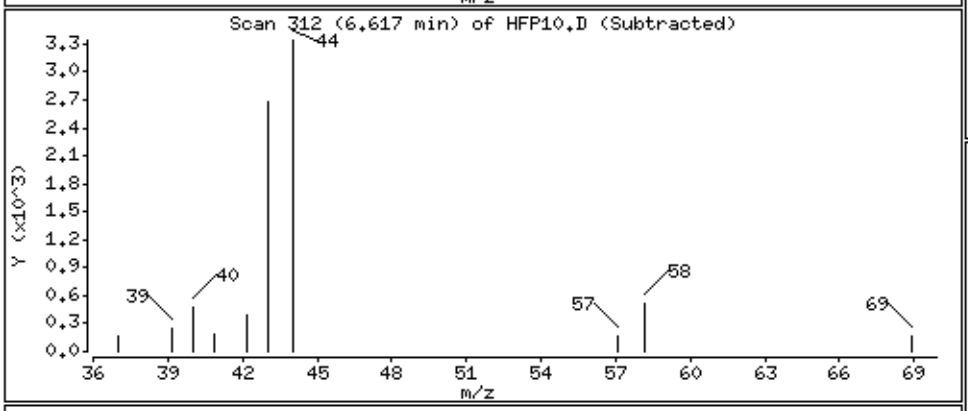
Sample Info: ICAL,S26360,.001/500,S27172,.002/500,

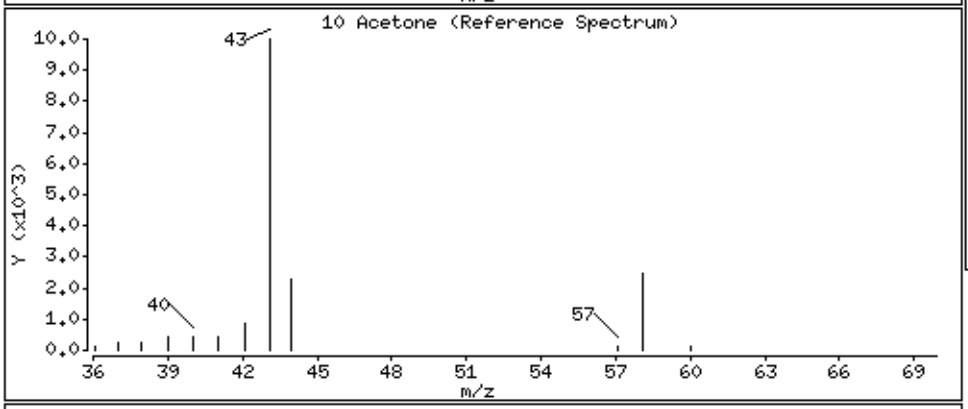
Purge Volume: 5.0 | Operator: VOC

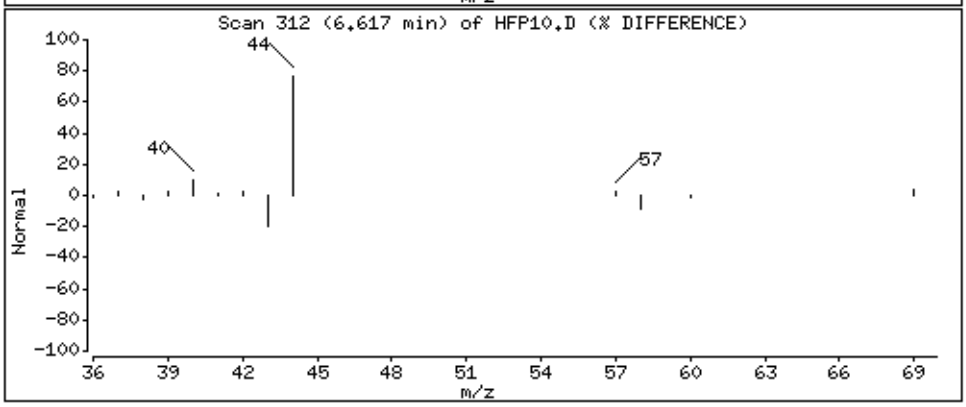
Column phase: RTX 624 | Column diameter: 0.25

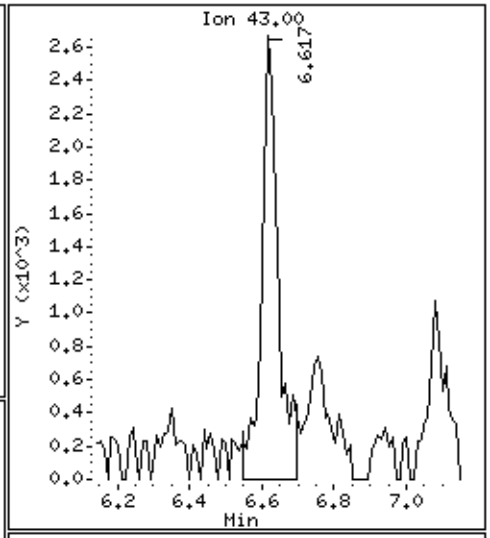
10 Acetone | Concentration: 2.3802 UG/L

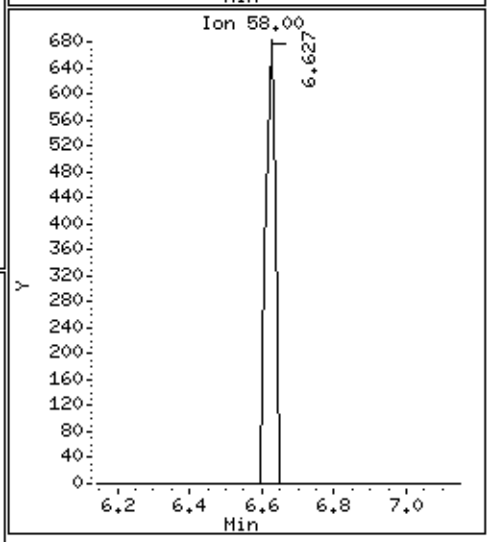












[Acetone; before version]

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP10.D

Date : 25-JUN-2015 13:07

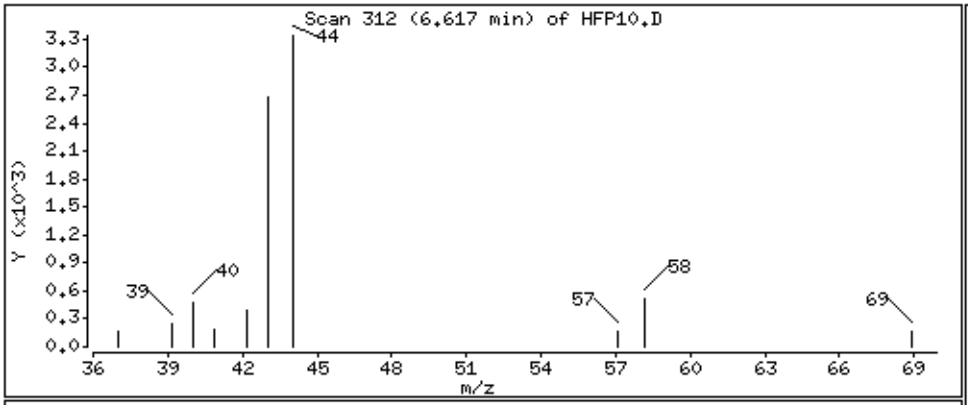
Client ID: DYNA P&T | Instrument: MSVOA08.i

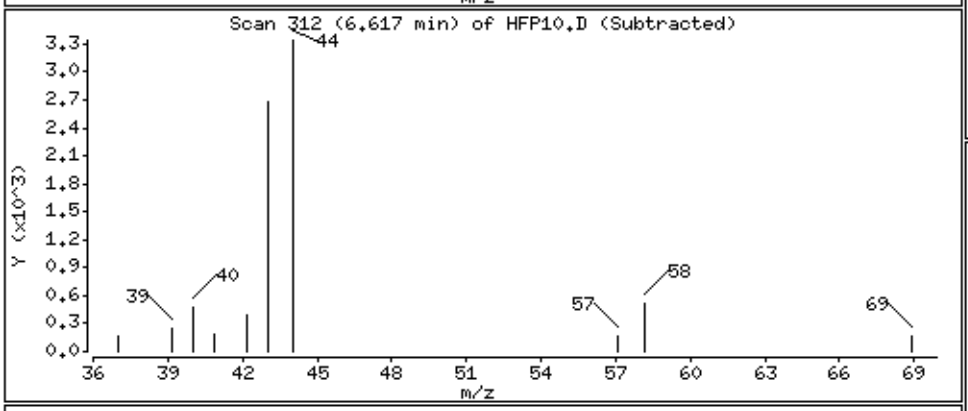
Sample Info: ICAL,S26360,.001/500,S27172,.002/500,

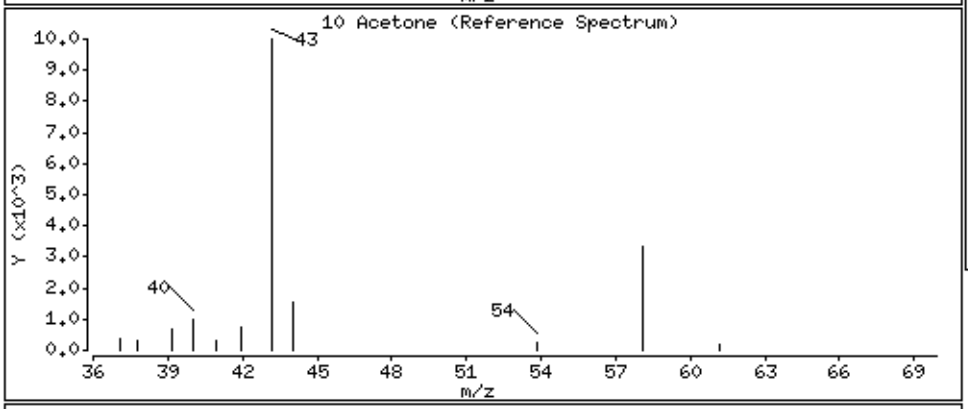
Purge Volume: 5.0 | Operator: VOC

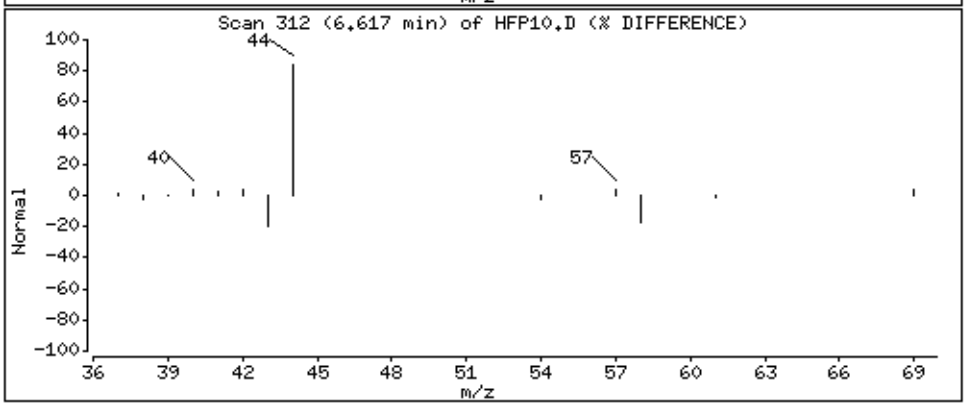
Column phase: RTX 624 | Column diameter: 0.25

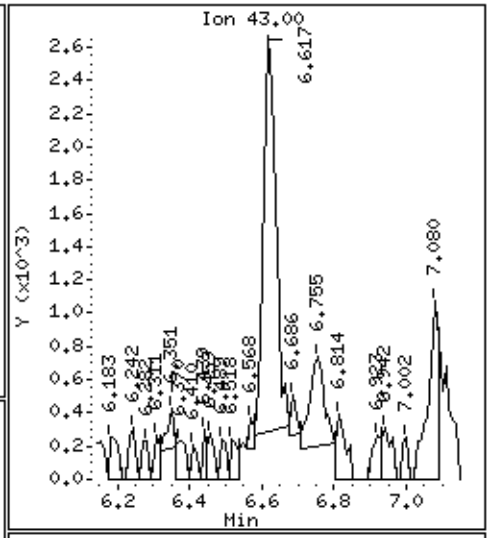
10 Acetone | Concentration: 49.9963 UG/L

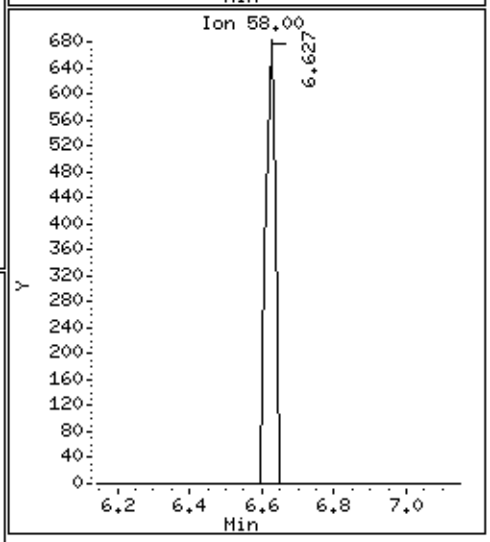




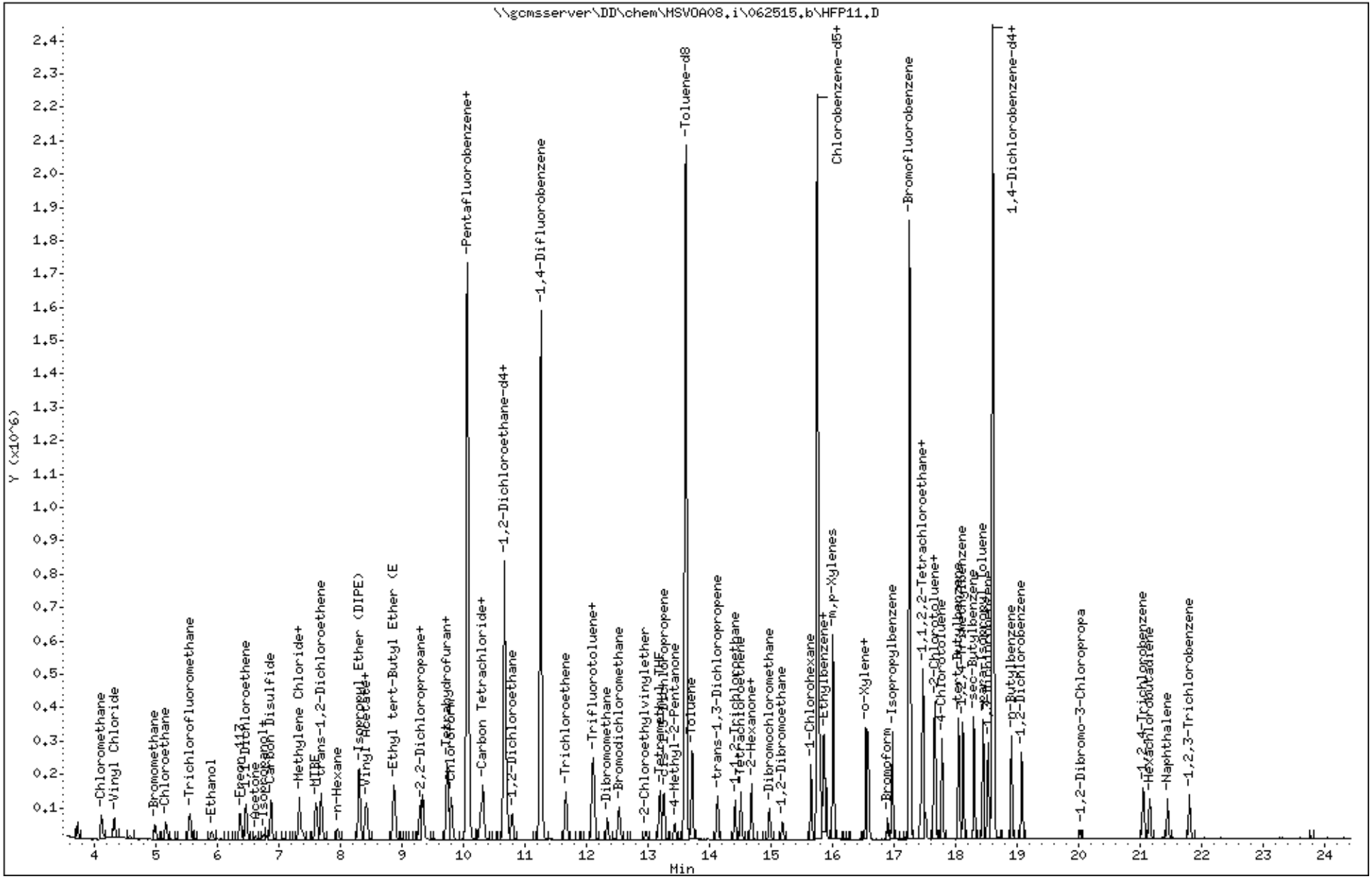








Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP11.D
Date : 25-JUN-2015 13:41
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ICAL,S26360,.0025/500,S27172,.005/500,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP11.D
Report Date: 26-Jun-2015 10:51

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP11.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 13:41 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.0025/500,S27172,.005/500,
Misc Info : S27416,.005/500,S26220,.005/500
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:51 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 13:41 Cal File: HFP11.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.723	3.747	(0.370)	50039	5.00000	5.4176
2 Chloromethane	50	4.117	4.141	(0.409)	84709	5.00000	5.3884
3 Vinyl Chloride	62	4.325	4.348	(0.430)	69340	5.00000	5.3022
4 Bromomethane	94	4.985	5.009	(0.495)	33564	5.00000	4.7763
5 Chloroethane	64	5.163	5.186	(0.513)	51807	5.00000	5.4939
6 Trichlorofluoromethane	101	5.548	5.571	(0.551)	80996	5.00000	5.4863
7 Ethanol	45	5.903	5.926	(0.586)	45988	500.000	500.5594(AM)
8 Freon 113	101	6.366	6.389	(0.633)	47244	5.00000	5.4790
9 1,1-Dichloroethene	96	6.465	6.488	(0.642)	47449	5.00000	5.1803
10 Acetone	43	6.623	6.645	(0.658)	19037	5.00000	5.4857
11 Isopropanol	45	6.751	6.773	(0.671)	22293	50.0000	46.8675(A)
12 Iodomethane	142	6.790	6.813	(0.675)	16932	5.00000	5.8759(A)
13 Carbon Disulfide	76	6.869	6.892	(0.683)	199626	5.00000	5.2815
14 Methylene Chloride	84	7.333	7.355	(0.729)	60069	5.00000	5.1855
15 tert-Butyl Alcohol (TBA)	59	7.382	7.404	(0.733)	31489	50.0000	51.2033(A)
16 MTBE	73	7.609	7.621	(0.756)	130902	5.00000	5.0756
17 trans-1,2-Dichloroethene	96	7.688	7.710	(0.764)	57603	5.00000	5.5300
18 n-Hexane	57	7.964	7.976	(0.791)	19818	5.00000	5.1117(A)
19 Isopropyl Ether (DIPE)	45	8.309	8.321	(0.826)	284520	5.00000	5.2336(A)
20 Vinyl Acetate	43	8.408	8.420	(0.835)	63001	5.00000	3.9605
21 1,1-Dichloroethane	63	8.428	8.439	(0.837)	122681	5.00000	5.2897
22 Ethyl tert-Butyl Ether (ETBE)	59	8.871	8.893	(0.881)	202713	5.00000	5.2480(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP11.D
Report Date: 26-Jun-2015 10:51

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.295	9.317	(0.924)	77273	5.00000	5.3570
	24 2-Butanone	43	9.335	9.357	(0.927)	22334	5.00000	5.0552
	25 cis-1,2-Dichloroethene	96	9.345	9.366	(0.928)	57479	5.00000	4.9233
	26 Tetrahydrofuran	42	9.739	9.751	(0.968)	119940	50.0000	50.7276(A)
	27 Bromochloromethane	128	9.739	9.761	(0.968)	29814	5.00000	5.4391
	28 Chloroform	83	9.808	9.820	(0.975)	104927	5.00000	5.2888
*	29 Pentafluorobenzene	168	10.065	10.076	(1.000)	984437	50.0000	
	30 Dibromofluoromethane	113	10.075	10.086	(1.001)	530557	50.0000	49.6347
	31 1,1,1-Trichloroethane	97	10.075	10.096	(1.001)	76766	5.00000	5.4052
	32 Carbon Tetrachloride	117	10.282	10.303	(0.913)	65665	5.00000	5.5815
	33 1,1-Dichloropropene	75	10.321	10.343	(0.917)	83776	5.00000	5.5052
	34 1,2-Dichloroethane-d4	65	10.666	10.688	(0.947)	517395	50.0000	48.6442
	35 Methyl tert-Amyl Ether (TAME)	73	10.696	10.707	(0.950)	155100	5.00000	5.2388(A)
	36 Benzene	78	10.657	10.678	(0.947)	227124	5.00000	5.2514
	37 1,2-Dichloroethane	62	10.795	10.806	(0.959)	75240	5.00000	5.1705
*	38 1,4-Difluorobenzene	114	11.258	11.279	(1.000)	1532160	50.0000	
	39 Trichloroethene	95	11.663	11.683	(1.036)	57348	5.00000	5.4236
	40 Trifluorotoluene	146	12.097	12.117	(1.074)	88048	5.00000	5.6451(A)
	41 1,2-Dichloropropane	63	12.116	12.137	(1.076)	70982	5.00000	5.2927
	42 Dibromomethane	93	12.333	12.354	(1.095)	33288	5.00000	5.1628
	43 Bromodichloromethane	83	12.530	12.551	(1.113)	77653	5.00000	5.2307
	44 2-Chloroethylvinylether	63	12.974	12.985	(1.152)	12702	5.00000	4.2491
	45 Tetramethyl THF	43	13.191	13.202	(1.172)	137276	5.00000	5.1025(A)
	46 cis-1,3-Dichloropropene	75	13.260	13.271	(1.178)	94365	5.00000	5.2271
	47 4-Methyl-2-Pentanone	43	13.438	13.448	(1.194)	51236	5.00000	5.1766
	48 Toluene-d8	98	13.615	13.626	(0.864)	1615075	50.0000	50.2966
	49 Toluene	92	13.714	13.734	(0.870)	130994	5.00000	5.3971
	50 trans-1,3-Dichloropropene	75	14.128	14.148	(0.897)	79075	5.00000	5.3749
	51 1,1,2-Trichloroethane	85	14.414	14.424	(0.915)	22896	5.00000	5.0980
	52 Tetrachloroethene	166	14.513	14.523	(0.921)	51569	5.00000	5.3871
	53 2-Hexanone	43	14.690	14.700	(0.932)	35774	5.00000	5.1969
	54 1,3-Dichloropropane	76	14.681	14.691	(0.932)	76151	5.00000	5.1678
	55 Dibromochloromethane	129	14.976	14.986	(0.951)	53620	5.00000	5.1919
	56 1,2-Dibromoethane	107	15.184	15.193	(0.964)	41784	5.00000	5.1060
	57 1-Chlorohexane	91	15.657	15.667	(0.994)	74751	5.00000	5.2404(A)
*	58 Chlorobenzene-d5	117	15.756	15.765	(1.000)	1318161	50.0000	
	59 Chlorobenzene	112	15.795	15.805	(1.002)	142761	5.00000	5.2365
	60 Ethylbenzene	91	15.864	15.874	(1.007)	247357	5.00000	5.3691
	61 1,1,1,2-Tetrachloroethane	131	15.894	15.903	(1.009)	52219	5.00000	5.2520
	62 m,p-Xylenes	106	16.012	16.021	(1.016)	180394	10.0000	10.6710
	63 o-Xylene	106	16.545	16.553	(1.050)	96344	5.00000	5.5917
	64 Styrene	104	16.574	16.593	(1.052)	151691	5.00000	5.2868
	65 Bromoform	173	16.900	16.908	(1.073)	31885	5.00000	5.0839
	66 Isopropylbenzene	105	16.979	16.988	(0.913)	234606	5.00000	5.6069
	67 Bromofluorobenzene	95	17.255	17.264	(0.927)	654732	50.0000	49.5351
	68 1,1,2,2-Tetrachloroethane	83	17.432	17.440	(0.937)	45485	5.00000	4.9305
	69 Bromobenzene	156	17.462	17.471	(0.939)	64217	5.00000	5.5215
	70 Propylbenzene	91	17.472	17.481	(0.939)	288330	5.00000	5.7656
	71 1,2,3-Trichloropropane	110	17.521	17.530	(0.942)	10795	5.00000	5.0724
	72 2-Chlorotoluene	91	17.649	17.658	(0.949)	190306	5.00000	5.5054
	73 1,3,5-Trimethylbenzene	105	17.679	17.688	(0.950)	183534	5.00000	5.4783
	74 4-Chlorotoluene	91	17.787	17.796	(0.956)	175200	5.00000	5.6562
	75 tert-Butylbenzene	119	18.054	18.063	(0.970)	168209	5.00000	5.4900
	76 1,2,4-Trimethylbenzene	105	18.123	18.132	(0.974)	192893	5.00000	5.5551

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP11.D
Report Date: 26-Jun-2015 10:51

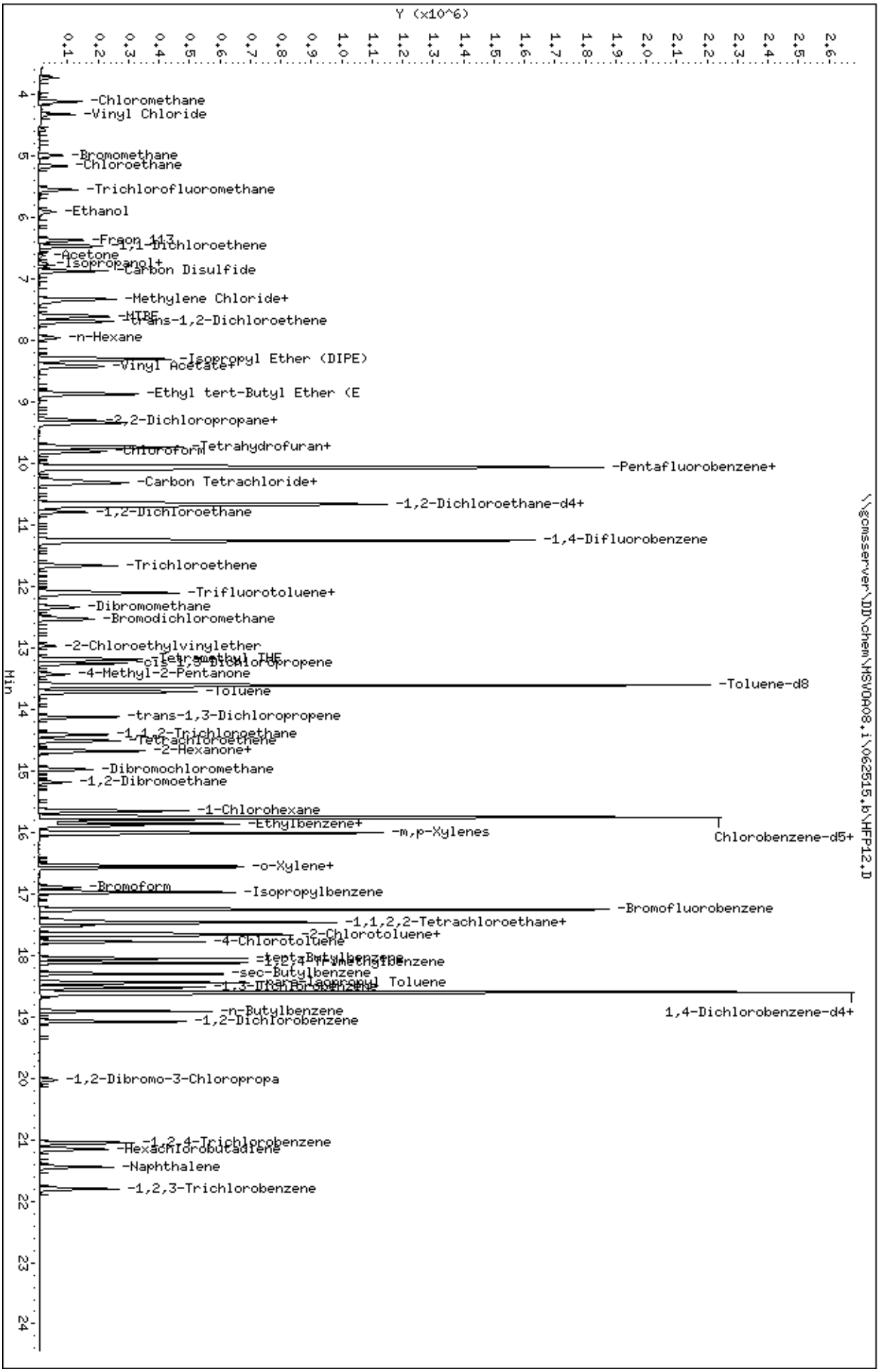
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.300	18.309	(0.984)	260914	5.00000	5.7882
78 para-Isopropyl Toluene	119	18.448	18.457	(0.992)	207273	5.00000	5.8396
79 1,3-Dichlorobenzene	146	18.527	18.536	(0.996)	116109	5.00000	5.6110
* 80 1,4-Dichlorobenzene-d4	152	18.606	18.615	(1.000)	675795	50.0000	
81 1,4-Dichlorobenzene	146	18.636	18.644	(1.002)	112414	5.00000	5.4804
82 n-Butylbenzene	91	18.912	18.920	(1.016)	175659	5.00000	5.5715
83 1,2-Dichlorobenzene	146	19.079	19.088	(1.025)	110074	5.00000	5.5477
84 1,2-Dibromo-3-Chloropropane	75	20.036	20.044	(1.077)	7946	5.00000	5.3733
85 1,2,4-Trichlorobenzene	180	21.052	21.070	(1.131)	61119	5.00000	5.3613
86 Hexachlorobutadiene	225	21.161	21.168	(1.137)	30111	5.00000	5.5198
87 Naphthalene	128	21.447	21.464	(1.153)	119878	5.00000	5.2493
88 1,2,3-Trichlorobenzene	180	21.802	21.819	(1.172)	55959	5.00000	5.4315

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP12.D
Date : 25-JUN-2015 14:15
Client ID: DYNA P&T
Sample Info: ICAL,S26360,.001/100,S27172,.002/100,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP12.D
Report Date: 26-Jun-2015 10:52

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP12.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 14:15 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.001/100,S27172,.002/100,
Misc Info : S27416,.002/100,S26220,.002/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:52 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 14:15 Cal File: HFP12.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.731	3.747	(0.371)	68149	10.0000	7.2449
2 Chloromethane	50	4.116	4.141	(0.409)	163840	10.0000	10.2335
3 Vinyl Chloride	62	4.323	4.348	(0.430)	120881	10.0000	9.0762
4 Bromomethane	94	4.984	5.009	(0.495)	66995	10.0000	9.3612
5 Chloroethane	64	5.161	5.186	(0.513)	99476	10.0000	10.3582
6 Trichlorofluoromethane	101	5.546	5.571	(0.551)	133562	10.0000	8.8832
7 Ethanol	45	5.911	5.926	(0.587)	104590	1000.00	1117.8168(A)
8 Freon 113	101	6.374	6.389	(0.633)	89804	10.0000	10.2263
9 1,1-Dichloroethene	96	6.473	6.488	(0.643)	93491	10.0000	10.0223
10 Acetone	43	6.621	6.645	(0.658)	35196	10.0000	9.9585
11 Isopropanol	45	6.749	6.773	(0.671)	52751	100.000	108.8939(A)
12 Iodomethane	142	6.789	6.813	(0.675)	39258	10.0000	9.5629(A)
13 Carbon Disulfide	76	6.877	6.892	(0.683)	389620	10.0000	10.1218
14 Methylene Chloride	84	7.331	7.355	(0.729)	123215	10.0000	10.4443
15 tert-Butyl Alcohol (TBA)	59	7.380	7.404	(0.733)	67216	100.000	107.3202(A)
16 MTBE	73	7.607	7.621	(0.756)	271392	10.0000	10.3327
17 trans-1,2-Dichloroethene	96	7.696	7.710	(0.765)	106201	10.0000	10.0110
18 n-Hexane	57	7.962	7.976	(0.791)	38384	10.0000	9.7213(A)
19 Isopropyl Ether (DIPE)	45	8.307	8.321	(0.826)	569980	10.0000	10.2948(A)
20 Vinyl Acetate	43	8.406	8.420	(0.835)	167225	10.0000	10.3222
21 1,1-Dichloroethane	63	8.426	8.439	(0.837)	232817	10.0000	9.8568
22 Ethyl tert-Butyl Ether (ETBE)	59	8.870	8.893	(0.881)	414483	10.0000	10.5364(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP12.D
Report Date: 26-Jun-2015 10:52

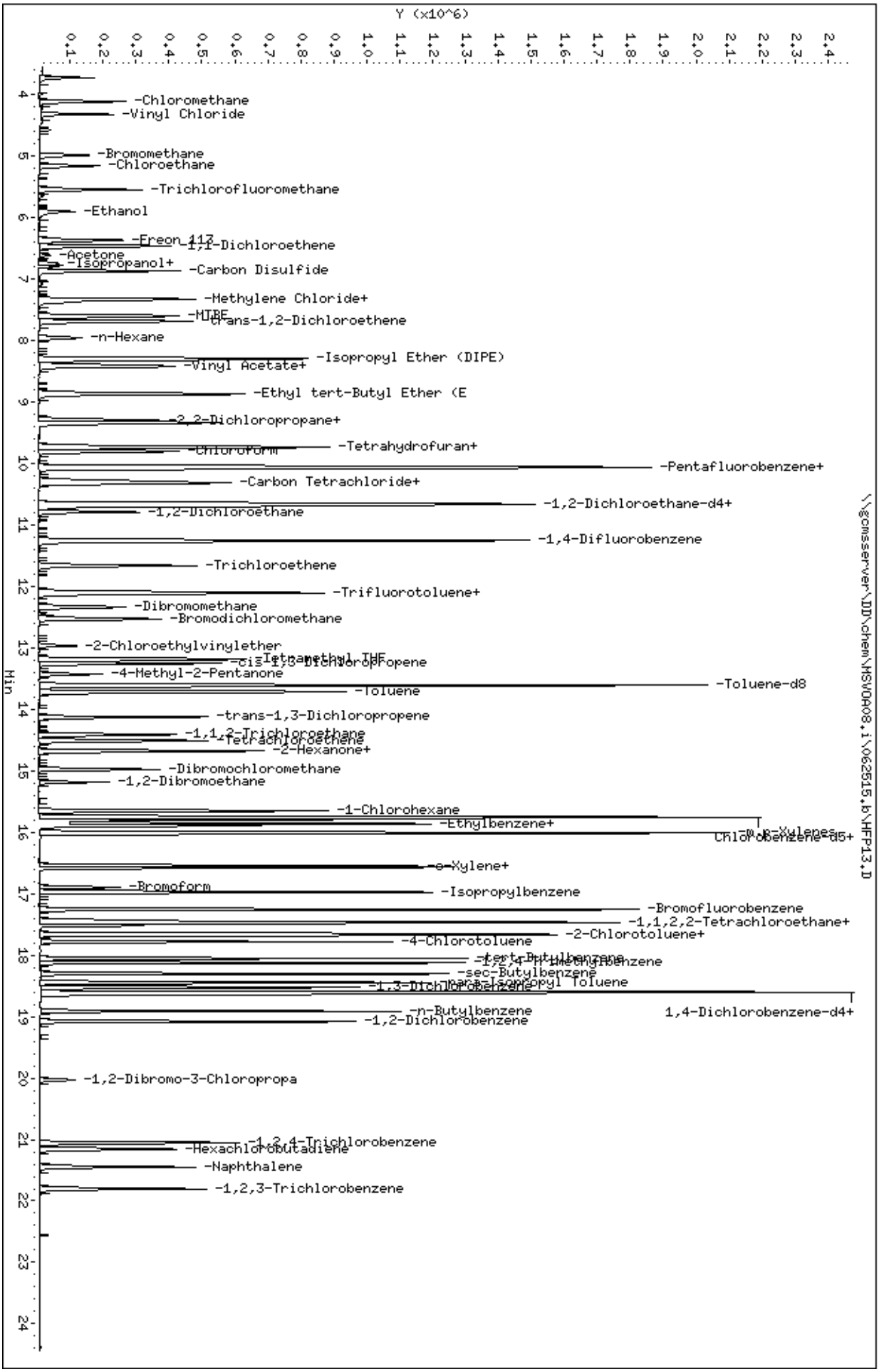
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.304	9.317	(0.925)	143407	10.0000	9.7619
	24 2-Butanone	43	9.343	9.357	(0.928)	46016	10.0000	10.2271
	25 cis-1,2-Dichloroethene	96	9.343	9.366	(0.928)	122563	10.0000	10.3082
	26 Tetrahydrofuran	42	9.738	9.751	(0.968)	256231	100.000	106.4099(A)
	27 Bromochloromethane	128	9.738	9.761	(0.968)	56004	10.0000	10.0322
	28 Chloroform	83	9.807	9.820	(0.975)	203498	10.0000	10.0716
*	29 Pentafluorobenzene	168	10.063	10.076	(1.000)	1002579	50.0000	
	30 Dibromofluoromethane	113	10.073	10.086	(1.001)	549253	50.0000	50.4539
	31 1,1,1-Trichloroethane	97	10.073	10.096	(1.001)	139606	10.0000	9.6520
	32 Carbon Tetrachloride	117	10.290	10.303	(0.914)	120720	10.0000	9.8554
	33 1,1-Dichloropropene	75	10.319	10.343	(0.917)	152443	10.0000	9.6214
	34 1,2-Dichloroethane-d4	65	10.665	10.688	(0.947)	574649	50.0000	51.8905
	35 Methyl tert-Amyl Ether (TAME)	73	10.694	10.707	(0.950)	329811	10.0000	10.6995(A)
	36 Benzene	78	10.655	10.678	(0.947)	469637	10.0000	10.4292
	37 1,2-Dichloroethane	62	10.793	10.806	(0.959)	151079	10.0000	9.9716
*	38 1,4-Difluorobenzene	114	11.256	11.279	(1.000)	1595246	50.0000	
	39 Trichloroethene	95	11.671	11.683	(1.037)	109049	10.0000	9.9054
	40 Trifluorotoluene	146	12.095	12.117	(1.074)	160577	10.0000	9.8881(A)
	41 1,2-Dichloropropane	63	12.115	12.137	(1.076)	140803	10.0000	10.0838
	42 Dibromomethane	93	12.341	12.354	(1.096)	68291	10.0000	10.1728
	43 Bromodichloromethane	83	12.529	12.551	(1.113)	155915	10.0000	10.0872
	44 2-Chloroethylvinylether	63	12.973	12.985	(1.152)	30727	10.0000	9.8723
	45 Tetramethyl THF	43	13.190	13.202	(1.172)	295519	10.0000	10.5501(A)
	46 cis-1,3-Dichloropropene	75	13.259	13.271	(1.178)	190697	10.0000	10.1455
	47 4-Methyl-2-Pentanone	43	13.436	13.448	(1.194)	102005	10.0000	9.8986
	48 Toluene-d8	98	13.614	13.626	(0.864)	1648305	50.0000	50.8899
	49 Toluene	92	13.722	13.734	(0.871)	258555	10.0000	10.5611
	50 trans-1,3-Dichloropropene	75	14.127	14.148	(0.897)	151382	10.0000	10.2013
	51 1,1,2-Trichloroethane	85	14.413	14.424	(0.915)	49328	10.0000	10.8889
	52 Tetrachloroethene	166	14.511	14.523	(0.921)	96246	10.0000	9.9678
	53 2-Hexanone	43	14.679	14.700	(0.932)	76385	10.0000	11.0010
	54 1,3-Dichloropropane	76	14.679	14.691	(0.932)	157764	10.0000	10.6143
	55 Dibromochloromethane	129	14.975	14.986	(0.951)	105067	10.0000	10.0859
	56 1,2-Dibromoethane	107	15.182	15.193	(0.964)	88056	10.0000	10.6680
	57 1-Chlorohexane	91	15.655	15.667	(0.994)	153513	10.0000	10.6694(A)
*	58 Chlorobenzene-d5	117	15.754	15.765	(1.000)	1329599	50.0000	
	59 Chlorobenzene	112	15.793	15.805	(1.002)	292890	10.0000	10.6508
	60 Ethylbenzene	91	15.862	15.874	(1.007)	495017	10.0000	10.6524
	61 1,1,1,2-Tetrachloroethane	131	15.902	15.903	(1.009)	104029	10.0000	10.3729
	62 m,p-Xylenes	106	16.010	16.021	(1.016)	345918	20.0000	20.2865
	63 o-Xylene	106	16.553	16.553	(1.051)	185860	10.0000	10.6944
	64 Styrene	104	16.582	16.593	(1.053)	317609	10.0000	10.9743
	65 Bromoform	173	16.898	16.908	(1.073)	66498	10.0000	10.5117
	66 Isopropylbenzene	105	16.977	16.988	(0.913)	445731	10.0000	9.8505
	67 Bromofluorobenzene	95	17.253	17.264	(0.927)	698139	50.0000	48.8414
	68 1,1,2,2-Tetrachloroethane	83	17.431	17.440	(0.937)	103906	10.0000	10.4150
	69 Bromobenzene	156	17.460	17.471	(0.939)	128348	10.0000	10.2045
	70 Propylbenzene	91	17.470	17.481	(0.939)	549037	10.0000	10.1521
	71 1,2,3-Trichloropropane	110	17.519	17.530	(0.942)	23595	10.0000	10.2520
	72 2-Chlorotoluene	91	17.648	17.658	(0.949)	371272	10.0000	9.9318
	73 1,3,5-Trimethylbenzene	105	17.677	17.688	(0.950)	366172	10.0000	10.1068
	74 4-Chlorotoluene	91	17.786	17.796	(0.956)	323943	10.0000	9.6707
	75 tert-Butylbenzene	119	18.052	18.063	(0.970)	322354	10.0000	9.7288
	76 1,2,4-Trimethylbenzene	105	18.121	18.132	(0.974)	388651	10.0000	10.3498

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP12.D
Report Date: 26-Jun-2015 10:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.308	18.309	(0.984)	472338	10.0000	9.6894
78 para-Isopropyl Toluene	119	18.447	18.457	(0.992)	382453	10.0000	9.9636
79 1,3-Dichlorobenzene	146	18.525	18.536	(0.996)	219060	10.0000	9.7889
* 80 1,4-Dichlorobenzene-d4	152	18.604	18.615	(1.000)	730833	50.0000	
81 1,4-Dichlorobenzene	146	18.634	18.644	(1.002)	222591	10.0000	10.0346
82 n-Butylbenzene	91	18.910	18.920	(1.016)	339932	10.0000	9.9699
83 1,2-Dichlorobenzene	146	19.078	19.088	(1.025)	209764	10.0000	9.7760
84 1,2-Dibromo-3-Chloropropane	75	20.025	20.044	(1.076)	16895	10.0000	10.5644
85 1,2,4-Trichlorobenzene	180	21.050	21.070	(1.131)	123641	10.0000	10.0290
86 Hexachlorobutadiene	225	21.159	21.168	(1.137)	58398	10.0000	9.8991
87 Naphthalene	128	21.445	21.464	(1.153)	251242	10.0000	10.1730
88 1,2,3-Trichlorobenzene	180	21.810	21.819	(1.172)	111499	10.0000	10.0074

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.


Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP13.D
Date : 25-JUN-2015 14:49
Client ID: DYNA P&T
Sample Info: ICAL,S26360,.002/100,S27172,.004/100,
Purge Volume: 5.0
Column phase: RTX 624
Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25
\\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP13.D
Y (x10^6)
Min
-Chloromethane
-Vinyl Chloride
-Bromomethane
-Chloroethane
-Trichlorofluoromethane
-Ethanol
-Freon 113
-1,1-Dichloroethene
-Acetone
-Isopropanol+
-Carbon Disulfide
-Methylene Chloride+
-MTBE
-trans-1,2-Dichloroethene
-n-Hexane
-Isopropyl Ether (DIPE)
-Vinyl Acetate+
-Ethyl tert-Butyl Ether (E
-2,2-Dichloropropane+
-Chloroform
-Tetrahydrofuran+
-Pentafluorobenzene+
-Carbon Tetrachloride+
-1,2-Dichloroethane-d4+
-1,2-Dichloroethane
-1,4-Difluorobenzene
-Trichloroethene
-Trifluorotoluene+
-Dibromomethane
-Bromodichloromethane
-2-Chloroethylvinylether
-Tetramethyl THF
-cis-1,3-Dichloropropene
-4-Methyl-2-Pentanone
-Toluene-d8
-Toluene
-trans-1,3-Dichloropropene
-1,1,2-Trichloroethane
-Tetrachloroethene
-2-Hexanone+
-Dibromochloromethane
-1,2-Dibromoethane
-1-Chlorohexane
-Ethylbenzene+
-m,p-Xylenes
-Chlorobenzene-d5+
-o-Xylene+
-Bromoform
-Isopropylbenzene
-Bromofluorobenzene
-1,1,2,2-Tetrachloroethane+
-2-Chlorotoluene+
-4-Chlorotoluene
-tert-Butylbenzene
-1,2,4-Trimethylbenzene
-sec-Butylbenzene
-para-Isopropyl Toluene
-1,3-Dichlorobenzene
-n-Butylbenzene
1,4-Dichlorobenzene-d4+
-1,2-Dichlorobenzene
-1,2-Dibromo-3-Chloropropa
-1,2,4-Trichlorobenzene
-Hexachlorobutadiene
-Naphthalene
-1,2,3-Trichlorobenzene

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP13.D
Report Date: 26-Jun-2015 10:52

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP13.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 14:49 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.002/100,S27172,.004/100,
Misc Info : S27416,.004/100,S26220,.004/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:52 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 14:49 Cal File: HFP13.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.722	3.747	(0.370)	192393	20.0000	21.5801
2 Chloromethane	50	4.117	4.141	(0.409)	308663	20.0000	20.3414
3 Vinyl Chloride	62	4.324	4.348	(0.430)	255698	20.0000	20.2566
4 Bromomethane	94	4.995	5.009	(0.496)	136710	20.0000	20.1549
5 Chloroethane	64	5.162	5.186	(0.513)	183723	20.0000	20.1846
6 Trichlorofluoromethane	101	5.547	5.571	(0.551)	300688	20.0000	21.1005
7 Ethanol	45	5.902	5.926	(0.586)	196581	2000.00	2216.7277(A)
8 Freon 113	101	6.376	6.389	(0.634)	160129	20.0000	19.2391
9 1,1-Dichloroethene	96	6.464	6.488	(0.642)	177242	20.0000	20.0474
10 Acetone	43	6.612	6.645	(0.657)	63620	20.0000	18.9927
11 Isopropanol	45	6.750	6.773	(0.671)	103297	200.000	224.9837(A)
12 Iodomethane	142	6.790	6.813	(0.675)	93331	20.0000	19.4023(A)
13 Carbon Disulfide	76	6.869	6.892	(0.682)	741041	20.0000	20.3118
14 Methylene Chloride	84	7.332	7.355	(0.729)	229400	20.0000	20.5164
15 tert-Butyl Alcohol (TBA)	59	7.382	7.404	(0.733)	128782	200.000	216.9474(A)
16 MTBE	73	7.608	7.621	(0.756)	528893	20.0000	21.2459
17 trans-1,2-Dichloroethene	96	7.697	7.710	(0.765)	202614	20.0000	20.1517
18 n-Hexane	57	7.963	7.976	(0.791)	71057	20.0000	18.9877(A)
19 Isopropyl Ether (DIPE)	45	8.299	8.321	(0.825)	1104362	20.0000	21.0455(A)
20 Vinyl Acetate	43	8.397	8.420	(0.834)	341387	20.0000	22.2336
21 1,1-Dichloroethane	63	8.427	8.439	(0.837)	444080	20.0000	19.8370
22 Ethyl tert-Butyl Ether (ETBE)	59	8.871	8.893	(0.881)	787711	20.0000	21.1272(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP13.D
Report Date: 26-Jun-2015 10:52

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.305	9.317	(0.925)	273454	20.0000	19.6399
	24 2-Butanone	43	9.334	9.357	(0.927)	86237	20.0000	20.2223
	25 cis-1,2-Dichloroethene	96	9.344	9.366	(0.928)	231723	20.0000	20.5628
	26 Tetrahydrofuran	42	9.729	9.751	(0.967)	489325	200.000	214.4065(A)
	27 Bromochloromethane	128	9.749	9.761	(0.969)	111164	20.0000	21.0103
	28 Chloroform	83	9.808	9.820	(0.975)	391238	20.0000	20.4301
*	29 Pentafluorobenzene	168	10.064	10.076	(1.000)	950229	50.0000	
	30 Dibromofluoromethane	113	10.074	10.086	(1.001)	512641	50.0000	49.6851
	31 1,1,1-Trichloroethane	97	10.074	10.096	(1.001)	270167	20.0000	19.7077
	32 Carbon Tetrachloride	117	10.281	10.303	(0.913)	226067	20.0000	20.0488
	33 1,1-Dichloropropene	75	10.321	10.343	(0.917)	297229	20.0000	20.3788
	34 1,2-Dichloroethane-d4	65	10.666	10.688	(0.947)	514944	50.0000	50.5127
	35 Methyl tert-Amyl Ether (TAME)	73	10.695	10.707	(0.950)	610658	20.0000	21.5204(A)
	36 Benzene	78	10.656	10.678	(0.947)	857965	20.0000	20.6973
	37 1,2-Dichloroethane	62	10.794	10.806	(0.959)	297470	20.0000	21.3284
*	38 1,4-Difluorobenzene	114	11.258	11.279	(1.000)	1468497	50.0000	
	39 Trichloroethene	95	11.662	11.683	(1.036)	207389	20.0000	20.4640
	40 Trifluorotoluene	146	12.096	12.117	(1.074)	295437	20.0000	19.7628(A)
	41 1,2-Dichloropropane	63	12.116	12.137	(1.076)	266328	20.0000	20.7197
	42 Dibromomethane	93	12.343	12.354	(1.096)	131670	20.0000	21.3068
	43 Bromodichloromethane	83	12.530	12.551	(1.113)	294667	20.0000	20.7096
	44 2-Chloroethylvinylether	63	12.964	12.985	(1.152)	61230	20.0000	21.3707
	45 Tetramethyl THF	43	13.191	13.202	(1.172)	552045	20.0000	21.4092(A)
	46 cis-1,3-Dichloropropene	75	13.260	13.271	(1.178)	366189	20.0000	21.1635
	47 4-Methyl-2-Pentanone	43	13.427	13.448	(1.193)	201986	20.0000	21.2926
	48 Toluene-d8	98	13.615	13.626	(0.864)	1555236	50.0000	50.3366
	49 Toluene	92	13.723	13.734	(0.871)	476008	20.0000	20.3830
	50 trans-1,3-Dichloropropene	75	14.128	14.148	(0.897)	305516	20.0000	21.5829
	51 1,1,2-Trichloroethane	85	14.414	14.424	(0.915)	89245	20.0000	20.6523
	52 Tetrachloroethene	166	14.512	14.523	(0.921)	183089	20.0000	19.8780
	53 2-Hexanone	43	14.680	14.700	(0.932)	147446	20.0000	22.2615
	54 1,3-Dichloropropane	76	14.680	14.691	(0.932)	305689	20.0000	21.5604
	55 Dibromochloromethane	129	14.976	14.986	(0.951)	207063	20.0000	20.8376
	56 1,2-Dibromoethane	107	15.183	15.193	(0.964)	168977	20.0000	21.4607
	57 1-Chlorohexane	91	15.657	15.667	(0.994)	283563	20.0000	20.6604(A)
*	58 Chlorobenzene-d5	117	15.755	15.765	(1.000)	1268314	50.0000	
	59 Chlorobenzene	112	15.795	15.805	(1.002)	541160	20.0000	20.6300
	60 Ethylbenzene	91	15.864	15.874	(1.007)	917755	20.0000	20.7037
	61 1,1,1,2-Tetrachloroethane	131	15.893	15.903	(1.009)	199739	20.0000	20.8786
	62 m,p-Xylenes	106	16.012	16.021	(1.016)	644349	40.0000	39.6140
	63 o-Xylene	106	16.544	16.553	(1.050)	334193	20.0000	20.1587
	64 Styrene	104	16.574	16.593	(1.052)	578061	20.0000	20.9389
	65 Bromoform	173	16.899	16.908	(1.073)	126213	20.0000	20.9153
	66 Isopropylbenzene	105	16.978	16.988	(0.913)	860978	20.0000	20.8671
	67 Bromofluorobenzene	95	17.254	17.264	(0.927)	647593	50.0000	49.6858
	68 1,1,2,2-Tetrachloroethane	83	17.432	17.440	(0.937)	191702	20.0000	21.0731
	69 Bromobenzene	156	17.461	17.471	(0.939)	237383	20.0000	20.6985
	70 Propylbenzene	91	17.471	17.481	(0.939)	1003716	20.0000	20.3540
	71 1,2,3-Trichloropropane	110	17.521	17.530	(0.942)	44364	20.0000	21.1400
	72 2-Chlorotoluene	91	17.649	17.658	(0.949)	708190	20.0000	20.7764
	73 1,3,5-Trimethylbenzene	105	17.678	17.688	(0.950)	681303	20.0000	20.6230
	74 4-Chlorotoluene	91	17.787	17.796	(0.956)	641081	20.0000	20.9889
	75 tert-Butylbenzene	119	18.053	18.063	(0.970)	611260	20.0000	20.2318
	76 1,2,4-Trimethylbenzene	105	18.122	18.132	(0.974)	706339	20.0000	20.6287

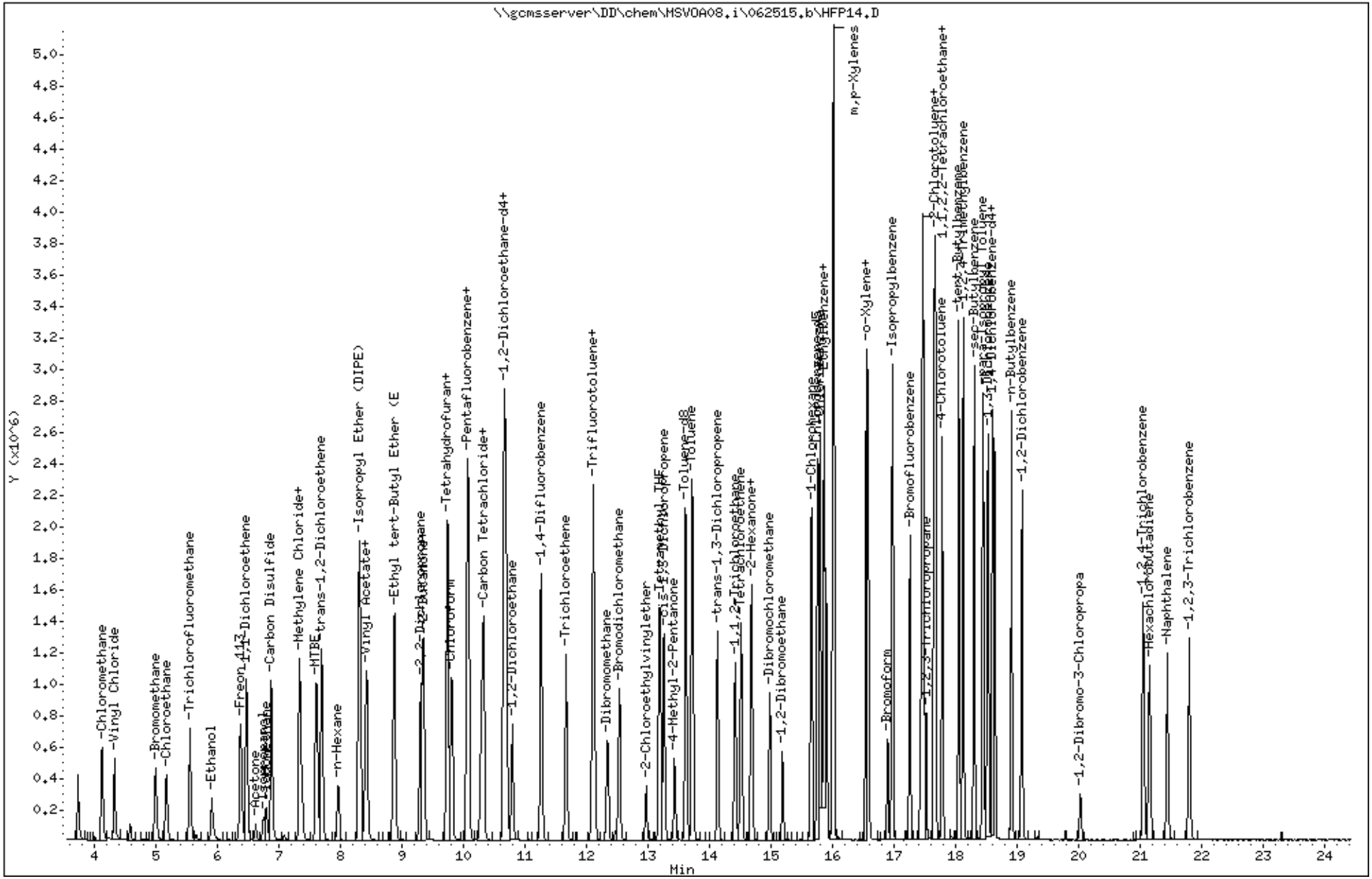
Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP13.D
Report Date: 26-Jun-2015 10:52

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.300	18.309	(0.984)	905886	20.0000	20.3799
78 para-Isopropyl Toluene	119	18.448	18.457	(0.992)	694729	20.0000	19.8490
79 1,3-Dichlorobenzene	146	18.527	18.536	(0.996)	406970	20.0000	19.9442
* 80 1,4-Dichlorobenzene-d4	152	18.606	18.615	(1.000)	666399	50.0000	
81 1,4-Dichlorobenzene	146	18.635	18.644	(1.002)	415230	20.0000	20.5290
82 n-Butylbenzene	91	18.911	18.920	(1.016)	635222	20.0000	20.4319
83 1,2-Dichlorobenzene	146	19.079	19.088	(1.025)	418936	20.0000	21.4123
84 1,2-Dibromo-3-Chloropropane	75	20.026	20.044	(1.076)	30513	20.0000	20.9246
85 1,2,4-Trichlorobenzene	180	21.052	21.070	(1.131)	232101	20.0000	20.6470
86 Hexachlorobutadiene	225	21.160	21.168	(1.137)	107405	20.0000	19.9668
87 Naphthalene	128	21.446	21.464	(1.153)	484989	20.0000	21.5365
88 1,2,3-Trichlorobenzene	180	21.801	21.819	(1.172)	210935	20.0000	20.7626

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP14.D
Date : 25-JUN-2015 15:23
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ICAL,S26360,.005/100,S27172,.01/100,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP14.D
Report Date: 26-Jun-2015 10:53

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP14.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 15:23 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.005/100,S27172,.01/100,
Misc Info : S27416,.01/100,S26220,.01/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:53 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 15:23 Cal File: HFP14.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.726	3.747	(0.370)	468599	50.0000	48.3768
2 Chloromethane	50	4.121	4.141	(0.410)	758691	50.0000	46.0184
3 Vinyl Chloride	62	4.318	4.348	(0.429)	638946	50.0000	46.5881
4 Bromomethane	94	4.989	5.009	(0.496)	393484	50.0000	53.3923
5 Chloroethane	64	5.166	5.186	(0.514)	450664	50.0000	45.5703
6 Trichlorofluoromethane	101	5.551	5.571	(0.552)	731458	50.0000	47.2430
7 Ethanol	45	5.906	5.926	(0.587)	473128	5000.00	4910.4411(A)
8 Freon 113	101	6.369	6.389	(0.633)	444617	50.0000	49.1668
9 1,1-Dichloroethene	96	6.468	6.488	(0.643)	442608	50.0000	46.0767
10 Acetone	43	6.616	6.645	(0.658)	165551	50.0000	45.4879
11 Isopropanol	45	6.744	6.773	(0.671)	250946	500.000	503.0542(A)
12 Iodomethane	142	6.794	6.813	(0.675)	293968	50.0000	49.7279(A)
13 Carbon Disulfide	76	6.872	6.892	(0.683)	1796414	50.0000	45.3194
14 Methylene Chloride	84	7.336	7.355	(0.729)	563227	50.0000	46.3620
15 tert-Butyl Alcohol (TBA)	59	7.366	7.404	(0.732)	334587	500.000	518.7755(A)
16 MTBE	73	7.612	7.621	(0.757)	1265434	50.0000	46.7863
17 trans-1,2-Dichloroethene	96	7.691	7.710	(0.765)	517253	50.0000	47.3496
18 n-Hexane	57	7.957	7.976	(0.791)	200704	50.0000	49.3621(A)
19 Isopropyl Ether (DIPE)	45	8.303	8.321	(0.825)	2570626	50.0000	45.0878(A)
20 Vinyl Acetate	43	8.401	8.420	(0.835)	896962	50.0000	53.7661
21 1,1-Dichloroethane	63	8.431	8.439	(0.838)	1135655	50.0000	46.6910
22 Ethyl tert-Butyl Ether (ETBE)	59	8.875	8.893	(0.882)	1877877	50.0000	46.3569(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP14.D
Report Date: 26-Jun-2015 10:53

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
23	2,2-Dichloropropane	77	9.299	9.317	(0.924)	739499	50.0000	48.8837
24	2-Butanone	43	9.338	9.357	(0.928)	221496	50.0000	47.8051
25	cis-1,2-Dichloroethene	96	9.348	9.366	(0.929)	578260	50.0000	47.2289
26	Tetrahydrofuran	42	9.733	9.751	(0.968)	1170539	500.000	472.0604(A)
27	Bromochloromethane	128	9.743	9.761	(0.969)	278278	50.0000	48.4083
28	Chloroform	83	9.802	9.820	(0.975)	966615	50.0000	46.4573
* 29	Pentafluorobenzene	168	10.058	10.076	(1.000)	1032422	50.0000	
30	Dibromofluoromethane	113	10.078	10.086	(1.002)	547796	50.0000	48.8655
31	1,1,1-Trichloroethane	97	10.078	10.096	(1.002)	685884	50.0000	46.0495
32	Carbon Tetrachloride	117	10.285	10.303	(0.913)	597988	50.0000	47.2687
33	1,1-Dichloropropene	75	10.324	10.343	(0.917)	746602	50.0000	45.6252
34	1,2-Dichloroethane-d4	65	10.670	10.688	(0.947)	557401	50.0000	48.7345
35	Methyl tert-Amyl Ether (TAME)	73	10.699	10.707	(0.950)	1496577	50.0000	47.0090(A)
36	Benzene	78	10.660	10.678	(0.947)	2158652	50.0000	46.4148
37	1,2-Dichloroethane	62	10.798	10.806	(0.959)	738698	50.0000	47.2076
* 38	1,4-Difluorobenzene	114	11.261	11.279	(1.000)	1647573	50.0000	
39	Trichloroethene	95	11.666	11.683	(1.036)	501953	50.0000	44.1465
40	Trifluorotoluene	146	12.100	12.117	(1.074)	784042	50.0000	46.7468(A)
41	1,2-Dichloropropane	63	12.119	12.137	(1.076)	663603	50.0000	46.0155
42	Dibromomethane	93	12.336	12.354	(1.095)	320472	50.0000	46.2222
43	Bromodichloromethane	83	12.534	12.551	(1.113)	769233	50.0000	48.1866
44	2-Chloroethylvinylether	63	12.968	12.985	(1.152)	177707	50.0000	55.2826
45	Tetramethyl THF	43	13.185	13.202	(1.171)	1322359	50.0000	45.7093(A)
46	cis-1,3-Dichloropropene	75	13.264	13.271	(1.178)	891561	50.0000	45.9265
47	4-Methyl-2-Pentanone	43	13.431	13.448	(1.193)	509108	50.0000	47.8351
48	Toluene-d8	98	13.609	13.626	(0.864)	1677994	50.0000	48.2832
49	Toluene	92	13.717	13.734	(0.870)	1181134	50.0000	44.9646
50	trans-1,3-Dichloropropene	75	14.132	14.148	(0.897)	757605	50.0000	47.5815
51	1,1,2-Trichloroethane	85	14.418	14.424	(0.915)	235783	50.0000	48.5083
52	Tetrachloroethene	166	14.516	14.523	(0.921)	494371	50.0000	47.7179
53	2-Hexanone	43	14.684	14.700	(0.932)	348951	50.0000	46.8386
54	1,3-Dichloropropane	76	14.684	14.691	(0.932)	724888	50.0000	45.4534
55	Dibromochloromethane	129	14.980	14.986	(0.951)	537933	50.0000	48.1274
56	1,2-Dibromoethane	107	15.187	15.193	(0.964)	424335	50.0000	47.9120
57	1-Chlorohexane	91	15.660	15.667	(0.994)	718223	50.0000	46.5229(A)
* 58	Chlorobenzene-d5	117	15.759	15.765	(1.000)	1426621	50.0000	
59	Chlorobenzene	112	15.798	15.805	(1.002)	1403086	50.0000	47.5529
60	Ethylbenzene	91	15.858	15.874	(1.006)	2304731	50.0000	46.2233
61	1,1,1,2-Tetrachloroethane	131	15.897	15.903	(1.009)	517816	50.0000	48.1208
62	m,p-Xylenes	106	16.015	16.021	(1.016)	1638879	100.000	89.5763
63	o-Xylene	106	16.548	16.553	(1.050)	878523	50.0000	47.1127
64	Styrene	104	16.578	16.593	(1.052)	1418554	50.0000	45.6819
65	Bromoform	173	16.893	16.908	(1.072)	332912	50.0000	49.0464
66	Isopropylbenzene	105	16.972	16.988	(0.912)	2097743	50.0000	46.8700
67	Bromofluorobenzene	95	17.258	17.264	(0.927)	679504	50.0000	48.0612
68	1,1,2,2-Tetrachloroethane	83	17.436	17.440	(0.937)	493192	50.0000	49.9795
69	Bromobenzene	156	17.465	17.471	(0.939)	575701	50.0000	46.2764
70	Propylbenzene	91	17.475	17.481	(0.939)	2383933	50.0000	44.5662
71	1,2,3-Trichloropropane	110	17.524	17.530	(0.942)	114778	50.0000	50.4203
72	2-Chlorotoluene	91	17.653	17.658	(0.949)	1734154	50.0000	46.9010
73	1,3,5-Trimethylbenzene	105	17.672	17.688	(0.950)	1733440	50.0000	48.3720
74	4-Chlorotoluene	91	17.781	17.796	(0.955)	1586393	50.0000	47.8806
75	tert-Butylbenzene	119	18.057	18.063	(0.970)	1553519	50.0000	47.4022
76	1,2,4-Trimethylbenzene	105	18.126	18.132	(0.974)	1796036	50.0000	48.3555

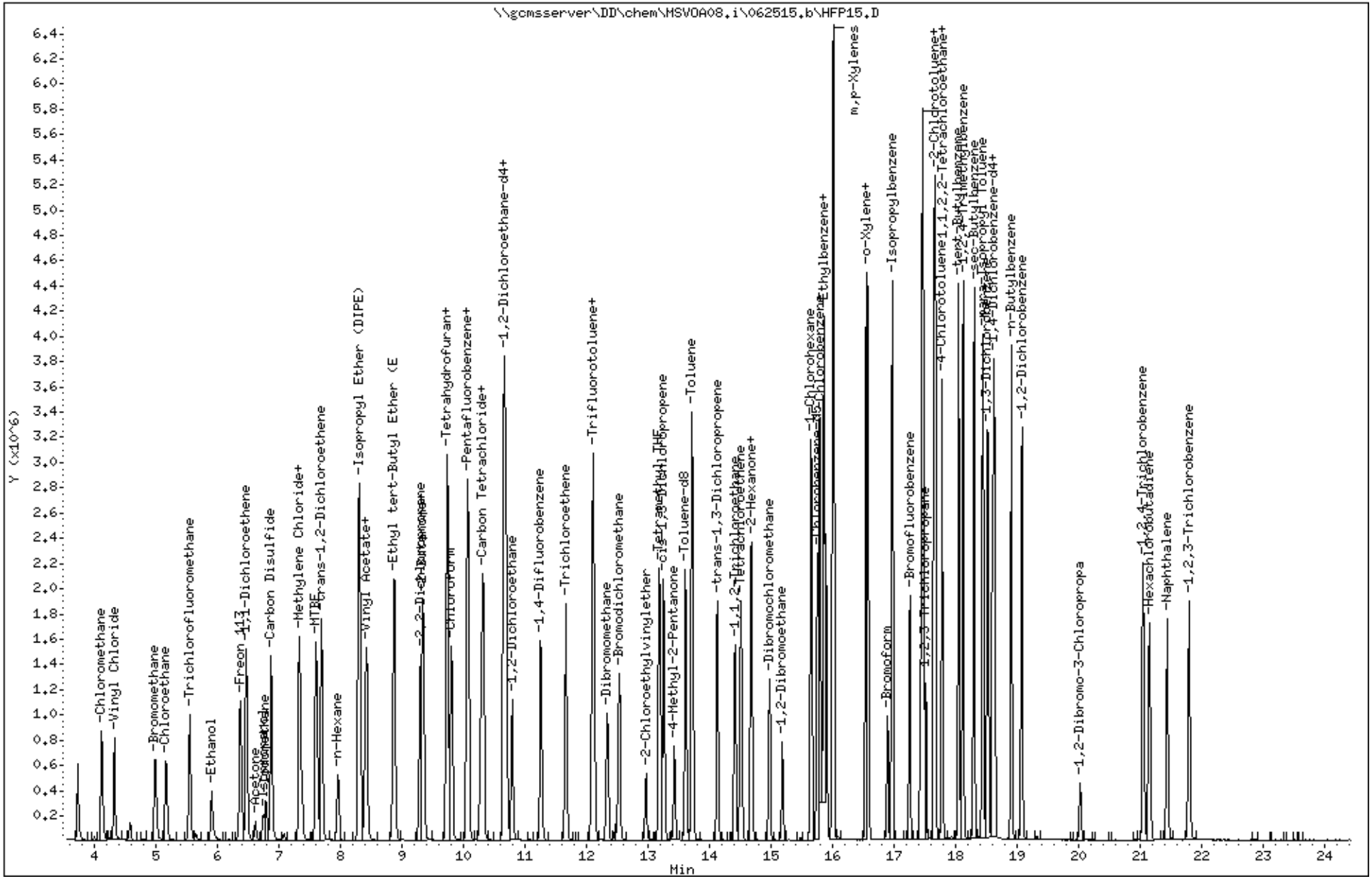
Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP14.D
Report Date: 26-Jun-2015 10:53

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.304	18.309	(0.984)	2202692	50.0000	45.6831
78 para-Isopropyl Toluene	119	18.451	18.457	(0.992)	1783980	50.0000	46.9879
79 1,3-Dichlorobenzene	146	18.530	18.536	(0.996)	1072947	50.0000	48.4736
* 80 1,4-Dichlorobenzene-d4	152	18.609	18.615	(1.000)	722873	50.0000	
81 1,4-Dichlorobenzene	146	18.639	18.644	(1.002)	1013207	50.0000	46.1796
82 n-Butylbenzene	91	18.915	18.920	(1.016)	1514611	50.0000	44.9114
83 1,2-Dichlorobenzene	146	19.083	19.088	(1.025)	983625	50.0000	46.3466
84 1,2-Dibromo-3-Chloropropane	75	20.030	20.044	(1.076)	79172	50.0000	50.0515
85 1,2,4-Trichlorobenzene	180	21.055	21.070	(1.131)	589953	50.0000	48.3804
86 Hexachlorobutadiene	225	21.154	21.168	(1.137)	289808	50.0000	49.6670
87 Naphthalene	128	21.450	21.464	(1.153)	1236309	50.0000	50.6108
88 1,2,3-Trichlorobenzene	180	21.805	21.819	(1.172)	548959	50.0000	49.8134

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP15.D
Date : 25-JUN-2015 15:57
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ICAL,S26360,.0075/100,S27172,.015/100,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP15.D
Report Date: 26-Jun-2015 10:54

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP15.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 15:57 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.0075/100,S27172,.015/100,
Misc Info : S27416,.015/100,S26220,.015/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:54 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 15:57 Cal File: HFP15.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.730	3.747	(0.371)	693154	75.0000	72.2124
2 Chloromethane	50	4.114	4.141	(0.409)	1069040	75.0000	65.4346
3 Vinyl Chloride	62	4.321	4.348	(0.430)	937605	75.0000	68.9886
4 Bromomethane	94	4.992	5.009	(0.496)	600309	75.0000	82.2002
5 Chloroethane	64	5.160	5.186	(0.513)	694549	75.0000	70.8726
6 Trichlorofluoromethane	101	5.544	5.571	(0.551)	1049566	75.0000	68.4075
7 Ethanol	45	5.909	5.926	(0.587)	670696	7500.00	7024.4763(A)
8 Freon 113	101	6.373	6.389	(0.633)	664476	75.0000	74.1501
9 1,1-Dichloroethene	96	6.472	6.488	(0.643)	683736	75.0000	71.8286
10 Acetone	43	6.619	6.645	(0.658)	248762	75.0000	68.9755
11 Isopropanol	45	6.748	6.773	(0.671)	347237	750.000	702.4361(A)
12 Iodomethane	142	6.797	6.813	(0.676)	461296	75.0000	75.7868(A)
13 Carbon Disulfide	76	6.876	6.892	(0.683)	2605714	75.0000	66.3363
14 Methylene Chloride	84	7.330	7.355	(0.728)	824199	75.0000	68.4632
15 tert-Butyl Alcohol (TBA)	59	7.369	7.404	(0.732)	444899	750.000	696.1106(A)
16 MTBE	73	7.606	7.621	(0.756)	1887807	75.0000	70.4342
17 trans-1,2-Dichloroethene	96	7.695	7.710	(0.765)	764756	75.0000	70.6453
18 n-Hexane	57	7.961	7.976	(0.791)	290290	75.0000	72.0471(A)
19 Isopropyl Ether (DIPE)	45	8.306	8.321	(0.826)	3855864	75.0000	68.2477(A)
20 Vinyl Acetate	43	8.405	8.420	(0.835)	1270128	75.0000	76.8295
21 1,1-Dichloroethane	63	8.424	8.439	(0.837)	1640696	75.0000	68.0708
22 Ethyl tert-Butyl Ether (ETBE)	59	8.868	8.893	(0.881)	2742795	75.0000	68.3262(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP15.D
Report Date: 26-Jun-2015 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.302	9.317	(0.925)	1080631	75.0000	72.0859
	24 2-Butanone	43	9.332	9.357	(0.927)	320434	75.0000	69.7901
	25 cis-1,2-Dichloroethene	96	9.342	9.366	(0.928)	839345	75.0000	69.1787
	26 Tetrahydrofuran	42	9.726	9.751	(0.967)	1679027	750.000	683.3069(A)
	27 Bromochloromethane	128	9.746	9.761	(0.969)	404762	75.0000	71.0537
	28 Chloroform	83	9.805	9.820	(0.975)	1377938	75.0000	66.8308
*	29 Pentafluorobenzene	168	10.062	10.076	(1.000)	1023083	50.0000	
	30 Dibromofluoromethane	113	10.072	10.086	(1.001)	549218	50.0000	49.4396
	31 1,1,1-Trichloroethane	97	10.072	10.096	(1.001)	1020283	75.0000	69.1260
	32 Carbon Tetrachloride	117	10.288	10.303	(0.914)	902437	75.0000	74.2192
	33 1,1-Dichloropropene	75	10.328	10.343	(0.918)	1124576	75.0000	71.5027
	34 1,2-Dichloroethane-d4	65	10.673	10.688	(0.948)	539986	50.0000	49.1212
	35 Methyl tert-Amyl Ether (TAME)	73	10.693	10.707	(0.950)	2196034	75.0000	71.7693(A)
	36 Benzene	78	10.663	10.678	(0.947)	3035353	75.0000	67.9049
	37 1,2-Dichloroethane	62	10.792	10.806	(0.959)	1075677	75.0000	71.5228
*	38 1,4-Difluorobenzene	114	11.255	11.279	(1.000)	1583532	50.0000	
	39 Trichloroethene	95	11.669	11.683	(1.037)	774412	75.0000	70.8636
	40 Trifluorotoluene	146	12.103	12.117	(1.075)	1141736	75.0000	70.8265(A)
	41 1,2-Dichloropropane	63	12.123	12.137	(1.077)	941257	75.0000	67.9081
	42 Dibromomethane	93	12.340	12.354	(1.096)	492942	75.0000	73.9732
	43 Bromodichloromethane	83	12.537	12.551	(1.114)	1111617	75.0000	72.4506
	44 2-Chloroethylvinylether	63	12.971	12.985	(1.152)	272148	75.0000	88.0860
	45 Tetramethyl THF	43	13.188	13.202	(1.172)	1889005	75.0000	67.9369(A)
	46 cis-1,3-Dichloropropene	75	13.257	13.271	(1.178)	1367859	75.0000	73.3114
	47 4-Methyl-2-Pentanone	43	13.435	13.448	(1.194)	753726	75.0000	73.6831
	48 Toluene-d8	98	13.612	13.626	(0.864)	1679950	50.0000	49.4049
	49 Toluene	92	13.721	13.734	(0.870)	1773187	75.0000	68.9913
	50 trans-1,3-Dichloropropene	75	14.135	14.148	(0.897)	1108279	75.0000	71.1397
	51 1,1,2-Trichloroethane	85	14.421	14.424	(0.915)	338076	75.0000	71.0863
	52 Tetrachloroethene	166	14.520	14.523	(0.921)	721024	75.0000	71.1290
	53 2-Hexanone	43	14.677	14.700	(0.931)	524242	75.0000	71.9183
	54 1,3-Dichloropropane	76	14.687	14.691	(0.932)	1109073	75.0000	71.0762
	55 Dibromochloromethane	129	14.983	14.986	(0.951)	795301	75.0000	72.7216
	56 1,2-Dibromoethane	107	15.190	15.193	(0.964)	635313	75.0000	73.3148
	57 1-Chlorohexane	91	15.654	15.667	(0.993)	1086976	75.0000	71.9608(A)
*	58 Chlorobenzene-d5	117	15.762	15.765	(1.000)	1395856	50.0000	
	59 Chlorobenzene	112	15.802	15.805	(1.002)	1932902	75.0000	66.9531
	60 Ethylbenzene	91	15.861	15.874	(1.006)	3117086	75.0000	63.8936
	61 1,1,1,2-Tetrachloroethane	131	15.900	15.903	(1.009)	742451	75.0000	70.5170
	62 m,p-Xylenes	106	16.019	16.021	(1.016)	2195129	150.000	122.6237
	63 o-Xylene	106	16.551	16.553	(1.050)	1276431	75.0000	69.9601
	64 Styrene	104	16.581	16.593	(1.052)	2076766	75.0000	68.3525
	65 Bromoform	173	16.897	16.908	(1.072)	487094	75.0000	73.3431
	66 Isopropylbenzene	105	16.976	16.988	(0.913)	3045055	75.0000	69.2237
	67 Bromofluorobenzene	95	17.262	17.264	(0.928)	701517	50.0000	50.4844
	68 1,1,2,2-Tetrachloroethane	83	17.429	17.440	(0.937)	711463	75.0000	73.3575
	69 Bromobenzene	156	17.469	17.471	(0.939)	861039	75.0000	70.4209
	70 Propylbenzene	91	17.479	17.481	(0.940)	3465606	75.0000	65.9185
	71 1,2,3-Trichloropropane	110	17.518	17.530	(0.942)	163014	75.0000	72.8598
	72 2-Chlorotoluene	91	17.656	17.658	(0.949)	2404145	75.0000	66.1563
	73 1,3,5-Trimethylbenzene	105	17.676	17.688	(0.950)	2385073	75.0000	67.7179
	74 4-Chlorotoluene	91	17.784	17.796	(0.956)	2144184	75.0000	65.8457
	75 tert-Butylbenzene	119	18.060	18.063	(0.971)	2234843	75.0000	69.3818
	76 1,2,4-Trimethylbenzene	105	18.130	18.132	(0.975)	2433871	75.0000	66.6722

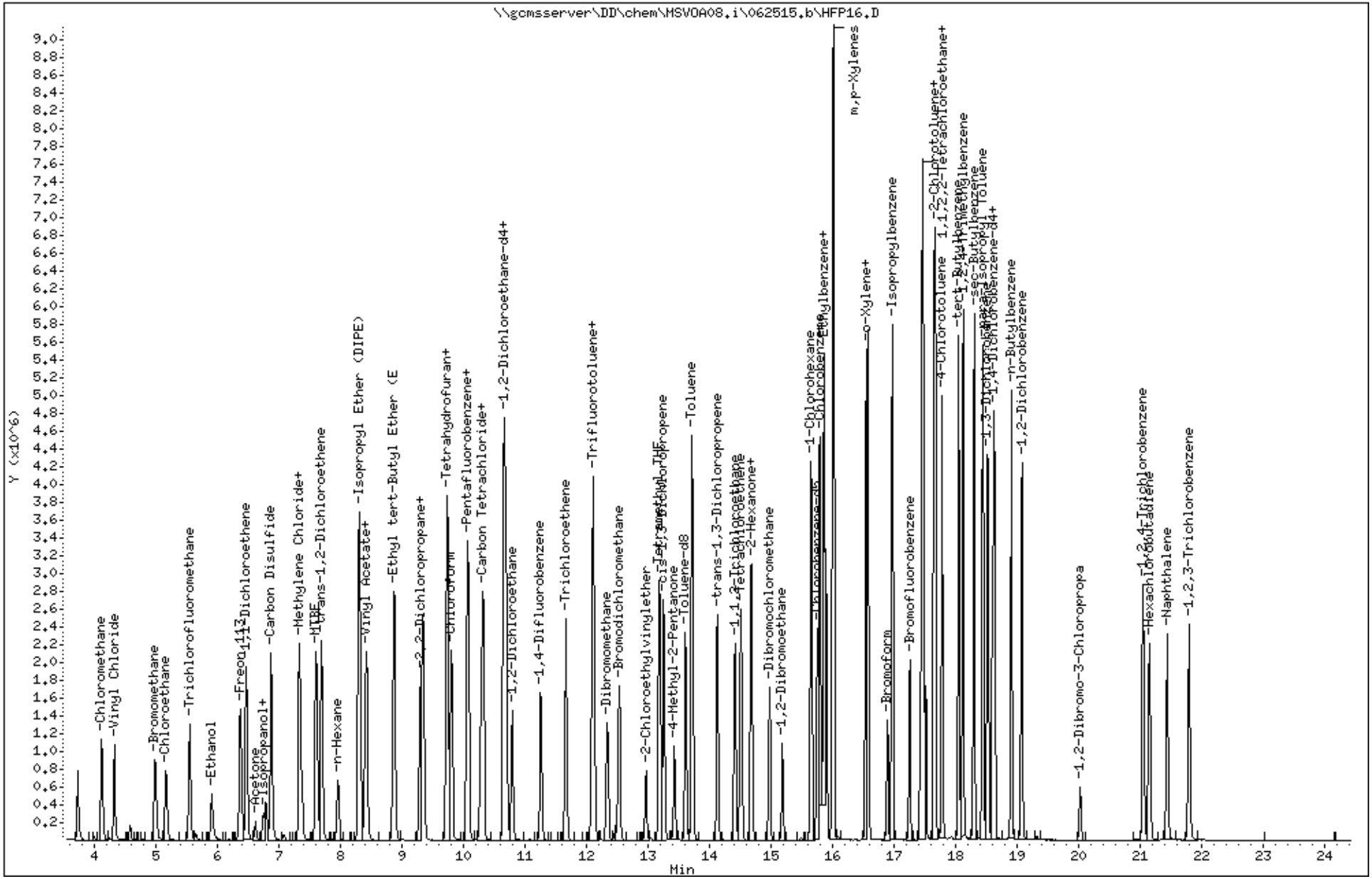
Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP15.D
Report Date: 26-Jun-2015 10:54

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.307	18.309	(0.984)	3205593	75.0000	67.6436
78 para-Isopropyl Toluene	119	18.455	18.457	(0.992)	2558212	75.0000	68.5565
79 1,3-Dichlorobenzene	146	18.534	18.536	(0.996)	1473418	75.0000	67.7282
* 80 1,4-Dichlorobenzene-d4	152	18.603	18.615	(1.000)	710470	50.0000	
81 1,4-Dichlorobenzene	146	18.633	18.644	(1.002)	1480261	75.0000	68.6446
82 n-Butylbenzene	91	18.919	18.920	(1.017)	2301506	75.0000	69.4359
83 1,2-Dichlorobenzene	146	19.086	19.088	(1.026)	1476581	75.0000	70.7884
84 1,2-Dibromo-3-Chloropropane	75	20.033	20.044	(1.077)	122658	75.0000	78.8965
85 1,2,4-Trichlorobenzene	180	21.059	21.070	(1.132)	906542	75.0000	75.6409
86 Hexachlorobutadiene	225	21.157	21.168	(1.137)	444943	75.0000	77.5851
87 Naphthalene	128	21.453	21.464	(1.153)	1845091	75.0000	76.8511
88 1,2,3-Trichlorobenzene	180	21.808	21.819	(1.172)	843155	75.0000	77.8449

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP16.D
Date : 25-JUN-2015 16:31
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ICAL,S26360,.01/100,S27172,.02/100,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP16.D
Report Date: 26-Jun-2015 10:54

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP16.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 16:31 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICAL,S26360,.01/100,S27172,.02/100,
Misc Info : S27416,.02/100,S26220,.02/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:54 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 8 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.730	3.747	(0.371)	915441	100.000	92.4366
2 Chloromethane	50	4.115	4.141	(0.409)	1418574	100.000	84.1583
3 Vinyl Chloride	62	4.322	4.348	(0.430)	1257992	100.000	89.7153
4 Bromomethane	94	4.983	5.009	(0.495)	826283	100.000	109.6625
5 Chloroethane	64	5.160	5.186	(0.513)	868709	100.000	85.9174
6 Trichlorofluoromethane	101	5.545	5.571	(0.551)	1407266	100.000	88.9000
7 Ethanol	45	5.910	5.926	(0.587)	954864	10000.0	9693.0620(A)
8 Freon 113	101	6.373	6.389	(0.633)	897232	100.000	97.0439
9 1,1-Dichloroethene	96	6.472	6.488	(0.643)	899740	100.000	91.6130
10 Acetone	43	6.620	6.645	(0.658)	348957	100.000	93.7808
11 Isopropanol	45	6.748	6.773	(0.671)	493556	1000.00	967.7174(A)
12 Iodomethane	142	6.797	6.813	(0.676)	642089	100.000	99.6440(A)
13 Carbon Disulfide	76	6.876	6.892	(0.683)	3665027	100.000	90.4342
14 Methylene Chloride	84	7.330	7.355	(0.728)	1136856	100.000	91.5296
15 tert-Butyl Alcohol (TBA)	59	7.370	7.404	(0.732)	659645	1000.00	1000.3646(A)
16 MTBE	73	7.606	7.621	(0.756)	2629195	100.000	95.0780
17 trans-1,2-Dichloroethene	96	7.695	7.710	(0.765)	990035	100.000	88.6425
18 n-Hexane	57	7.961	7.976	(0.791)	381952	100.000	91.8808(A)
19 Isopropyl Ether (DIPE)	45	8.307	8.321	(0.826)	5005191	100.000	85.8655(A)
20 Vinyl Acetate	43	8.405	8.420	(0.835)	1796810	100.000	105.3451
21 1,1-Dichloroethane	63	8.425	8.439	(0.837)	2250292	100.000	90.4905
22 Ethyl tert-Butyl Ether (ETBE)	59	8.869	8.893	(0.881)	3675640	100.000	88.7479(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP16.D
Report Date: 26-Jun-2015 10:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	9.303	9.317	(0.925)	1379665	100.000	89.2027
	24 2-Butanone	43	9.332	9.357	(0.927)	428063	100.000	90.3638
	25 cis-1,2-Dichloroethene	96	9.342	9.366	(0.928)	1127388	100.000	90.0609
	26 Tetrahydrofuran	42	9.727	9.751	(0.967)	2210331	1000.00	871.8598(A)
	27 Bromochloromethane	128	9.746	9.761	(0.969)	536823	100.000	91.3376
	28 Chloroform	83	9.806	9.820	(0.975)	1932942	100.000	90.8651
*	29 Pentafluorobenzene	168	10.062	10.076	(1.000)	1055552	50.0000	
	30 Dibromofluoromethane	113	10.072	10.086	(1.001)	570196	50.0000	49.7492
	31 1,1,1-Trichloroethane	97	10.072	10.096	(1.001)	1400588	100.000	91.9735
	32 Carbon Tetrachloride	117	10.289	10.303	(0.914)	1211494	100.000	96.3470
	33 1,1-Dichloropropene	75	10.328	10.343	(0.918)	1481247	100.000	91.0708
	34 1,2-Dichloroethane-d4	65	10.674	10.688	(0.948)	531363	50.0000	46.7407
	35 Methyl tert-Amyl Ether (TAME)	73	10.693	10.707	(0.950)	2776596	100.000	87.7466(A)
	36 Benzene	78	10.664	10.678	(0.947)	3957321	100.000	85.6073
	37 1,2-Dichloroethane	62	10.792	10.806	(0.959)	1454886	100.000	93.5426
*	38 1,4-Difluorobenzene	114	11.256	11.279	(1.000)	1637605	50.0000	
	39 Trichloroethene	95	11.670	11.683	(1.037)	1026399	100.000	90.8208
	40 Trifluorotoluene	146	12.104	12.117	(1.075)	1533740	100.000	92.0025(A)
	41 1,2-Dichloropropane	63	12.123	12.137	(1.077)	1213389	100.000	84.6508
	42 Dibromomethane	93	12.340	12.354	(1.096)	657205	100.000	95.3668
	43 Bromodichloromethane	83	12.538	12.551	(1.114)	1490011	100.000	93.9061
	44 2-Chloroethylvinylether	63	12.972	12.985	(1.152)	397641	100.000	124.4546
	45 Tetramethyl THF	43	13.189	13.202	(1.172)	2513048	100.000	87.3960(A)
	46 cis-1,3-Dichloropropene	75	13.258	13.271	(1.178)	1784285	100.000	92.4724
	47 4-Methyl-2-Pentanone	43	13.435	13.448	(1.194)	1030979	100.000	97.4590
	48 Toluene-d8	98	13.613	13.626	(0.864)	1793009	50.0000	50.3180
	49 Toluene	92	13.721	13.734	(0.870)	2400933	100.000	89.1429
	50 trans-1,3-Dichloropropene	75	14.135	14.148	(0.897)	1503391	100.000	92.0877
	51 1,1,2-Trichloroethane	85	14.422	14.424	(0.915)	476546	100.000	95.6188
	52 Tetrachloroethene	166	14.520	14.523	(0.921)	997918	100.000	93.9417
	53 2-Hexanone	43	14.678	14.700	(0.931)	693225	100.000	90.7504
	54 1,3-Dichloropropane	76	14.688	14.691	(0.932)	1480185	100.000	90.5204
	55 Dibromochloromethane	129	14.984	14.986	(0.951)	1064964	100.000	92.9252
	56 1,2-Dibromoethane	107	15.191	15.193	(0.964)	871268	100.000	95.9450
	57 1-Chlorohexane	91	15.654	15.667	(0.993)	1474009	100.000	93.1200(A)
*	58 Chlorobenzene-d5	117	15.763	15.765	(1.000)	1462763	50.0000	
	59 Chlorobenzene	112	15.802	15.805	(1.002)	2610762	100.000	86.2968
	60 Ethylbenzene	91	15.861	15.874	(1.006)	4162709	100.000	81.4238
	61 1,1,1,2-Tetrachloroethane	131	15.901	15.903	(1.009)	1008369	100.000	91.3928
	62 m,p-Xylenes	106	16.019	16.021	(1.016)	3155269	200.000	168.1967
	63 o-Xylene	106	16.552	16.553	(1.050)	1597486	100.000	83.5520
	64 Styrene	104	16.581	16.593	(1.052)	2715550	100.000	85.2886
	65 Bromoform	173	16.897	16.908	(1.072)	678294	100.000	97.4610
	66 Isopropylbenzene	105	16.976	16.988	(0.913)	3989313	100.000	88.2219
	67 Bromofluorobenzene	95	17.262	17.264	(0.928)	739432	50.0000	51.7650
	68 1,1,2,2-Tetrachloroethane	83	17.430	17.440	(0.937)	947136	100.000	94.9999
	69 Bromobenzene	156	17.469	17.471	(0.939)	1157026	100.000	92.0536
	70 Propylbenzene	91	17.479	17.481	(0.940)	4583566	100.000	84.8107
	71 1,2,3-Trichloropropane	110	17.518	17.530	(0.942)	230873	100.000	100.3819
	72 2-Chlorotoluene	91	17.657	17.658	(0.949)	3205799	100.000	85.8155
	73 1,3,5-Trimethylbenzene	105	17.676	17.688	(0.950)	3127758	100.000	86.3881
	74 4-Chlorotoluene	91	17.785	17.796	(0.956)	2948275	100.000	88.0749
	75 tert-Butylbenzene	119	18.061	18.063	(0.971)	2902211	100.000	87.6489
	76 1,2,4-Trimethylbenzene	105	18.130	18.132	(0.975)	3275900	100.000	87.2964

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP16.D
Report Date: 26-Jun-2015 10:54

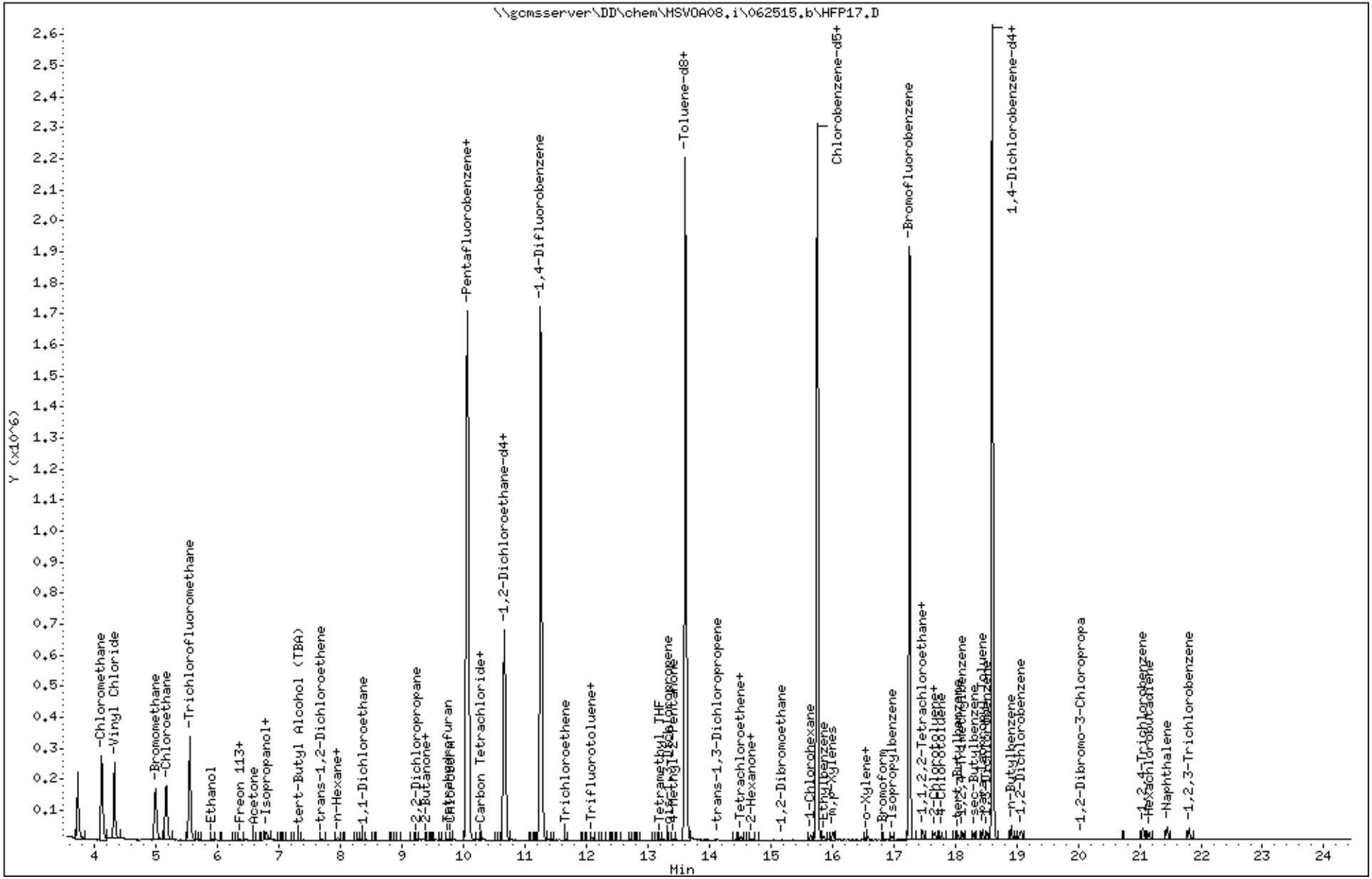
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77 sec-Butylbenzene	105	18.307	18.309	(0.984)	4259706	100.000	87.4413
78 para-Isopropyl Toluene	119	18.455	18.457	(0.992)	3396150	100.000	88.5357
79 1,3-Dichlorobenzene	146	18.534	18.536	(0.996)	1947096	100.000	87.0663
* 80 1,4-Dichlorobenzene-d4	152	18.603	18.615	(1.000)	730343	50.0000	
81 1,4-Dichlorobenzene	146	18.633	18.644	(1.002)	1952044	100.000	88.0596
82 n-Butylbenzene	91	18.919	18.920	(1.017)	2896606	100.000	85.0121
83 1,2-Dichlorobenzene	146	19.087	19.088	(1.026)	1915854	100.000	89.3482
84 1,2-Dibromo-3-Chloropropane	75	20.033	20.044	(1.077)	162395	100.000	101.6140
85 1,2,4-Trichlorobenzene	180	21.059	21.070	(1.132)	1181502	100.000	95.9008
86 Hexachlorobutadiene	225	21.158	21.168	(1.137)	587811	100.000	99.7082
87 Naphthalene	128	21.454	21.464	(1.153)	2460229	100.000	99.6843
88 1,2,3-Trichlorobenzene	180	21.809	21.819	(1.172)	1081018	100.000	97.0900

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP17.D
Date : 25-JUN-2015 17:05
Client ID: DYNA P&T
Sample Info: ICV,S26064,.01/100
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP17.D
Report Date: 26-Jun-2015 10:55

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP17.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 17:05 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICV,S26064,.01/100
Misc Info :
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:54 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 17
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.732	3.747	(0.371)	248683	25.3829	25.3829
2 Chloromethane	50	4.116	4.141	(0.409)	325760	19.5355	19.5354
3 Vinyl Chloride	62	4.323	4.348	(0.430)	279921	20.1793	20.1792
4 Bromomethane	94	4.994	5.009	(0.496)	145660	19.5412	19.5412
5 Chloroethane	64	5.172	5.186	(0.514)	184218	18.4171	18.4170
6 Trichlorofluoromethane	101	5.556	5.571	(0.552)	323468	20.6556	20.6556
7 Ethanol	45	5.931	5.926	(0.589)	5605	57.5144	57.5143(A)
8 Freon 113	101	6.385	6.389	(0.634)	860	0.09403	0.0940(a)
9 1,1-Dichloroethene	96	6.464	6.488	(0.642)	1265	0.13020	0.1302(a)
10 Acetone	43	6.631	6.645	(0.659)	1480	0.40205	0.4020(a)
11 Isopropanol	45	6.759	6.773	(0.672)	2666	5.28389	5.2838(A)
12 Iodomethane	142	6.799	6.813	(0.676)	45032	10.2274	10.2274(A)
13 Carbon Disulfide	76	6.868	6.892	(0.682)	5924	0.14776	0.1477(a)
15 tert-Butyl Alcohol (TBA)	59	7.401	7.404	(0.735)	1902	2.91568	2.9156(A)
17 trans-1,2-Dichloroethene	96	7.696	7.710	(0.765)	1641	0.14852	0.1485(a)
18 n-Hexane	57	7.963	7.976	(0.791)	3993	0.97095	0.9709(A)
20 Vinyl Acetate	43	7.963	8.420	(0.791)	3729	0.22100	0.2209(a)
21 1,1-Dichloroethane	63	8.426	8.439	(0.837)	1405	0.05711	0.0571(a)
23 2,2-Dichloropropane	77	9.284	9.317	(0.923)	1094	0.07150	0.0714(a)
24 2-Butanone	43	9.334	9.357	(0.927)	1737	0.37065	0.3706(a)
25 cis-1,2-Dichloroethene	96	9.353	9.366	(0.929)	779	0.06290	0.0629(a)
26 Tetrahydrofuran	42	9.758	9.751	(0.970)	4471	1.78269	1.7826(A)

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP17.D
Report Date: 26-Jun-2015 10:55

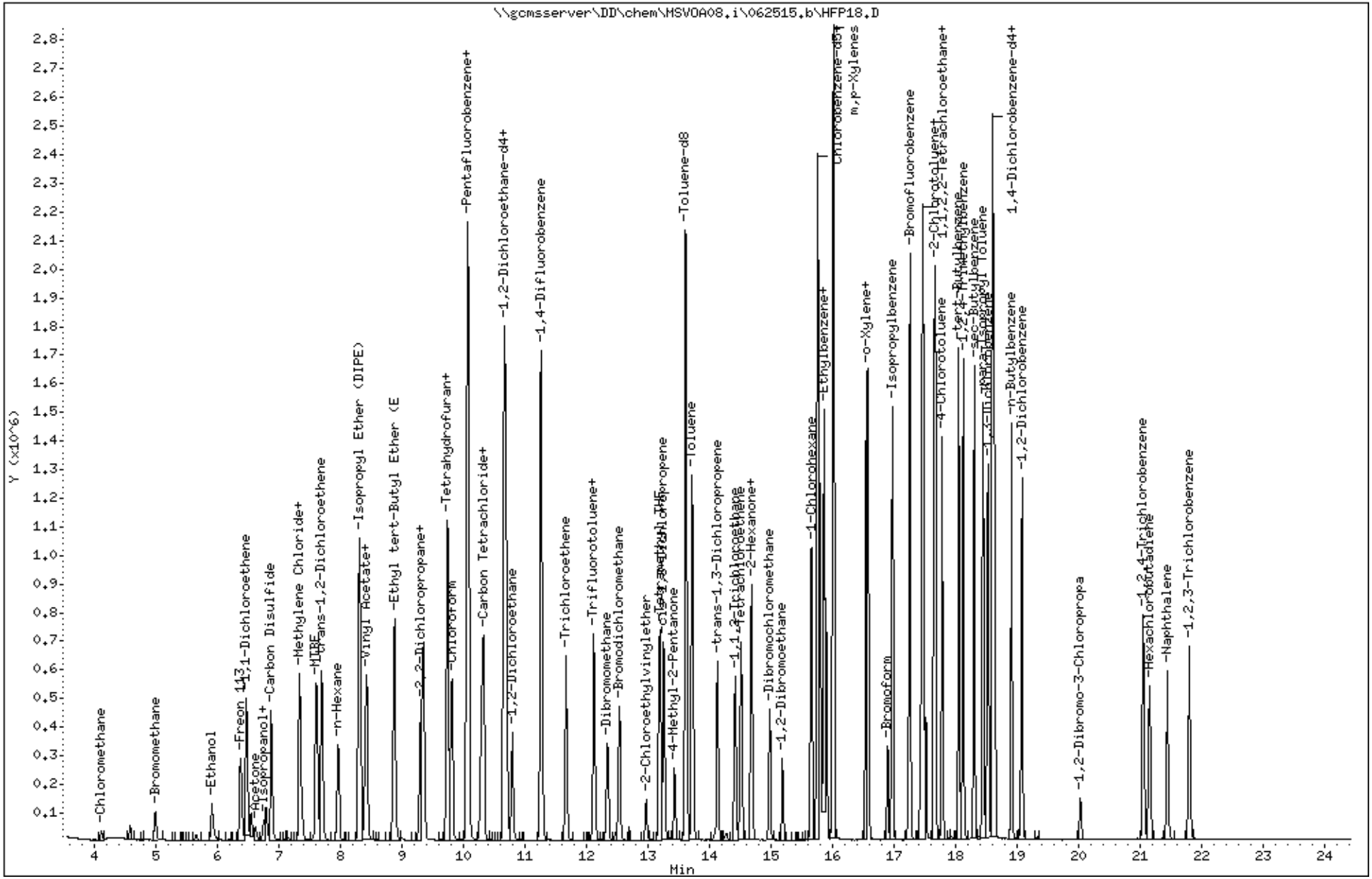
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	28 Chloroform	83	9.807	9.820	(0.975)	1279	0.06078	0.0607(a)
*	29 Pentafluorobenzene	168	10.064	10.076	(1.000)	1044235	50.0000	
	30 Dibromofluoromethane	113	10.073	10.086	(1.001)	569614	50.2370	50.2370
	32 Carbon Tetrachloride	117	10.290	10.303	(0.914)	1249	0.09697	0.0969(a)
	33 1,1-Dichloropropene	75	10.320	10.343	(0.917)	3102	0.18619	0.1861(a)
	34 1,2-Dichloroethane-d4	65	10.665	10.688	(0.947)	579245	49.7437	49.7436
	36 Benzene	78	10.655	10.678	(0.947)	3905	0.08247	0.0824(a)
*	38 1,4-Difluorobenzene	114	11.257	11.279	(1.000)	1677405	50.0000	
	39 Trichloroethene	95	11.671	11.683	(1.037)	1966	0.16983	0.1698(a)
	40 Trifluorotoluene	146	12.105	12.117	(1.075)	4764	0.27899	0.2789(aA)
	41 1,2-Dichloropropane	63	12.125	12.137	(1.077)	916	0.06239	0.0623(a)
	45 Tetramethyl THF	43	13.200	13.202	(1.173)	1819	0.06176	0.0617(aA)
	46 cis-1,3-Dichloropropene	75	13.269	13.271	(1.179)	1320	0.06679	0.0667(a)
	47 4-Methyl-2-Pentanone	43	13.437	13.448	(1.194)	2984	0.27539	0.2753(a)
	48 Toluene-d8	98	13.614	13.626	(0.864)	1704032	50.4337	50.4337
	49 Toluene	92	13.723	13.734	(0.871)	3289	0.12879	0.1287(a)
	50 trans-1,3-Dichloropropene	75	14.137	14.148	(0.897)	1203	0.07771	0.0777(a)
	52 Tetrachloroethene	166	14.522	14.523	(0.922)	3410	0.33855	0.3385(a)
	53 2-Hexanone	43	14.689	14.700	(0.932)	4984	0.68811	0.6881
	54 1,3-Dichloropropane	76	14.689	14.691	(0.932)	1203	0.07759	0.0775(a)
	55 Dibromochloromethane	129	14.512	14.986	(0.921)	2811	0.25868	0.2586(a)
	56 1,2-Dibromoethane	107	15.182	15.193	(0.964)	779	0.09047	0.0904(a)
	57 1-Chlorohexane	91	15.656	15.667	(0.994)	5691	0.37917	0.3791(aA)
*	58 Chlorobenzene-d5	117	15.754	15.765	(1.000)	1386984	50.0000	
	59 Chlorobenzene	112	15.794	15.805	(1.002)	4591	0.16004	0.1600(a)
	60 Ethylbenzene	91	15.863	15.874	(1.007)	9036	0.18640	0.1864(a)
	62 m,p-Xylenes	106	16.021	16.021	(1.017)	8253	0.46398	0.4639(a)
	63 o-Xylene	106	16.553	16.553	(1.051)	2476	0.13658	0.1365(a)
	64 Styrene	104	16.583	16.593	(1.053)	6427	0.21288	0.2128(a)
	65 Bromoform	173	16.899	16.908	(1.073)	700	0.10608	0.1060(a)
	66 Isopropylbenzene	105	16.977	16.988	(0.913)	10466	0.22782	0.2278(a)
	67 Bromofluorobenzene	95	17.254	17.264	(0.927)	722270	49.7701	49.7700
	68 1,1,2,2-Tetrachloroethane	83	17.431	17.440	(0.937)	1408	0.13901	0.1390(a)
	69 Bromobenzene	156	17.461	17.471	(0.939)	2621	0.20526	0.2052(a)
	70 Propylbenzene	91	17.480	17.481	(0.940)	19531	0.35572	0.3557(a)
	71 1,2,3-Trichloropropane	110	17.510	17.530	(0.941)	345	0.14765	0.1476(a)
	72 2-Chlorotoluene	91	17.648	17.658	(0.949)	9520	0.25084	0.2508(a)
	73 1,3,5-Trimethylbenzene	105	17.678	17.688	(0.950)	10555	0.28695	0.2869(a)
	74 4-Chlorotoluene	91	17.786	17.796	(0.956)	13843	0.40705	0.4070(a)
	75 tert-Butylbenzene	119	18.053	18.063	(0.970)	8637	0.25675	0.2567(a)
	76 1,2,4-Trimethylbenzene	105	18.122	18.132	(0.974)	12525	0.32853	0.3285(a)
	77 sec-Butylbenzene	105	18.309	18.309	(0.984)	17360	0.35077	0.3507(a)
	78 para-Isopropyl Toluene	119	18.447	18.457	(0.992)	17998	0.46183	0.4618(a)
	79 1,3-Dichlorobenzene	146	18.536	18.536	(0.996)	9948	0.43785	0.4378(a)
*	80 1,4-Dichlorobenzene-d4	152	18.605	18.615	(1.000)	741987	50.0000	
	81 1,4-Dichlorobenzene	146	18.634	18.644	(1.002)	11994	0.53258	0.5325
	82 n-Butylbenzene	91	18.911	18.920	(1.016)	27254	0.78732	0.7873
	83 1,2-Dichlorobenzene	146	19.088	19.088	(1.026)	9453	0.43393	0.4339(a)
	84 1,2-Dibromo-3-Chloropropane	75	20.045	20.044	(1.077)	666	0.41019	0.4101(a)
	85 1,2,4-Trichlorobenzene	180	21.061	21.070	(1.132)	14423	1.15232	1.1523
	86 Hexachlorobutadiene	225	21.159	21.168	(1.137)	5439	0.90812	0.9081
	87 Naphthalene	128	21.455	21.464	(1.153)	47376	1.88947	1.8894
	88 1,2,3-Trichlorobenzene	180	21.800	21.819	(1.172)	16253	1.43683	1.4368

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP17.D
Report Date: 26-Jun-2015 10:55

QC Flag Legend

a - Target compound detected but, quantitated amount
    Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount
    exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP18.D
Date : 25-JUN-2015 17:39
Client ID: DYNA P&T
Instrument: MSVOA08.i
Sample Info: ICV,S27331,.01/100,S27404,.01/100,
Purge Volume: 5.0
Operator: VOC
Column phase: RTX 624
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP18.D
Report Date: 26-Jun-2015 10:56

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP18.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 25-JUN-2015 17:39 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ICV,S27331,.01/100,S27404,.01/100,
Misc Info : S27533,.01/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA08.i\062515.b\826GOX8.m
Meth Date : 26-Jun-2015 10:54 msvoa Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 18
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.727	3.747	(0.371)	897	0.09073	0.0907(a)
2 Chloromethane	50	4.112	4.141	(0.409)	29491	1.75251	1.7525
4 Bromomethane	94	4.990	5.009	(0.496)	78615	10.4511	10.4510
7 Ethanol	45	5.907	5.926	(0.587)	229158	2330.13	2330.1339(A)
8 Freon 113	101	6.371	6.389	(0.633)	176224	19.0922	19.0921
9 1,1-Dichloroethene	96	6.469	6.488	(0.643)	209579	21.3754	21.3754
10 Acetone	43	6.617	6.645	(0.658)	74298	20.0007	20.0007
11 Isopropanol	45	6.755	6.773	(0.672)	112451	220.852	220.8522(A)
12 Iodomethane	142	6.795	6.813	(0.675)	154250	27.3408	27.3408(A)
13 Carbon Disulfide	76	6.874	6.892	(0.683)	759280	18.7665	18.7665
14 Methylene Chloride	84	7.337	7.355	(0.729)	289006	23.3072	23.3071
15 tert-Butyl Alcohol (TBA)	59	7.377	7.404	(0.733)	78607	119.409	119.4086(A)
16 MTBE	73	7.604	7.621	(0.756)	682327	24.7159	24.7158
17 trans-1,2-Dichloroethene	96	7.692	7.710	(0.765)	251692	22.5729	22.5729
18 n-Hexane	57	7.959	7.976	(0.791)	186328	44.8973	44.8973(A)
19 Isopropyl Ether (DIPE)	45	8.304	8.321	(0.825)	1389565	23.8783	23.8783(A)
20 Vinyl Acetate	43	8.402	8.420	(0.835)	552487	32.4460	32.4459
21 1,1-Dichloroethane	63	8.432	8.439	(0.838)	564900	22.7542	22.7542
22 Ethyl tert-Butyl Ether (ETBE)	59	8.876	8.893	(0.882)	988610	23.9098	23.9098(A)
23 2,2-Dichloropropane	77	9.300	9.317	(0.925)	348957	22.5997	22.5997
24 2-Butanone	43	9.339	9.357	(0.928)	113414	23.9817	23.9816
25 cis-1,2-Dichloroethene	96	9.349	9.366	(0.929)	303643	24.2970	24.2970

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP18.D
Report Date: 26-Jun-2015 10:56

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	26 Tetrahydrofuran	42	9.734	9.751	(0.968)	615761	243.292	243.2920(A)
	27 Bromochloromethane	128	9.744	9.761	(0.969)	143264	24.4164	24.4164
	28 Chloroform	83	9.803	9.820	(0.975)	507976	23.9193	23.9192
*	29 Pentafluorobenzene	168	10.059	10.076	(1.000)	1053788	50.0000	
	30 Dibromofluoromethane	113	10.079	10.086	(1.002)	572461	50.0304	50.0304
	31 1,1,1-Trichloroethane	97	10.079	10.096	(1.002)	365154	24.0190	24.0189
	32 Carbon Tetrachloride	117	10.286	10.303	(0.913)	311514	24.0752	24.0751
	33 1,1-Dichloropropene	75	10.326	10.343	(0.917)	380566	22.7382	22.7382
	34 1,2-Dichloroethane-d4	65	10.671	10.688	(0.947)	571458	48.8499	48.8498
	35 Methyl tert-Amyl Ether (TAME)	73	10.700	10.707	(0.950)	762369	23.4130	23.4130(A)
	36 Benzene	78	10.661	10.678	(0.947)	1111073	23.3575	23.3575
	37 1,2-Dichloroethane	62	10.799	10.806	(0.959)	372180	23.2546	23.2545
*	38 1,4-Difluorobenzene	114	11.263	11.279	(1.000)	1685135	50.0000	
	39 Trichloroethene	95	11.667	11.683	(1.036)	263993	22.7005	22.7005
	40 Trifluorotoluene	146	12.101	12.117	(1.074)	1973	0.11501	0.1150(aA)
	41 1,2-Dichloropropane	63	12.121	12.137	(1.076)	324717	22.0146	22.0146
	42 Dibromomethane	93	12.338	12.354	(1.095)	167665	23.6436	23.6435
	43 Bromodichloromethane	83	12.535	12.551	(1.113)	371905	22.7778	22.7777
	44 2-Chloroethylvinylether	63	12.969	12.985	(1.151)	76754	23.3451	23.3450
	45 Tetramethyl THF	43	13.196	13.202	(1.172)	645850	21.8271	21.8271(A)
	46 cis-1,3-Dichloropropene	75	13.255	13.271	(1.177)	465033	23.4211	23.4210
	47 4-Methyl-2-Pentanone	43	13.432	13.448	(1.193)	252090	23.1581	23.1580
	48 Toluene-d8	98	13.620	13.626	(0.864)	1694509	49.1241	49.1240
	49 Toluene	92	13.719	13.734	(0.870)	633527	24.2986	24.2986
	50 trans-1,3-Dichloropropene	75	14.133	14.148	(0.897)	349229	22.0978	22.0978
	51 1,1,2-Trichloroethane	85	14.419	14.424	(0.915)	120287	24.9326	24.9325
	52 Tetrachloroethene	166	14.517	14.523	(0.921)	248345	24.1506	24.1506
	53 2-Hexanone	43	14.685	14.700	(0.932)	187521	25.3591	25.3591
	54 1,3-Dichloropropane	76	14.685	14.691	(0.932)	395056	24.9574	24.9573
	55 Dibromochloromethane	129	14.981	14.986	(0.951)	271555	24.4775	24.4774
	56 1,2-Dibromoethane	107	15.188	15.193	(0.964)	216870	24.6706	24.6706
	57 1-Chlorohexane	91	15.662	15.667	(0.994)	358893	23.4216	23.4216(A)
*	58 Chlorobenzene-d5	117	15.760	15.765	(1.000)	1416004	50.0000	
	59 Chlorobenzene	112	15.800	15.805	(1.002)	676866	23.1121	23.1121
	60 Ethylbenzene	91	15.859	15.874	(1.006)	1175742	23.7573	23.7573
	61 1,1,1,2-Tetrachloroethane	131	15.898	15.903	(1.009)	254740	23.8506	23.8506
	62 m,p-Xylenes	106	16.017	16.021	(1.016)	879813	48.4486	48.4485
	63 o-Xylene	106	16.549	16.553	(1.050)	457558	24.7215	24.7215
	64 Styrene	104	16.579	16.593	(1.052)	774082	25.1148	25.1148
	65 Bromoform	173	16.894	16.908	(1.072)	167815	24.9088	24.9088
	66 Isopropylbenzene	105	16.973	16.988	(0.912)	1080742	24.3783	24.3783
	67 Bromofluorobenzene	95	17.259	17.264	(0.927)	704136	50.2804	50.2803
	68 1,1,2,2-Tetrachloroethane	83	17.437	17.440	(0.937)	261664	26.7706	26.7706
	69 Bromobenzene	156	17.466	17.471	(0.939)	316871	25.7148	25.7148
	70 Propylbenzene	91	17.476	17.481	(0.939)	1323808	24.9848	24.9848
	71 1,2,3-Trichloropropane	110	17.526	17.530	(0.942)	58133	25.7815	25.7815
	72 2-Chlorotoluene	91	17.654	17.658	(0.949)	891692	24.3471	24.3471
	73 1,3,5-Trimethylbenzene	105	17.674	17.688	(0.950)	903415	25.4514	25.4513
	74 4-Chlorotoluene	91	17.782	17.796	(0.955)	852405	25.9737	25.9737
	75 tert-Butylbenzene	119	18.058	18.063	(0.970)	815634	25.1256	25.1256
	76 1,2,4-Trimethylbenzene	105	18.127	18.132	(0.974)	891295	24.2265	24.2265
	77 sec-Butylbenzene	105	18.305	18.309	(0.984)	1177420	24.6531	24.6531
	78 para-Isopropyl Toluene	119	18.453	18.457	(0.992)	943118	25.0785	25.0784
	79 1,3-Dichlorobenzene	146	18.532	18.536	(0.996)	559403	25.5147	25.5147

Data File: \\gcmsserver\DD\chem\MSVOA08.i\062515.b\HFP18.D
Report Date: 26-Jun-2015 10:56

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
* 80 1,4-Dichlorobenzene-d4	152	18.611	18.615	(1.000)	716017	50.0000	
81 1,4-Dichlorobenzene	146	18.630	18.644	(1.001)	542070	24.9429	24.9428
82 n-Butylbenzene	91	18.916	18.920	(1.016)	824549	24.6838	24.6837
83 1,2-Dichlorobenzene	146	19.084	19.088	(1.025)	544646	25.9085	25.9084
84 1,2-Dibromo-3-Chloropropane	75	20.031	20.044	(1.076)	39175	25.0031	25.0030
85 1,2,4-Trichlorobenzene	180	21.057	21.070	(1.131)	304284	25.1925	25.1924
86 Hexachlorobutadiene	225	21.165	21.168	(1.137)	142514	24.6578	24.6577
87 Naphthalene	128	21.451	21.464	(1.153)	598205	24.7232	24.7232
88 1,2,3-Trichlorobenzene	180	21.806	21.819	(1.172)	291391	26.6945	26.6944

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 MSVOA Water: EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Date : 07-JUL-2015 13:45 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	ig707	485271359007	.25/.5PPB	07-JUL-2015 13:45	S26360 (2000000X), S27559 (2000000X), S27416 (2000000X), S26220 (1000000X), S27403 (5000X)
L2	ig708	485271359008	.5/1PPB	07-JUL-2015 14:19	S27403 (5000X), S26360 (1000000X), S27559 (1000000X), S27416 (1000000X), S26220 (500000X)
L3	ig709	485271359009	2PPB	07-JUL-2015 14:54	S26360 (500000X), S27559 (250000X), S27416 (250000X), S26220 (250000X), S27403 (5000X)
L4	ig710	485271359010	5PPB	07-JUL-2015 15:28	S27403 (5000X), S26360 (200000X), S27559 (100000X), S27416 (100000X), S26220 (100000X)
L5	ig711	485271359011	10PPB	07-JUL-2015 16:03	S27403 (5000X), S26360 (100000X), S27559 (50000X), S27416 (50000X), S26220 (50000X)
L6	ig712	485271359012	20PPB	07-JUL-2015 16:37	S27403 (5000X), S26360 (50000X), S27559 (25000X), S27416 (25000X), S26220 (25000X)
L7	ig713	485271359013	50PPB	07-JUL-2015 17:12	S27403 (5000X), S26360 (20000X), S27559 (10000X), S27416 (10000X), S26220 (10000X)
L8	ig714	485271359014	75PPB	07-JUL-2015 17:46	S27403 (5000X), S26360 (13330X), S27559 (6667X), S27416 (6667X), S26220 (6667X)
L9	ig715	485271359015	100PPB	07-JUL-2015 18:21	S27403 (5000X), S26360 (10000X), S27559 (5000X), S27416 (5000X), S26220 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.8295	0.7813	0.8144	0.6552	0.7846	0.6493	0.6678	0.6451	AVRG		1.37286		0.7284	11	15	0.100	0.99	
Chloromethane	1.4221	1.2354	1.2133	1.1468	1.1031	1.0288	0.8902	0.8250		QUAD	-0.1818	0.87534	0.005523	1.1081	1.000	15	0.100	0.99	
Vinyl Chloride	0.9594	0.8834	0.9021	0.8573	0.8247	0.8347	0.7011	0.6584	0.6550	AVRG		1.23693		0.8085	14	15	0.100	0.99	
Bromomethane	0.3703	0.3463	0.3273	0.3389	0.3913	0.4129	0.4326	0.4392	0.4531	AVRG		2.56273		0.3902	12	15	0.100	0.99	
Chloroethane		0.5011	0.5101	0.4605	0.4740	0.4547	0.4197	0.4025	0.4115	AVRG		2.20135		0.4543	9	15	0.100	0.99	
Trichlorofluoromethane		0.9266	0.8918	0.8934	0.7925	0.8509	0.7560	0.7660	0.7547	AVRG		1.20628		0.8290	8	15	0.100	0.99	
Acetone					0.1253	0.1173	0.1009	0.0988	0.0912	AVRG		9.37147		0.1067	13	15	0.100	0.99	
Freon 113		0.4516	0.4408	0.3838	0.3133	0.3629	0.3697	0.3676	0.3779	AVRG		2.60781		0.3835	12	15	0.100	0.99	
1,1-Dichloroethene		0.4474	0.4412	0.3831	0.3641	0.3812	0.3783	0.3744	0.3850	AVRG		2.53584		0.3943	8	15	0.100	0.99	
Methylene Chloride		0.5494	0.5419	0.5096	0.5224	0.5092	0.4725	0.4693	0.4867	AVRG		1.96998		0.5076	6	15	0.100	0.99	
Carbon Disulfide		1.9206	1.8268	1.6855	1.5744	1.6561	1.6287	1.5930	1.6540	AVRG		0.59088		1.6924	7	15	0.100	0.99	
MTBE		1.0283	0.9704	0.9057	0.9460	0.9147	0.8685	0.8049	0.8488	AVRG		1.09780		0.9109	8	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5061	0.4780	0.4547	0.4449	0.4560	0.4366	0.4309	0.4498	AVRG		2.18771		0.4571	5	15	0.100	0.99	
Vinyl Acetate			0.9013	0.8434	0.8447m	0.8124	0.8086	0.7391	0.7099	AVRG		1.23685		0.8085	8	15	0.05	0.99	
1,1-Dichloroethane		1.1778	1.1309	1.0599	1.0637	1.0344	0.9859	0.9304	0.9196	AVRG		0.96354		1.0378	9	15	0.200	0.99	
2-Butanone				0.1789m	0.1844m	0.1720	0.1528	0.1441	0.1430	AVRG		6.15295		0.1625	11	15	0.100	0.99	
2,2-Dichloropropane		0.8777	0.8404	0.7520	0.7256	0.7140	0.6927	0.6436	0.6415	AVRG		1.35883		0.7359	12	15	0.05	0.99	
cis-1,2-Dichloroethene		0.5377	0.5208	0.4903	0.5051	0.5124	0.4938	0.4903	0.4998	AVRG		1.97523		0.5063	3	15	0.100	0.99	
Chloroform		1.0887	1.0251	0.9871	0.9904	0.9670	0.9210	0.8761	0.8819	AVRG		1.03394		0.9672	7	15	0.200	0.99	
Bromochloromethane		0.2495	0.2350	0.2228	0.2367	0.2303	0.2308	0.2306	0.2362	AVRG		4.27375		0.2340	3	15	0.05	0.99	
1,1,1-Trichloroethane		0.9251	0.8694	0.7549	0.7266	0.7538	0.7030	0.6554	0.6447	AVRG		1.32609		0.7541	13	15	0.100	0.99	
1,1-Dichloropropene		0.5433	0.4687	0.4309	0.4143	0.4334	0.4352	0.4324	0.4234	AVRG		2.23364		0.4477	9	15	0.05	0.99	
Carbon Tetrachloride		0.4543	0.4462	0.3967	0.3820	0.4058	0.4043	0.3907	0.4003	AVRG		2.43872		0.4101	6	15	0.100	0.99	
1,2-Dichloroethane		0.4570	0.4412	0.4005	0.4380	0.4223	0.3959	0.3688	0.3572	AVRG		2.43833		0.4101	9	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.2719	1.1909	1.1415	1.1618	1.1768	1.1616	1.1345	1.1345	AVRG		0.85347		1.1717	4	15	0.500	0.99	
Trichloroethene		0.3438	0.3238	0.3025	0.2899	0.3037	0.2998	0.3034	0.3086	AVRG		3.23179		0.3094	5	15	0.200	0.99	
1,2-Dichloropropane		0.4042	0.3727	0.3520	0.3678	0.3647	0.3575	0.3448	0.3469	AVRG		2.74868		0.3638	5	15	0.100	0.99	
Bromodichloromethane		0.4517	0.4301	0.4195	0.4485	0.4405	0.4356	0.4114	0.4210	AVRG		2.31329		0.4323	3	15	0.200	0.99	
Dibromomethane		0.1828	0.1777	0.1761	0.1830	0.1781	0.1774	0.1713	0.1713	AVRG		5.64265		0.1772	2	15	0.05	0.99	
4-Methyl-2-Pentanone				0.2363	0.2522	0.2397	0.2329	0.2180	0.2203	AVRG		4.28742		0.2332	5	15	0.100	0.99	
cis-1,3-Dichloropropene		0.4907	0.4789	0.4503	0.4869	0.4865	0.4935	0.4771	0.4633	AVRG		2.09036		0.4784	3	15	0.200	0.99	
Toluene		0.7808	0.7551	0.7291	0.7092	0.7357	0.7898	0.7038	0.6966	AVRG		1.35591		0.7375	5	15	0.400	0.99	
trans-1,3-Dichloropropene		0.4597	0.4333	0.4395	0.4494	0.4452	0.4546	0.4309	0.4297	AVRG		2.25839		0.4428	3	15	0.100	0.99	
1,1,2-Trichloroethane		0.1161	0.1189	0.1260	0.1325	0.1270	0.1282	0.1278	0.1301	AVRG		7.94672		0.1258	4	15	0.100	0.99	
2-Hexanone				0.1896	0.2000	0.1928	0.1863	0.1825	0.1756	AVRG		5.32480		0.1878	4	15	0.100	0.99	
1,3-Dichloropropane		0.4358	0.4038	0.3887	0.4103	0.3997	0.4115	0.4038	0.3983	AVRG		2.46008		0.4065	3	15	0.05	0.99	
Tetrachloroethene		0.3060	0.2788	0.2574	0.2532	0.2703	0.2900	0.3042	0.3181	AVRG		3.51202		0.2847	8	15	0.200	0.99	
Dibromochloromethane		0.2617	0.2811	0.2852	0.2973	0.3028	0.3129	0.3166	0.3233	AVRG		3.36012		0.2976	7	15	0.100	0.99	
1,2-Dibromoethane		0.2322	0.2216	0.2167	0.2330	0.2274	0.2308	0.2312	0.2365	AVRG		4.37318		0.2287	3	15	0.100	0.99	
Chlorobenzene		0.8902	0.8061	0.7658	0.8022	0.8092	0.8475	0.7970	0.8509	AVRG		1.21786		0.8211	5	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3005	0.2887	0.2885	0.3093	0.3073	0.3322	0.3303	0.3314	AVRG		3.21520		0.3110	6	15	0.05	0.99	
Ethylbenzene		1.5424	1.4178	1.3655	1.3606	1.4054	1.5201	1.4634	1.4252	AVRG		0.69563		1.4375	5	15	0.100	0.99	
m,p-Xylenes	0.5300	0.4926	0.4844	0.4759	0.4728	0.5243	0.5442	0.5198	0.4742	AVRG		1.99190		0.5020	5	15	0.100	0.99	
o-Xylene		0.4862	0.4758	0.4691	0.4611	0.4912	0.5411	0.5121	0.5130	AVRG		2.02550		0.4937	5	15	0.300	0.99	
Styrene		0.7481	0.7797	0.7989	0.8092	0.8820	0.8714	0.7329	0.7298	AVRG		1.25946		0.7940	7	15	0.300	0.99	
Bromoform		0.1202	0.1277	0.1346	0.1510	0.1604	0.1722			AVRG		6.92676		0.1444	14	15	0.100	0.99	
Isopropylbenzene		2.6387	2.5460	2.3177	2.2775	2.4711	2.5384	2.4757	2.3593	AVRG		0.40765		2.4531	5	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.5434	0.4928	0.4839	0.4921	0.4869	0.4694	0.4740	0.4692	AVRG		2.04512		0.4890	5	15	0.300	0.99	
1,2,3-Trichloropropane		0.1113	0.1097	0.1143	0.1161	0.1151	0.1174	0.1193	0.1102	AVRG		8.75751		0.1142	3	15	0.05	0.99	
Propylbenzene		3.4780	3.1989	2.9912	2.6888	3.0160	3.0118	2.8107	2.6131	AVRG		0.33601		2.9761	9	15	0.05	0.99	
Bromobenzene		0.6356	0.6028	0.6117	0.6139	0.6471	0.6995	0.6873	0.6497	AVRG		1.55413		0.6434	5	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.1558	2.0613	1.9250	1.9030	1.9268	1.9589	1.9008	1.7172	AVRG		0.51451		1.9436	7	15	0.05	0.99	
2-Chlorotoluene		2.3248	2.2157	2.0843	2.0248	2.0289	1.9443	1.8629	1.6931	AVRG		0.49448		2.0223	10	15	0.05	0.99	
4-Chlorotoluene		2.0603	1.9210	1.8486	1.7922	1.7785	1.9025	1.7886	1.7498	AVRG		0.53903		1.8552	6	15	0.05	0.99	
tert-Butylbenzene		1.7452	1.7453	1.5931	1.5102	1.6336	1.7629	1.7935	1.7091	AVRG		0.59291		1.6866	6	15	0.05	0.99	
1,2,4-Trimethylbenzene		1.9650	2.0111	1.8972	1.8755	1.8802	2.0229	1.8894	1.8653	AVRG		0.51925		1.9258	3	15	0.05	0.99	
sec-Butylbenzene		2.6336	2.5834	2.4127	2.2117	2.4269	2.6807	2.6479	2.5521	AVRG		0.39704		2.5186	6	15	0.05	0.99	
para-Isopropyl Toluene		1.9652	1.9373	1.8083	1.6544	1.8685	2.0534	1.9723	1.9666	AVRG		0.52542		1.9032	7	15	0.05	0.99	
1,3-Dichlorobenzene		1.0908	1.0254	0.9804	1.0120	1.0442	1.1274	1.1969	1.1821	AVRG		0.92387		1.0824	7	15	0.600	0.99	
1,4-Dichlorobenzene		1.2126	1.1003	1.0731	1.0813	1.1114	1.1291	1.1544	1.1496	AVRG		0.88773		1.1265	4	15	0.500	0.99	
n-Butylbenzene		2.0226	1.8854	1.6866	1.5564	1.6771	1.7684	1.8237	1.6974	AVRG		0.56667		1.7647	8	15	0.05	0.99	
1,2-Dichlorobenzene		1.0183	0.9661	0.9315	0.9287	0.9089	0.9959	1.0485	1.0610	AVRG		1.01796		0.9824	6	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane			0.0720	0.0759	0.0760	0.0797	0.0754	0.0753	0.0730	AVRG		13.2772		0.0753	3	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.5224	0.4755	0.4535	0.4367	0.4725	0.4796	0.5037	0.5299	AVRG		2.06517		0.4842	7	15	0.200	0.99	
Hexachlorobutadiene		0.2693	0.2630	0.2204	0.2103	0.2332	0.2440	0.2642	0.2691	AVRG		4.05386		0.2467	9	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		0.8151	0.7628	0.7478	0.7542	0.7943	0.7789	0.8153	0.8463	AVRG		1.26688		0.7893	4	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.4428	0.4119	0.3943	0.3982	0.4187	0.4258	0.4441	0.4612	AVRG		2.35501		0.4246	6	15	0.05	0.99	
Dibromofluoromethane	0.6868	0.6789	0.6843	0.6726	0.6651	0.6678	0.6353	0.6092	0.6036	AVRG		1.52449		0.6560	5	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3951	0.3944	0.3953	0.3913	0.3786	0.3828	0.3381	0.3084	0.2890	AVRG		2.74978		0.3637	11	15	0.05	0.99	
Toluene-d8	1.3774	1.4049	1.3863	1.3636	1.3956	1.3798	1.3651	1.3614	1.3608	AVRG		0.72611		1.3772	1	15	0.05	0.99	
Bromofluorobenzene	1.0471	1.0449	1.0348	1.0110	0.9983	0.9760	0.9224	0.9355	0.9218	AVRG		1.01217		0.9880	5	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	14	2.0000	7	5.0000	12	10.000	-10	20.000	8	50.000	-11	75.000	-8	100.00	-11
Chloromethane	0.5000	-11	1.0000	-9	2.0000	-1	5.0000	0	10.000	1	20.000	1	50.000	-1	75.000	0		
Vinyl Chloride	0.5000	19	1.0000	9	2.0000	12	5.0000	6	10.000	2	20.000	3	50.000	-13	75.000	-19	100.00	-19
Bromomethane	0.5000	-5	1.0000	-11	2.0000	-16	5.0000	-13	10.000	0	20.000	6	50.000	11	75.000	13	100.00	16
Chloroethane			1.0000	10	2.0000	12	5.0000	1	10.000	4	20.000	0	50.000	-8	75.000	-11	100.00	-9
Trichlorofluoromethane			1.0000	12	2.0000	8	5.0000	8	10.000	-4	20.000	3	50.000	-9	75.000	-8	100.00	-9
Acetone									10.000	17	20.000	10	50.000	-5	75.000	-7	100.00	-15
Freon 113			0.5000	18	2.0000	15	5.0000	0	10.000	-18	20.000	-5	50.000	-4	75.000	-4	100.00	-1
1,1-Dichloroethene			0.5000	13	2.0000	12	5.0000	-3	10.000	-8	20.000	-3	50.000	-4	75.000	-5	100.00	-2
Methylene Chloride			0.5000	8	2.0000	7	5.0000	0	10.000	3	20.000	0	50.000	-7	75.000	-8	100.00	-4
Carbon Disulfide			0.5000	13	2.0000	8	5.0000	0	10.000	-7	20.000	-2	50.000	-4	75.000	-6	100.00	-2
MTBE			0.5000	13	2.0000	7	5.0000	-1	10.000	4	20.000	0	50.000	-5	75.000	-12	100.00	-7
trans-1,2-Dichloroethene			0.5000	11	2.0000	5	5.0000	-1	10.000	-3	20.000	0	50.000	-4	75.000	-6	100.00	-2
Vinyl Acetate					2.0000	11	5.0000	4	10.000	4	20.000	0	50.000	0	75.000	-9	100.00	-12
1,1-Dichloroethane			0.5000	13	2.0000	9	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-10	100.00	-11
2-Butanone							5.0000	10	10.000	13	20.000	6	50.000	-6	75.000	-11	100.00	-12
2,2-Dichloropropane			0.5000	19	2.0000	14	5.0000	2	10.000	-1	20.000	-3	50.000	-6	75.000	-13	100.00	-13
cis-1,2-Dichloroethene			0.5000	6	2.0000	3	5.0000	-3	10.000	0	20.000	1	50.000	-2	75.000	-3	100.00	-1
Chloroform			0.5000	13	2.0000	6	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-9	100.00	-9
Bromochloromethane			0.5000	7	2.0000	0	5.0000	-5	10.000	1	20.000	-2	50.000	-1	75.000	-1	100.00	1
1,1,1-Trichloroethane			0.5000	**23**	2.0000	15	5.0000	0	10.000	-4	20.000	0	50.000	-7	75.000	-13	100.00	-15
1,1-Dichloropropene			0.5000	**21**	2.0000	5	5.0000	-4	10.000	-7	20.000	-3	50.000	-3	75.000	-3	100.00	-5
Carbon Tetrachloride			0.5000	11	2.0000	9	5.0000	-3	10.000	-7	20.000	-1	50.000	-1	75.000	-5	100.00	-2
1,2-Dichloroethane			0.5000	11	2.0000	8	5.0000	-2	10.000	7	20.000	3	50.000	-3	75.000	-10	100.00	-13
Benzene			0.5000	9	2.0000	2	5.0000	-3	10.000	-1	20.000	0	50.000	-1	75.000	-3	100.00	-3
Trichloroethene			0.5000	11	2.0000	5	5.0000	-2	10.000	-6	20.000	-2	50.000	-3	75.000	-2	100.00	0
1,2-Dichloropropane			0.5000	11	2.0000	2	5.0000	-3	10.000	1	20.000	0	50.000	-2	75.000	-5	100.00	-5
Bromodichloromethane			0.5000	4	2.0000	-1	5.0000	-3	10.000	4	20.000	2	50.000	1	75.000	-5	100.00	-3
Dibromomethane			0.5000	3	2.0000	0	5.0000	-1	10.000	3	20.000	0	50.000	0	75.000	-3	100.00	-3
4-Methyl-2-Pentanone							5.0000	1	10.000	8	20.000	3	50.000	0	75.000	-7	100.00	-6
cis-1,3-Dichloropropene			0.5000	3	2.0000	0	5.0000	-6	10.000	2	20.000	2	50.000	3	75.000	0	100.00	-3
Toluene			0.5000	6	2.0000	2	5.0000	-1	10.000	-4	20.000	0	50.000	7	75.000	-5	100.00	-6
trans-1,3-Dichloropropene			0.5000	4	2.0000	-2	5.0000	-1	10.000	1	20.000	1	50.000	3	75.000	-3	100.00	-3
1,1,2-Trichloroethane			0.5000	-8	2.0000	-5	5.0000	0	10.000	5	20.000	1	50.000	2	75.000	2	100.00	3
2-Hexanone							5.0000	1	10.000	6	20.000	3	50.000	-1	75.000	-3	100.00	-7
1,3-Dichloropropane			0.5000	7	2.0000	-1	5.0000	-4	10.000	1	20.000	-2	50.000	1	75.000	-1	100.00	-2
Tetrachloroethene			0.5000	7	2.0000	-2	5.0000	-10	10.000	-11	20.000	-5	50.000	2	75.000	7	100.00	12
Dibromochloromethane			0.5000	-12	2.0000	-6	5.0000	-4	10.000	0	20.000	2	50.000	5	75.000	6	100.00	9
1,2-Dibromoethane			0.5000	2	2.0000	-3	5.0000	-5	10.000	2	20.000	-1	50.000	1	75.000	1	100.00	3
Chlorobenzene			0.5000	8	2.0000	-2	5.0000	-7	10.000	-2	20.000	-1	50.000	3	75.000	-3	100.00	4
1,1,1,2-Tetrachloroethane			0.5000	-3	2.0000	-7	5.0000	-7	10.000	-1	20.000	-1	50.000	7	75.000	6	100.00	7
Ethylbenzene			0.5000	7	2.0000	-1	5.0000	-5	10.000	-5	20.000	-2	50.000	6	75.000	2	100.00	-1

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	6	1.0000	-2	4.0000	-4	10.000	-5	20.000	-6	40.000	4	100.00	8	150.00	4	200.00	-6
o-Xylene			0.5000	-2	2.0000	-4	5.0000	-5	10.000	-7	20.000	-1	50.000	10	75.000	4	100.00	4
Styrene			0.5000	-6	2.0000	-2	5.0000	1	10.000	2	20.000	11	50.000	10	75.000	-8	100.00	-8
Bromoform			0.5000	-17	2.0000	-12	5.0000	-7	10.000	5	20.000	11	50.000	19				
Isopropylbenzene			0.5000	8	2.0000	4	5.0000	-6	10.000	-7	20.000	1	50.000	3	75.000	1	100.00	-4
1,1,2,2-Tetrachloroethane			0.5000	11	2.0000	1	5.0000	-1	10.000	1	20.000	0	50.000	-4	75.000	-3	100.00	-4
1,2,3-Trichloropropane			0.5000	-3	2.0000	-4	5.0000	0	10.000	2	20.000	1	50.000	3	75.000	5	100.00	-3
Propylbenzene			0.5000	17	2.0000	7	5.0000	1	10.000	-10	20.000	1	50.000	1	75.000	-6	100.00	-12
Bromobenzene			0.5000	-1	2.0000	-6	5.0000	-5	10.000	-5	20.000	1	50.000	9	75.000	7	100.00	1
1,3,5-Trimethylbenzene			0.5000	11	2.0000	6	5.0000	-1	10.000	-2	20.000	-1	50.000	1	75.000	-2	100.00	-12
2-Chlorotoluene			0.5000	15	2.0000	10	5.0000	3	10.000	0	20.000	0	50.000	-4	75.000	-8	100.00	-16
4-Chlorotoluene			0.5000	11	2.0000	4	5.0000	0	10.000	-3	20.000	-4	50.000	3	75.000	-4	100.00	-6
tert-Butylbenzene			0.5000	3	2.0000	3	5.0000	-6	10.000	-10	20.000	-3	50.000	5	75.000	6	100.00	1
1,2,4-Trimethylbenzene			0.5000	2	2.0000	4	5.0000	-1	10.000	-3	20.000	-2	50.000	5	75.000	-2	100.00	-3
sec-Butylbenzene			0.5000	5	2.0000	3	5.0000	-4	10.000	-12	20.000	-4	50.000	6	75.000	5	100.00	1
para-Isopropyl Toluene			0.5000	3	2.0000	2	5.0000	-5	10.000	-13	20.000	-2	50.000	8	75.000	4	100.00	3
1,3-Dichlorobenzene			0.5000	1	2.0000	-5	5.0000	-9	10.000	-7	20.000	-4	50.000	4	75.000	11	100.00	9
1,4-Dichlorobenzene			0.5000	8	2.0000	-2	5.0000	-5	10.000	-4	20.000	-1	50.000	0	75.000	2	100.00	2
n-Butylbenzene			0.5000	15	2.0000	7	5.0000	-4	10.000	-12	20.000	-5	50.000	0	75.000	3	100.00	-4
1,2-Dichlorobenzene			0.5000	4	2.0000	-2	5.0000	-5	10.000	-5	20.000	-7	50.000	1	75.000	7	100.00	8
1,2-Dibromo-3-Chloropropane					2.0000	-4	5.0000	1	10.000	1	20.000	6	50.000	0	75.000	0	100.00	-3
1,2,4-Trichlorobenzene			0.5000	8	2.0000	-2	5.0000	-6	10.000	-10	20.000	-2	50.000	-1	75.000	4	100.00	9
Hexachlorobutadiene			0.5000	9	2.0000	7	5.0000	-11	10.000	-15	20.000	-5	50.000	-1	75.000	7	100.00	9
Naphthalene			0.5000	3	2.0000	-3	5.0000	-5	10.000	-4	20.000	1	50.000	-1	75.000	3	100.00	7
1,2,3-Trichlorobenzene			0.5000	4	2.0000	-3	5.0000	-7	10.000	-6	20.000	-1	50.000	0	75.000	5	100.00	9
Dibromofluoromethane	50.000	5	50.000	3	50.000	4	50.000	3	50.000	1	50.000	2	50.000	-3	50.000	-7	50.000	-8
1,2-Dichloroethane-d4	50.000	9	50.000	8	50.000	9	50.000	8	50.000	4	50.000	5	50.000	-7	50.000	-15	50.000	**-21**
Toluene-d8	50.000	0	50.000	2	50.000	1	50.000	-1	50.000	1	50.000	0	50.000	-1	50.000	-1	50.000	-1
Bromofluorobenzene	50.000	6	50.000	6	50.000	5	50.000	2	50.000	1	50.000	-1	50.000	-7	50.000	-5	50.000	-7

DAR 07/08/15 [Vinyl Acetate]: Combined split peak in 10PPB (ig711).

DAR 07/08/15 [2-Butanone]: Combined split peak in multiple levels.

Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; QUAD=Quadratic regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Cal Date : 07-JUL-2015 Type : WATER

ICV 485271359016 (ig716 07-JUL-2015) stds: S26358 (10000X), S27403 (5000X)
ICV 485271359017 (ig717 07-JUL-2015) stds: S27558 (10000X), S27556 (10000X), S27533 (10000X), S27403 (5000X)

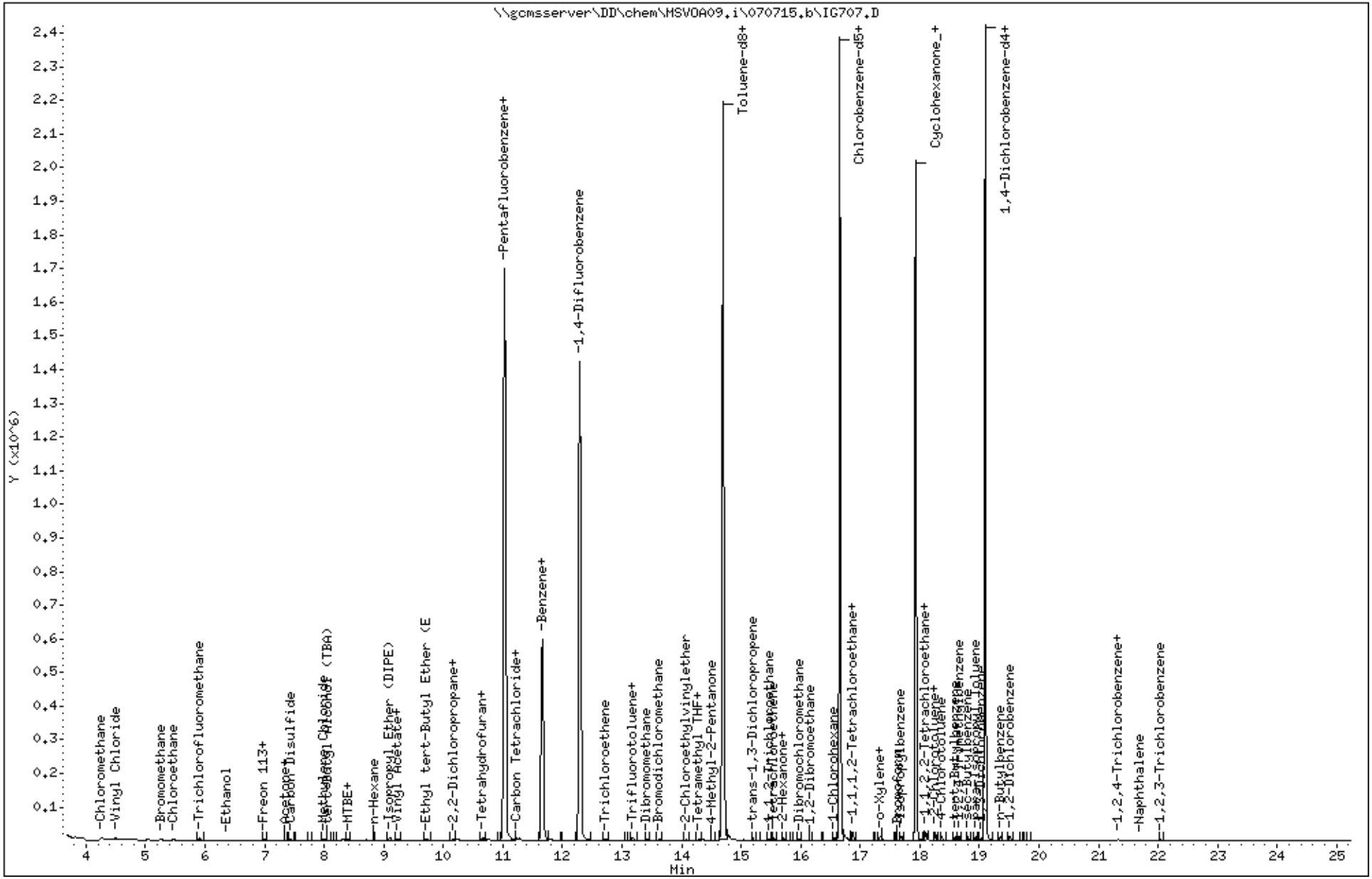
Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	485271359016	20.00	14.29	ug/L	**-29**	20	v- ***
Chloromethane	485271359016	20.00	16.82	ug/L	-16	20	
Vinyl Chloride	485271359016	20.00	16.27	ug/L	-19	20	
Bromomethane	485271359016	20.00	17.31	ug/L	-13	20	
Chloroethane	485271359016	20.00	18.80	ug/L	-6	20	
Trichlorofluoromethane	485271359016	20.00	17.41	ug/L	-13	20	
Acetone	485271359017	25.00	22.76	ug/L	-9	20	
Freon 113	485271359017	25.00	21.56	ug/L	-14	20	
1,1-Dichloroethene	485271359017	25.00	23.34	ug/L	-7	20	
Methylene Chloride	485271359017	25.00	23.47	ug/L	-6	20	
Carbon Disulfide	485271359017	25.00	21.03	ug/L	-16	20	
MTBE	485271359017	25.00	22.99	ug/L	-8	20	
trans-1,2-Dichloroethene	485271359017	25.00	24.14	ug/L	-3	20	
Vinyl Acetate	485271359017	25.00	26.60	ug/L	6	20	
1,1-Dichloroethane	485271359017	25.00	22.68	ug/L	-9	20	
2-Butanone	485271359017	25.00	22.78	ug/L	-9	20	
2,2-Dichloropropane	485271359017	25.00	22.39	ug/L	-10	20	
cis-1,2-Dichloroethene	485271359017	25.00	24.75	ug/L	-1	20	
Chloroform	485271359017	25.00	23.52	ug/L	-6	20	
Bromochloromethane	485271359017	25.00	24.56	ug/L	-2	20	
1,1,1-Trichloroethane	485271359017	25.00	23.24	ug/L	-7	20	
1,1-Dichloropropene	485271359017	25.00	23.49	ug/L	-6	20	
Carbon Tetrachloride	485271359017	25.00	24.64	ug/L	-1	20	
1,2-Dichloroethane	485271359017	25.00	23.61	ug/L	-6	20	
Benzene	485271359017	25.00	24.51	ug/L	-2	20	
Trichloroethene	485271359017	25.00	24.18	ug/L	-3	20	
1,2-Dichloropropane	485271359017	25.00	22.46	ug/L	-10	20	
Bromodichloromethane	485271359017	25.00	23.36	ug/L	-7	20	
Dibromomethane	485271359017	25.00	24.06	ug/L	-4	20	
4-Methyl-2-Pentanone	485271359017	25.00	23.54	ug/L	-6	20	
cis-1,3-Dichloropropene	485271359017	25.00	23.93	ug/L	-4	20	
Toluene	485271359017	25.00	26.13	ug/L	5	20	
trans-1,3-Dichloropropene	485271359017	25.00	22.36	ug/L	-11	20	
1,1,2-Trichloroethane	485271359017	25.00	24.68	ug/L	-1	20	
2-Hexanone	485271359017	25.00	24.97	ug/L	0	20	
1,3-Dichloropropane	485271359017	25.00	25.33	ug/L	1	20	
Tetrachloroethene	485271359017	25.00	26.39	ug/L	6	20	
Dibromochloromethane	485271359017	25.00	25.02	ug/L	0	20	
1,2-Dibromoethane	485271359017	25.00	24.56	ug/L	-2	20	
Chlorobenzene	485271359017	25.00	25.69	ug/L	3	20	
1,1,1,2-Tetrachloroethane	485271359017	25.00	24.85	ug/L	-1	20	
Ethylbenzene	485271359017	25.00	25.96	ug/L	4	20	
m,p-Xylenes	485271359017	50.00	54.43	ug/L	9	20	
o-Xylene	485271359017	25.00	26.06	ug/L	4	20	
Styrene	485271359017	25.00	28.24	ug/L	13	20	
Bromoform	485271359017	25.00	27.85	ug/L	11	20	
Isopropylbenzene	485271359017	25.00	26.53	ug/L	6	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	485271359017	25.00	24.86	ug/L	-1	20	
1,2,3-Trichloropropane	485271359017	25.00	25.68	ug/L	3	20	
Propylbenzene	485271359017	25.00	26.48	ug/L	6	20	
Bromobenzene	485271359017	25.00	26.98	ug/L	8	20	
1,3,5-Trimethylbenzene	485271359017	25.00	28.15	ug/L	13	20	
2-Chlorotoluene	485271359017	25.00	26.64	ug/L	7	20	
4-Chlorotoluene	485271359017	25.00	25.74	ug/L	3	20	
tert-Butylbenzene	485271359017	25.00	26.83	ug/L	7	20	
1,2,4-Trimethylbenzene	485271359017	25.00	27.02	ug/L	8	20	
sec-Butylbenzene	485271359017	25.00	25.87	ug/L	3	20	
para-Isopropyl Toluene	485271359017	25.00	26.43	ug/L	6	20	
1,3-Dichlorobenzene	485271359017	25.00	26.43	ug/L	6	20	
1,4-Dichlorobenzene	485271359017	25.00	26.16	ug/L	5	20	
n-Butylbenzene	485271359017	25.00	25.97	ug/L	4	20	
1,2-Dichlorobenzene	485271359017	25.00	26.50	ug/L	6	20	
1,2-Dibromo-3-Chloropropane	485271359017	25.00	24.31	ug/L	-3	20	
1,2,4-Trichlorobenzene	485271359017	25.00	26.13	ug/L	5	20	
Hexachlorobutadiene	485271359017	25.00	26.11	ug/L	4	20	
Naphthalene	485271359017	25.00	23.59	ug/L	-6	20	
1,2,3-Trichlorobenzene	485271359017	25.00	26.60	ug/L	6	20	

485271359016: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15
485271359017: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

-=low bias v=ICV

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG707.D
Date : 07-JUL-2015 13:45
Client ID: DYNA P&T
Instrument: MSVOA09.i
Sample Info: ICAL,s26360,.0005/1000,s27559,.0005/1000
Purge Volume: 5.0
Operator: VOC
Column phase: RTx Volatiles
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG707.D
Report Date: 08-Jul-2015 13:12

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG707.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 13:45 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,s26360,.0005/1000,s27559,.0005/1000
Misc Info : s27416,.0005/1000,s26220,.001/1000,.25/.5ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:12 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 13:45 Cal File: IG707.D
Als bottle: 1 Calibration Sample, Level: 1
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.819	3.824	(0.346)	7523	0.50000	0.6949
2 Chloromethane	50	4.262	4.268	(0.386)	11822	0.50000	0.6032
3 Vinyl Chloride	62	4.499	4.504	(0.408)	7975	0.50000	0.6486
4 Bromomethane	94	5.258	5.263	(0.477)	3078	0.50000	0.8757
5 Chloroethane	64	5.465	5.470	(0.495)	4701	0.50000	0.6775
6 Trichlorofluoromethane	101	5.918	5.923	(0.536)	7965	0.50000	0.6387
7 Ethanol	45	6.371	6.366	(0.578)	960	25.0000	15.8479(A)
8 Freon 113	101	6.894	6.889	(0.625)	1684	0.25000	0.2876(a)
9 1,1-Dichloroethene	96	7.002	6.997	(0.635)	1732	0.25000	0.2755(a)
10 Acetone	43	7.170	7.165	(0.650)	3610	0.25000	1.9293
11 Isopropanol	45	7.367	7.352	(0.668)	800	2.50000	2.5576(A)
13 Carbon Disulfide	76	7.446	7.450	(0.675)	8529	0.25000	0.3137(a)
14 Methylene Chloride	84	7.997	8.002	(0.725)	2580	0.25000	0.3157(a)
15 tert-Butyl Alcohol (TBA)	59	8.086	8.071	(0.733)	957	2.50000	2.4065(A)
16 MTBE	73	8.313	8.308	(0.753)	4538	0.25000	0.2996(a)
17 trans-1,2-Dichloroethene	96	8.401	8.406	(0.762)	2368	0.25000	0.3150(a)
18 n-Hexane	57	8.707	8.712	(0.789)	874	0.25000	0.1310(A)
19 Isopropyl Ether (DIPE)	45	9.101	9.096	(0.825)	11421	0.25000	0.3071(aA)
20 Vinyl Acetate	43	9.210	9.214	(0.835)	3435	0.25000	0.2667(a)
21 1,1-Dichloroethane	63	9.229	9.224	(0.837)	5394	0.25000	0.3264(a)
22 Ethyl tert-Butyl Ether (ETBE)	59	9.732	9.727	(0.882)	7901	0.25000	0.3190(aA)
23 2,2-Dichloropropane	77	10.185	10.190	(0.923)	4057	0.25000	0.3556(a)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG707.D
Report Date: 08-Jul-2015 13:12

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	24 cis-1,2-Dichloroethene	96	10.244	10.239	(0.929)	2547	0.25000	0.2979(a)
	25 2-Butanone	43	10.244	10.230	(0.929)	644	0.25000	0.2426(a)
	26 Tetrahydrofuran	42	10.668	10.653	(0.967)	4453	2.50000	3.0128(A)
	27 Bromochloromethane	128	10.668	10.673	(0.967)	1006	0.25000	0.2592(a)
	28 Chloroform	83	10.747	10.752	(0.974)	5021	0.25000	0.3274(a)
*	29 Pentafluorobenzene	168	11.033	11.038	(1.000)	831291	50.0000	
	30 Dibromofluoromethane	113	11.033	11.038	(1.000)	570966	50.0000	54.8647
	31 1,1,1-Trichloroethane	97	11.023	11.028	(0.999)	4626	0.25000	0.4063(a)
	32 Carbon Tetrachloride	117	11.240	11.255	(0.914)	3421	0.25000	0.3229(a)
	33 1,1-Dichloropropene	75	11.289	11.294	(0.918)	3574	0.25000	0.3092(a)
	34 Benzene	78	11.644	11.649	(0.947)	10026	0.25000	0.3220(a)
	35 1,2-Dichloroethane-d4	65	11.664	11.668	(0.949)	540776	50.0000	55.0776
	36 Methyl tert-Amyl Ether (TAME)	73	11.693	11.688	(0.951)	5352	0.25000	0.2738(aA)
	37 1,2-Dichloroethane	62	11.802	11.797	(0.960)	3163	0.25000	0.2966(a)
*	38 1,4-Difluorobenzene	114	12.294	12.299	(1.000)	1368862	50.0000	
	39 Trichloroethene	95	12.718	12.723	(1.034)	2894	0.25000	0.3458(a)
	40 Trifluorotoluene	146	13.171	13.176	(1.071)	2540	0.25000	0.2632(aA)
	41 1,2-Dichloropropane	63	13.181	13.186	(1.072)	2851	0.25000	0.2897(a)
	42 Dibromomethane	93	13.418	13.423	(1.091)	1366	0.25000	0.2780(a)
	43 Bromodichloromethane	83	13.625	13.630	(1.108)	3318	0.25000	0.2792(a)
	44 2-Chloroethylvinylether	63	14.068	14.073	(1.144)	1784	0.50000	0.4296(a)
	45 Tetramethyl THF	43	14.295	14.280	(1.163)	5740	0.25000	0.3162(aA)
	46 cis-1,3-Dichloropropene	75	14.364	14.359	(1.168)	3723	0.25000	0.2798(a)
	47 4-Methyl-2-Pentanone	43	14.522	14.517	(1.181)	2112	0.25000	0.3248(a)
	48 Toluene-d8	98	14.699	14.704	(0.882)	1662956	50.0000	50.7499
	49 Toluene	92	14.797	14.802	(0.888)	5488	0.25000	0.3121(a)
	50 trans-1,3-Dichloropropene	75	15.202	15.197	(0.912)	2760	0.25000	0.2520(a)
	51 1,1,2-Trichloroethane	85	15.458	15.463	(0.928)	714	0.25000	0.2201(a)
	52 Tetrachloroethene	166	15.546	15.551	(0.933)	1743	0.25000	0.2427(a)
	53 2-Hexanone	43	15.704	15.699	(0.943)	1236	0.25000	0.2612(a)
	54 1,3-Dichloropropane	76	15.704	15.709	(0.943)	2731	0.25000	0.2669(a)
	55 Dibromochloromethane	129	15.980	15.975	(0.959)	1623	0.25000	0.2040(a)
	56 1,2-Dibromoethane	107	16.157	16.162	(0.970)	1284	0.25000	0.2203(a)
	57 1-Chlorohexane	91	16.562	16.566	(0.994)	2025	0.25000	0.1911(a)
*	58 Chlorobenzene-d5	117	16.660	16.665	(1.000)	1207293	50.0000	
	59 Chlorobenzene	112	16.700	16.695	(1.002)	6150	0.25000	0.2963(a)
	60 Ethylbenzene	91	16.749	16.744	(1.005)	9976	0.25000	0.2923(a)
	61 1,1,1,2-Tetrachloroethane	131	16.778	16.783	(1.007)	1899	0.25000	0.2381(a)
	62 m,p-Xylenes	106	16.877	16.882	(1.013)	6399	0.50000	0.5412
	63 o-Xylene	106	17.340	17.335	(1.041)	3299	0.25000	0.2803(a)
	64 Styrene	104	17.360	17.365	(1.042)	4912	0.25000	0.2497(a)
	65 Bromoform	173	17.646	17.641	(1.059)	663	0.25000	0.1548(a)
	66 Isopropylbenzene	105	17.685	17.690	(0.926)	8350	0.25000	0.2897(a)
	67 Cyclohexanone_	55	17.931	17.936	(0.939)	2543	0.25000	2.2682(A)
	68 Bromofluorobenzene	95	17.931	17.936	(0.939)	608498	50.0000	50.9706
	69 1,1,2,2-Tetrachloroethane	83	18.079	18.074	(0.947)	1762	0.25000	0.2749(a)
	70 Propylbenzene	91	18.099	18.104	(0.948)	10662	0.25000	0.3115(a)
	71 Bromobenzene	156	18.109	18.104	(0.948)	2028	0.25000	0.2476(a)
	73 2-Chlorotoluene	91	18.267	18.262	(0.957)	7698	0.25000	0.3209(a)
	74 1,3,5-Trimethylbenzene	105	18.267	18.271	(0.957)	6833	0.25000	0.3099(a)
	75 4-Chlorotoluene	91	18.375	18.370	(0.962)	6378	0.25000	0.2899(a)
	76 tert-Butylbenzene	119	18.592	18.597	(0.974)	5283	0.25000	0.2787(a)
	77 1,2,4-Trimethylbenzene	105	18.661	18.656	(0.977)	6449	0.25000	0.3219(a)
	78 sec-Butylbenzene	105	18.809	18.813	(0.985)	7726	0.25000	0.2882(a)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG707.D
Report Date: 08-Jul-2015 13:12

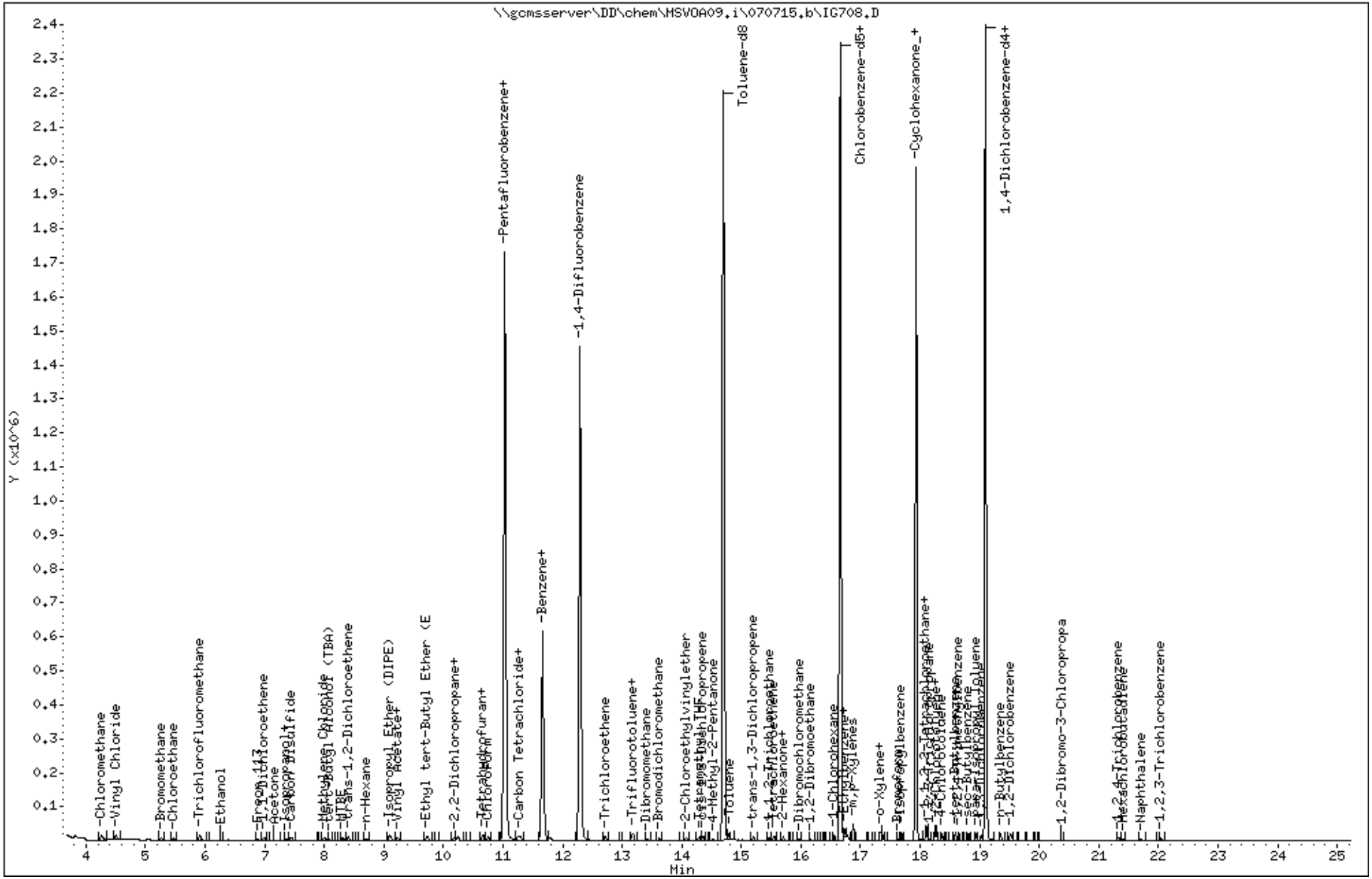
Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
79 para-Isopropyl Toluene	119	18.937	18.942	(0.992)	5777	0.25000	0.2980(a)
80 1,3-Dichlorobenzene	146	19.025	19.030	(0.996)	3314	0.25000	0.2439(a)
* 81 1,4-Dichlorobenzene-d4	152	19.094	19.099	(1.000)	581147	50.0000	
82 1,4-Dichlorobenzene	146	19.124	19.129	(1.002)	3826	0.25000	0.2814(a)
83 n-Butylbenzene	91	19.351	19.355	(1.013)	6209	0.25000	0.3877(a)
84 1,2-Dichlorobenzene	146	19.528	19.533	(1.023)	3263	0.25000	0.2602(a)
86 1,2,4-Trichlorobenzene	180	21.331	21.336	(1.117)	1593	0.25000	0.3286(a)
87 Hexachlorobutadiene	225	21.410	21.415	(1.121)	584	0.25000	0.2257(a)
88 Naphthalene	128	21.706	21.711	(1.137)	2479	0.25000	0.2975(a)
89 1,2,3-Trichlorobenzene	180	22.041	22.046	(1.154)	1228	0.25000	0.3004(a)

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG708.D
Date : 07-JUL-2015 14:19
Client ID: DYNA P&T
Sample Info: ICAL,=ICAL,2x
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG708.D
Report Date: 08-Jul-2015 13:13

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG708.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 14:19 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,=ICAL,2x
Misc Info : .5/1ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:13 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 14:19 Cal File: IG708.D
Als bottle: 2 Calibration Sample, Level: 2
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.819	3.824	(0.346)	14289	1.00000	1.2342
2 Chloromethane	50	4.263	4.268	(0.387)	21282	1.00000	1.1252
3 Vinyl Chloride	62	4.499	4.504	(0.408)	15218	1.00000	1.1656
4 Bromomethane	94	5.258	5.263	(0.477)	5965	1.00000	1.4124
5 Chloroethane	64	5.465	5.470	(0.496)	8632	1.00000	1.1749
6 Trichlorofluoromethane	101	5.909	5.923	(0.536)	15963	1.00000	1.2006
7 Ethanol	45	6.372	6.366	(0.578)	3152	50.0000	50.8529(A)
8 Freon 113	101	6.894	6.889	(0.625)	3890	0.50000	0.6413
9 1,1-Dichloroethene	96	6.993	6.997	(0.634)	3854	0.50000	0.5812
10 Acetone	43	7.170	7.165	(0.650)	4328	0.50000	2.2323
11 Isopropanol	45	7.357	7.352	(0.667)	2026	5.00000	6.2512(A)
12 Iodomethane	142	7.347	7.362	(0.667)	1814	0.50000	0.3374(A)
13 Carbon Disulfide	76	7.446	7.450	(0.675)	16543	0.50000	0.5807
14 Methylene Chloride	84	8.008	8.002	(0.726)	4732	0.50000	0.5575
15 tert-Butyl Alcohol (TBA)	59	8.077	8.071	(0.733)	2279	5.00000	5.5311(A)
16 MTBE	73	8.303	8.308	(0.753)	8857	0.50000	0.5608
17 trans-1,2-Dichloroethene	96	8.402	8.406	(0.762)	4359	0.50000	0.5585
18 n-Hexane	57	8.707	8.712	(0.790)	2839	0.50000	0.4684(A)
19 Isopropyl Ether (DIPE)	45	9.102	9.096	(0.826)	22288	0.50000	0.5731(A)
20 Vinyl Acetate	43	9.220	9.214	(0.836)	7883	0.50000	0.5908
21 1,1-Dichloroethane	63	9.220	9.224	(0.836)	10145	0.50000	0.5858
22 Ethyl tert-Butyl Ether (ETBE)	59	9.722	9.727	(0.882)	14779	0.50000	0.5699(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG708.D
Report Date: 08-Jul-2015 13:13

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.186	10.190	(0.924)	7560	0.50000	0.6267
	24 cis-1,2-Dichloroethene	96	10.245	10.239	(0.929)	4631	0.50000	0.5285
	25 2-Butanone	43	10.245	10.230	(0.929)	1934	0.50000	0.7031
	26 Tetrahydrofuran	42	10.659	10.653	(0.967)	8514	5.00000	5.5732(A)
	27 Bromochloromethane	128	10.678	10.673	(0.969)	2149	0.50000	0.5285
	28 Chloroform	83	10.747	10.752	(0.975)	9377	0.50000	0.5831
*	29 Pentafluorobenzene	168	11.023	11.038	(1.000)	861332	50.0000	
	30 Dibromofluoromethane	113	11.033	11.038	(1.001)	584767	50.0000	53.6943
	31 1,1,1-Trichloroethane	97	11.023	11.028	(1.000)	7968	0.50000	0.6627
	32 Carbon Tetrachloride	117	11.250	11.255	(0.915)	6358	0.50000	0.5800
	33 1,1-Dichloropropene	75	11.289	11.294	(0.918)	7603	0.50000	0.6253
	34 Benzene	78	11.644	11.649	(0.947)	17800	0.50000	0.5547
	35 1,2-Dichloroethane-d4	65	11.664	11.668	(0.949)	551990	50.0000	54.4711
	36 Methyl tert-Amyl Ether (TAME)	73	11.694	11.688	(0.951)	10933	0.50000	0.5439(A)
	37 1,2-Dichloroethane	62	11.792	11.797	(0.959)	6396	0.50000	0.5798
*	38 1,4-Difluorobenzene	114	12.295	12.299	(1.000)	1399462	50.0000	
	39 Trichloroethene	95	12.718	12.723	(1.034)	4811	0.50000	0.5628
	40 Trifluorotoluene	146	13.172	13.176	(1.071)	5222	0.50000	0.5251(A)
	41 1,2-Dichloropropane	63	13.182	13.186	(1.072)	5657	0.50000	0.5618
	42 Dibromomethane	93	13.418	13.423	(1.091)	2558	0.50000	0.5125
	43 Bromodichloromethane	83	13.625	13.630	(1.108)	6321	0.50000	0.5212
	44 2-Chloroethylvinylether	63	14.078	14.073	(1.145)	3634	1.00000	0.8645
	45 Tetramethyl THF	43	14.295	14.280	(1.163)	10947	0.50000	0.5913(A)
	46 cis-1,3-Dichloropropene	75	14.354	14.359	(1.168)	6867	0.50000	0.5091
	47 4-Methyl-2-Pentanone	43	14.522	14.517	(1.181)	4027	0.50000	0.6058
	48 Toluene-d8	98	14.699	14.704	(0.882)	1686511	50.0000	51.6050
	49 Toluene	92	14.798	14.802	(0.888)	9373	0.50000	0.5440
	50 trans-1,3-Dichloropropene	75	15.202	15.197	(0.912)	5518	0.50000	0.5107
	51 1,1,2-Trichloroethane	85	15.468	15.463	(0.928)	1394	0.50000	0.4366(a)
	52 Tetrachloroethene	166	15.547	15.551	(0.933)	3673	0.50000	0.5198
	53 2-Hexanone	43	15.705	15.699	(0.943)	2532	0.50000	0.5381
	54 1,3-Dichloropropane	76	15.705	15.709	(0.943)	5232	0.50000	0.5170
	55 Dibromochloromethane	129	15.981	15.975	(0.959)	3142	0.50000	0.4105(a)
	56 1,2-Dibromoethane	107	16.158	16.162	(0.970)	2788	0.50000	0.4852(a)
	57 1-Chlorohexane	91	16.562	16.566	(0.994)	4345	0.50000	0.4204(a)
*	58 Chlorobenzene-d5	117	16.661	16.665	(1.000)	1200456	50.0000	
	59 Chlorobenzene	112	16.690	16.695	(1.002)	10686	0.50000	0.5220
	60 Ethylbenzene	91	16.739	16.744	(1.005)	18516	0.50000	0.5500
	61 1,1,1,2-Tetrachloroethane	131	16.779	16.783	(1.007)	3607	0.50000	0.4704(a)
	62 m,p-Xylenes	106	16.877	16.882	(1.013)	11827	1.00000	1.0179
	63 o-Xylene	106	17.331	17.335	(1.040)	5837	0.50000	0.5033
	64 Styrene	104	17.360	17.365	(1.042)	8981	0.50000	0.4738(a)
	65 Bromoform	173	17.636	17.641	(1.059)	1443	0.50000	0.3510(a)
	66 Isopropylbenzene	105	17.685	17.690	(0.926)	15315	0.50000	0.5398
	67 Cyclohexanone_	55	17.932	17.936	(0.939)	2519	0.50000	2.7016(A)
	68 Bromofluorobenzene	95	17.932	17.936	(0.939)	606439	50.0000	51.1130
	69 1,1,2,2-Tetrachloroethane	83	18.080	18.074	(0.947)	3154	0.50000	0.5058
	70 Propylbenzene	91	18.099	18.104	(0.948)	20186	0.50000	0.5887
	71 Bromobenzene	156	18.109	18.104	(0.948)	3689	0.50000	0.4618(a)
	72 1,2,3-Trichloropropane	110	18.149	18.153	(0.950)	646	0.50000	0.4447(a)
	73 2-Chlorotoluene	91	18.257	18.262	(0.956)	13493	0.50000	0.5678
	74 1,3,5-Trimethylbenzene	105	18.267	18.271	(0.957)	12512	0.50000	0.5634
	75 4-Chlorotoluene	91	18.375	18.370	(0.962)	11958	0.50000	0.5492
	76 tert-Butylbenzene	119	18.592	18.597	(0.974)	10129	0.50000	0.5404

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG708.D
Report Date: 08-Jul-2015 13:13

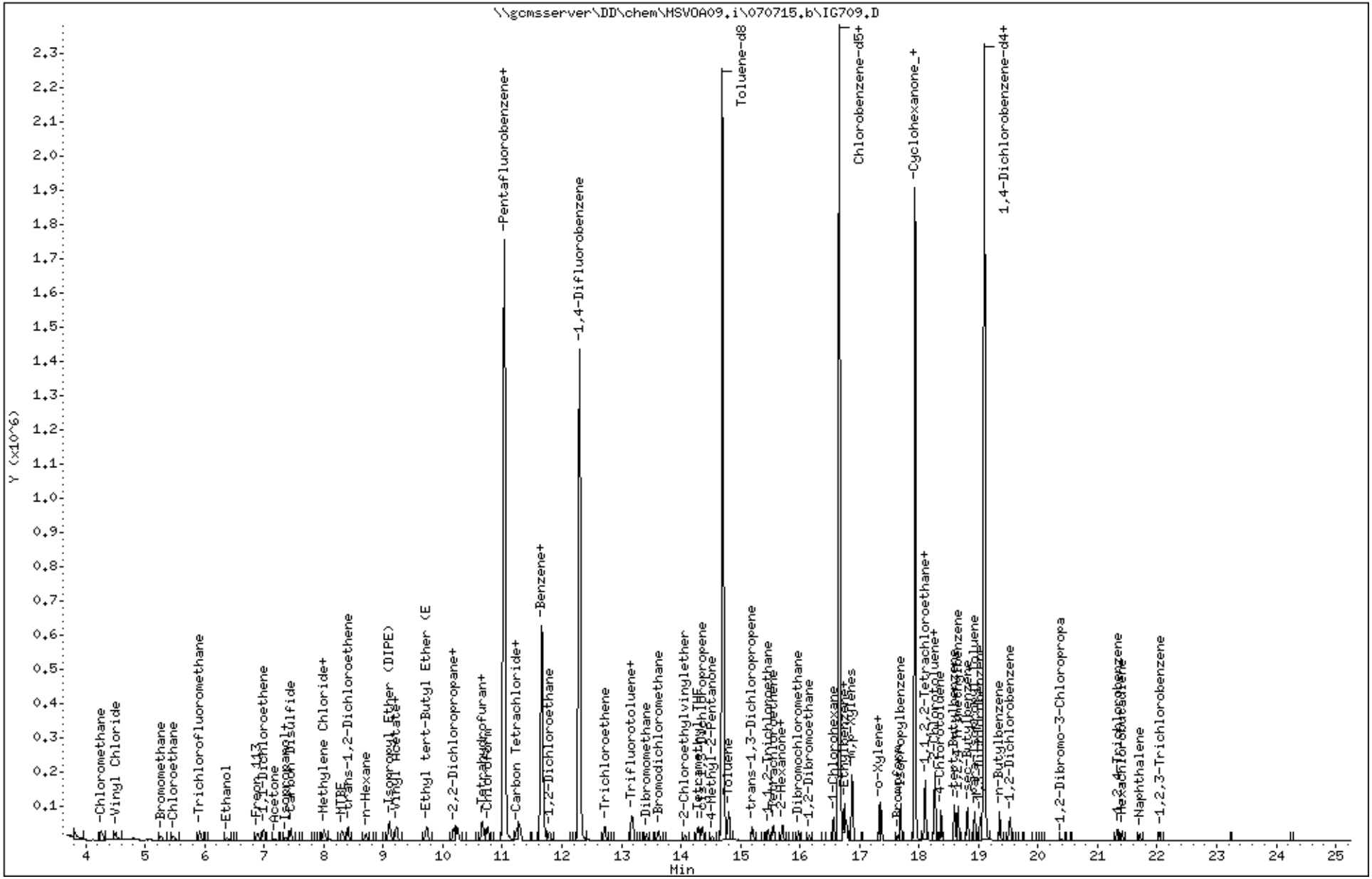
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77	1,2,4-Trimethylbenzene	105	18.661	18.656	(0.977)	11405	0.50000	0.5694
78	sec-Butylbenzene	105	18.809	18.813	(0.985)	15285	0.50000	0.5699
79	para-Isopropyl Toluene	119	18.937	18.942	(0.992)	11406	0.50000	0.5790
80	1,3-Dichlorobenzene	146	19.026	19.030	(0.996)	6331	0.50000	0.4773(a)
* 81	1,4-Dichlorobenzene-d4	152	19.095	19.099	(1.000)	580394	50.0000	
82	1,4-Dichlorobenzene	146	19.124	19.129	(1.002)	7038	0.50000	0.5224
83	n-Butylbenzene	91	19.351	19.355	(1.013)	11739	0.50000	0.6879
84	1,2-Dichlorobenzene	146	19.528	19.533	(1.023)	5910	0.50000	0.4802(a)
85	1,2-Dibromo-3-Chloropropane	75	20.386	20.390	(1.068)	348	0.50000	0.3660(a)
86	1,2,4-Trichlorobenzene	180	21.332	21.336	(1.117)	3032	0.50000	0.5997
87	Hexachlorobutadiene	225	21.421	21.415	(1.122)	1563	0.50000	0.5870
88	Naphthalene	128	21.706	21.711	(1.137)	4731	0.50000	0.5627
89	1,2,3-Trichlorobenzene	180	22.041	22.046	(1.154)	2570	0.50000	0.5954

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG709.D
Date : 07-JUL-2015 14:54
Client ID: DYNA P&T
Sample Info: ICAL,s26360,.001/500,s27559,.002/500
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG709.D
Report Date: 08-Jul-2015 13:14

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG709.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 14:54 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,s26360,.001/500,s27559,.002/500
Misc Info : s27416,.002/500,s26220,.002/500,2ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:13 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 14:54 Cal File: IG709.D
Als bottle: 3 Calibration Sample, Level: 3
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.824	3.824	(0.347)	26300	2.00000	2.2566
2 Chloromethane	50	4.258	4.268	(0.386)	40838	2.00000	2.3455
3 Vinyl Chloride	62	4.504	4.504	(0.408)	30364	2.00000	2.3117
4 Bromomethane	94	5.263	5.263	(0.477)	11017	2.00000	2.4104
5 Chloroethane	64	5.470	5.470	(0.496)	17169	2.00000	2.3309
6 Trichlorofluoromethane	101	5.913	5.923	(0.536)	30018	2.00000	2.2565
7 Ethanol	45	6.376	6.366	(0.578)	12706	200.000	211.4120(A)
8 Freon 113	101	6.889	6.889	(0.625)	14836	2.00000	2.3388
9 1,1-Dichloroethene	96	6.997	6.997	(0.635)	14851	2.00000	2.2166
10 Acetone	43	7.175	7.165	(0.651)	6558	2.00000	3.4623
11 Isopropanol	45	7.362	7.352	(0.668)	7442	20.0000	23.3093(A)
12 Iodomethane	142	7.362	7.362	(0.668)	9853	2.00000	1.8763(A)
13 Carbon Disulfide	76	7.441	7.450	(0.675)	61488	2.00000	2.1507
14 Methylene Chloride	84	8.003	8.002	(0.726)	18240	2.00000	2.1589
15 tert-Butyl Alcohol (TBA)	59	8.081	8.071	(0.733)	8672	20.0000	21.4754(A)
16 MTBE	73	8.308	8.308	(0.753)	32663	2.00000	2.0974
17 trans-1,2-Dichloroethene	96	8.407	8.406	(0.762)	16088	2.00000	2.0754
18 n-Hexane	57	8.712	8.712	(0.790)	10810	2.00000	1.8337(A)
19 Isopropyl Ether (DIPE)	45	9.106	9.096	(0.826)	81144	2.00000	2.1079(A)
20 Vinyl Acetate	43	9.215	9.214	(0.836)	30336	2.00000	2.3006
21 1,1-Dichloroethane	63	9.225	9.224	(0.836)	38067	2.00000	2.2031
22 Ethyl tert-Butyl Ether (ETBE)	59	9.727	9.727	(0.882)	53646	2.00000	2.0899(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG709.D
Report Date: 08-Jul-2015 13:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.181	10.190	(0.923)	28288	2.00000	2.3176
	24 cis-1,2-Dichloroethene	96	10.240	10.239	(0.928)	17529	2.00000	2.0253
	25 2-Butanone	43	10.240	10.230	(0.928)	6105	2.00000	2.2720
	26 Tetrahydrofuran	42	10.654	10.653	(0.966)	30219	20.0000	20.1952(A)
	27 Bromochloromethane	128	10.673	10.673	(0.968)	7910	2.00000	1.9814
	28 Chloroform	83	10.752	10.752	(0.975)	34506	2.00000	2.1564
*	29 Pentafluorobenzene	168	11.028	11.038	(1.000)	841494	50.0000	
	30 Dibromofluoromethane	113	11.038	11.038	(1.001)	575852	50.0000	53.4769
	31 1,1,1-Trichloroethane	97	11.018	11.028	(0.999)	29263	2.00000	2.3945
	32 Carbon Tetrachloride	117	11.245	11.255	(0.915)	24327	2.00000	2.2079
	33 1,1-Dichloropropene	75	11.294	11.294	(0.919)	25549	2.00000	2.1147
	34 Benzene	78	11.649	11.649	(0.948)	64923	2.00000	2.0579
	35 1,2-Dichloroethane-d4	65	11.659	11.668	(0.949)	538726	50.0000	54.2427
	36 Methyl tert-Amyl Ether (TAME)	73	11.688	11.688	(0.951)	39646	2.00000	2.0212(A)
	37 1,2-Dichloroethane	62	11.797	11.797	(0.960)	24052	2.00000	2.2086
*	38 1,4-Difluorobenzene	114	12.290	12.299	(1.000)	1362880	50.0000	
	39 Trichloroethene	95	12.723	12.723	(1.035)	17654	2.00000	2.0876
	40 Trifluorotoluene	146	13.167	13.176	(1.071)	19317	2.00000	1.9652(A)
	41 1,2-Dichloropropane	63	13.186	13.186	(1.073)	20317	2.00000	2.0596
	42 Dibromomethane	93	13.423	13.423	(1.092)	9689	2.00000	1.9962
	43 Bromodichloromethane	83	13.630	13.630	(1.109)	23446	2.00000	1.9883
	44 2-Chloroethylvinylether	63	14.073	14.073	(1.145)	7507	2.00000	1.8685
	45 Tetramethyl THF	43	14.290	14.280	(1.163)	39721	2.00000	2.1908(A)
	46 cis-1,3-Dichloropropene	75	14.359	14.359	(1.168)	26105	2.00000	1.9952
	47 4-Methyl-2-Pentanone	43	14.527	14.517	(1.182)	13394	2.00000	2.0690
	48 Toluene-d8	98	14.694	14.704	(0.882)	1658786	50.0000	50.8508
	49 Toluene	92	14.803	14.802	(0.889)	36142	2.00000	2.0983
	50 trans-1,3-Dichloropropene	75	15.197	15.197	(0.912)	20740	2.00000	1.9409
	51 1,1,2-Trichloroethane	85	15.463	15.463	(0.928)	5692	2.00000	1.8168
	52 Tetrachloroethene	166	15.552	15.551	(0.934)	13344	2.00000	1.8805
	53 2-Hexanone	43	15.699	15.699	(0.943)	9258	2.00000	1.9742
	54 1,3-Dichloropropane	76	15.709	15.709	(0.943)	19326	2.00000	1.9338
	55 Dibromochloromethane	129	15.975	15.975	(0.959)	13455	2.00000	1.7914
	56 1,2-Dibromoethane	107	16.163	16.162	(0.970)	10607	2.00000	1.8767
	57 1-Chlorohexane	91	16.567	16.566	(0.995)	17712	2.00000	1.7503
*	58 Chlorobenzene-d5	117	16.655	16.665	(1.000)	1196523	50.0000	
	59 Chlorobenzene	112	16.695	16.695	(1.002)	38583	2.00000	1.9011
	60 Ethylbenzene	91	16.744	16.744	(1.005)	67859	2.00000	2.0153
	61 1,1,1,2-Tetrachloroethane	131	16.784	16.783	(1.008)	13819	2.00000	1.8350
	62 m,p-Xylenes	106	16.872	16.882	(1.013)	46367	4.00000	3.9946
	63 o-Xylene	106	17.335	17.335	(1.041)	22772	2.00000	1.9778
	64 Styrene	104	17.365	17.365	(1.043)	37315	2.00000	2.0035
	65 Bromoform	173	17.641	17.641	(1.059)	6114	2.00000	1.5325
	66 Isopropylbenzene	105	17.690	17.690	(0.926)	60166	2.00000	2.0770
	67 Cyclohexanone_	55	17.927	17.936	(0.939)	2352	2.00000	2.5648(A)
	68 Bromofluorobenzene	95	17.927	17.936	(0.939)	611316	50.0000	50.7120
	69 1,1,2,2-Tetrachloroethane	83	18.075	18.074	(0.946)	11646	2.00000	1.8607
	70 Propylbenzene	91	18.104	18.104	(0.948)	75595	2.00000	2.1412
	71 Bromobenzene	156	18.104	18.104	(0.948)	14244	2.00000	1.7846
	72 1,2,3-Trichloropropane	110	18.153	18.153	(0.950)	2592	2.00000	1.7938
	73 2-Chlorotoluene	91	18.262	18.262	(0.956)	52359	2.00000	2.1642
	74 1,3,5-Trimethylbenzene	105	18.262	18.271	(0.956)	48712	2.00000	2.1277
	75 4-Chlorotoluene	91	18.370	18.370	(0.962)	45396	2.00000	2.0595
	76 tert-Butylbenzene	119	18.597	18.597	(0.974)	41243	2.00000	2.1325

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG709.D
Report Date: 08-Jul-2015 13:14

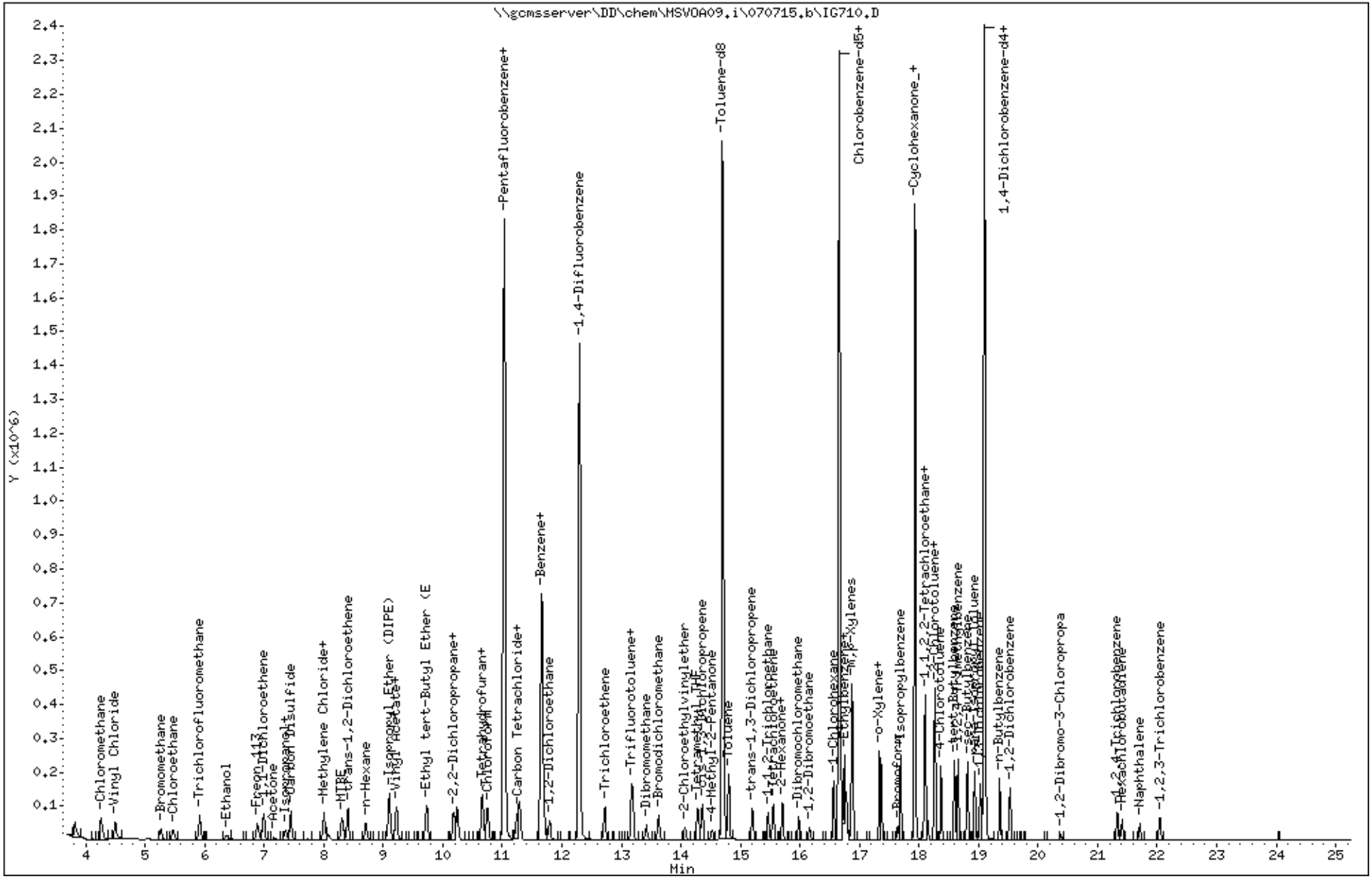
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	77 1,2,4-Trimethylbenzene	105	18.656	18.656	(0.977)	47524	2.00000	2.2897
	78 sec-Butylbenzene	105	18.814	18.813	(0.985)	61048	2.00000	2.1851
	79 para-Isopropyl Toluene	119	18.932	18.942	(0.991)	45780	2.00000	2.2168
	80 1,3-Dichlorobenzene	146	19.031	19.030	(0.996)	24231	2.00000	1.8134
*	81 1,4-Dichlorobenzene-d4	152	19.099	19.099	(1.000)	590781	50.0000	
	82 1,4-Dichlorobenzene	146	19.119	19.129	(1.001)	26001	2.00000	1.9111
	83 n-Butylbenzene	91	19.356	19.355	(1.013)	44554	2.00000	2.4131
	84 1,2-Dichlorobenzene	146	19.523	19.533	(1.022)	22831	2.00000	1.8418
	85 1,2-Dibromo-3-Chloropropane	75	20.391	20.390	(1.068)	1701	2.00000	1.8265
	86 1,2,4-Trichlorobenzene	180	21.337	21.336	(1.117)	11236	2.00000	2.1065
	87 Hexachlorobutadiene	225	21.415	21.415	(1.121)	6214	2.00000	2.2087
	88 Naphthalene	128	21.711	21.711	(1.137)	18026	2.00000	2.0737
	89 1,2,3-Trichlorobenzene	180	22.046	22.046	(1.154)	9734	2.00000	2.1301

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG710.D
Date : 07-JUL-2015 15:28
Client ID: DYNA P&T
Sample Info: ICAL,s=ICAL,2.5x
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG710.D
Report Date: 08-Jul-2015 13:14

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG710.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 15:28 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,s=ICAL,2.5x
Misc Info : 5ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:14 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 15:28 Cal File: IG710.D
Als bottle: 4 Calibration Sample, Level: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.814	3.824	(0.346)	69849	5.00000	5.7787
2 Chloromethane	50	4.258	4.268	(0.386)	98360	5.00000	5.9496
3 Vinyl Chloride	62	4.494	4.504	(0.408)	73526	5.00000	5.4057
4 Bromomethane	94	5.263	5.263	(0.477)	29068	5.00000	5.6899
5 Chloroethane	64	5.470	5.470	(0.496)	39497	5.00000	5.2218
6 Trichlorofluoromethane	101	5.914	5.923	(0.536)	76628	5.00000	5.5552
7 Ethanol	45	6.377	6.366	(0.578)	27624	500.000	459.8023(A)
8 Freon 113	101	6.889	6.889	(0.625)	32921	5.00000	5.0198
9 1,1-Dichloroethene	96	6.998	6.997	(0.635)	32859	5.00000	4.8078
10 Acetone	43	7.165	7.165	(0.650)	12351	5.00000	6.1784
11 Isopropanol	45	7.352	7.352	(0.667)	14990	50.0000	46.6340(A)
12 Iodomethane	142	7.362	7.362	(0.668)	31753	5.00000	5.9328(A)
13 Carbon Disulfide	76	7.441	7.450	(0.675)	144562	5.00000	4.9306
14 Methylene Chloride	84	8.003	8.002	(0.726)	43705	5.00000	5.0556
15 tert-Butyl Alcohol (TBA)	59	8.082	8.071	(0.733)	19639	50.0000	48.1841(A)
16 MTBE	73	8.308	8.308	(0.753)	77682	5.00000	4.9044
17 trans-1,2-Dichloroethene	96	8.407	8.406	(0.762)	38996	5.00000	4.9378
18 n-Hexane	57	8.712	8.712	(0.790)	27013	5.00000	4.6327(A)
19 Isopropyl Ether (DIPE)	45	9.097	9.096	(0.825)	196915	5.00000	5.0177(A)
20 Vinyl Acetate	43	9.215	9.214	(0.836)	72341	5.00000	5.2813
21 1,1-Dichloroethane	63	9.225	9.224	(0.836)	90905	5.00000	5.1215
22 Ethyl tert-Butyl Ether (ETBE)	59	9.728	9.727	(0.882)	132613	5.00000	5.0600(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG710.D
Report Date: 08-Jul-2015 13:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.181	10.190	(0.923)	64496	5.00000	5.1318
	24 cis-1,2-Dichloroethene	96	10.240	10.239	(0.928)	42051	5.00000	4.7876
	25 2-Butanone	43	10.240	10.230	(0.928)	15340	5.00000	5.5200(M)
	26 Tetrahydrofuran	42	10.654	10.653	(0.966)	74483	50.0000	49.0209(A)
	27 Bromochloromethane	128	10.674	10.673	(0.968)	19106	5.00000	4.7160
	28 Chloroform	83	10.752	10.752	(0.975)	84666	5.00000	5.1419
*	29 Pentafluorobenzene	168	11.028	11.038	(1.000)	857692	50.0000	
	30 Dibromofluoromethane	113	11.038	11.038	(1.001)	576871	50.0000	52.1975
	31 1,1,1-Trichloroethane	97	11.019	11.028	(0.999)	64747	5.00000	5.1429
	32 Carbon Tetrachloride	117	11.245	11.255	(0.915)	54960	5.00000	4.8661
	33 1,1-Dichloropropene	75	11.285	11.294	(0.918)	59691	5.00000	4.8324
	34 Benzene	78	11.649	11.649	(0.948)	158128	5.00000	4.9329
	35 1,2-Dichloroethane-d4	65	11.659	11.668	(0.949)	542065	50.0000	53.3982
	36 Methyl tert-Amyl Ether (TAME)	73	11.689	11.688	(0.951)	96113	5.00000	4.8343(A)
	37 1,2-Dichloroethane	62	11.797	11.797	(0.960)	55483	5.00000	5.0081
*	38 1,4-Difluorobenzene	114	12.290	12.299	(1.000)	1385297	50.0000	
	39 Trichloroethene	95	12.724	12.723	(1.035)	41899	5.00000	4.8782
	40 Trifluorotoluene	146	13.167	13.176	(1.071)	43735	5.00000	4.3946(A)
	41 1,2-Dichloropropane	63	13.187	13.186	(1.073)	48757	5.00000	4.8673
	42 Dibromomethane	93	13.423	13.423	(1.092)	24398	5.00000	4.9391
	43 Bromodichloromethane	83	13.630	13.630	(1.109)	58120	5.00000	4.8602
	44 2-Chloroethylvinylether	63	14.074	14.073	(1.145)	19071	5.00000	4.6981
	45 Tetramethyl THF	43	14.281	14.280	(1.162)	93620	5.00000	5.0494(A)
	46 cis-1,3-Dichloropropene	75	14.359	14.359	(1.168)	62377	5.00000	4.7214
	47 4-Methyl-2-Pentanone	43	14.527	14.517	(1.182)	32735	5.00000	4.9900
	48 Toluene-d8	98	14.695	14.704	(0.882)	1616106	50.0000	49.9070
	49 Toluene	92	14.803	14.802	(0.889)	86408	5.00000	5.0923
	50 trans-1,3-Dichloropropene	75	15.197	15.197	(0.912)	52090	5.00000	4.9411
	51 1,1,2-Trichloroethane	85	15.463	15.463	(0.928)	14934	5.00000	4.8594
	52 Tetrachloroethene	166	15.552	15.551	(0.934)	30501	5.00000	4.3969
	53 2-Hexanone	43	15.700	15.699	(0.943)	22474	5.00000	4.8951
	54 1,3-Dichloropropane	76	15.710	15.709	(0.943)	46066	5.00000	4.7063
	55 Dibromochloromethane	129	15.976	15.975	(0.959)	33800	5.00000	4.6161
	56 1,2-Dibromoethane	107	16.163	16.162	(0.970)	25681	5.00000	4.6419
	57 1-Chlorohexane	91	16.567	16.566	(0.995)	44738	5.00000	4.5438
*	58 Chlorobenzene-d5	117	16.656	16.665	(1.000)	1185172	50.0000	
	59 Chlorobenzene	112	16.695	16.695	(1.002)	90761	5.00000	4.5754
	60 Ethylbenzene	91	16.744	16.744	(1.005)	161834	5.00000	4.8709
	61 1,1,1,2-Tetrachloroethane	131	16.784	16.783	(1.008)	34190	5.00000	4.6418
	62 m,p-Xylenes	106	16.873	16.882	(1.013)	112810	10.0000	9.8547
	63 o-Xylene	106	17.336	17.335	(1.041)	55598	5.00000	4.9282
	64 Styrene	104	17.365	17.365	(1.043)	94679	5.00000	5.2059
	65 Bromoform	173	17.641	17.641	(1.059)	15951	5.00000	4.1404
	66 Isopropylbenzene	105	17.691	17.690	(0.926)	140365	5.00000	4.8411
	67 Cyclohexanone_	55	17.927	17.936	(0.939)	2586	5.00000	2.7604(A)
	68 Bromofluorobenzene	95	17.927	17.936	(0.939)	612302	50.0000	49.8663
	69 1,1,2,2-Tetrachloroethane	83	18.075	18.074	(0.946)	29305	5.00000	4.6542
	70 Propylbenzene	91	18.104	18.104	(0.948)	181155	5.00000	5.0471
	71 Bromobenzene	156	18.104	18.104	(0.948)	37047	5.00000	4.6247
	72 1,2,3-Trichloropropane	110	18.154	18.153	(0.950)	6925	5.00000	4.7774
	73 2-Chlorotoluene	91	18.262	18.262	(0.956)	126231	5.00000	5.1645
	74 1,3,5-Trimethylbenzene	105	18.272	18.271	(0.957)	116583	5.00000	5.0127
	75 4-Chlorotoluene	91	18.371	18.370	(0.962)	111953	5.00000	4.9843
	76 tert-Butylbenzene	119	18.597	18.597	(0.974)	96480	5.00000	4.9037

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG710.D
Report Date: 08-Jul-2015 13:14

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77	1,2,4-Trimethylbenzene	105	18.656	18.656	(0.977)	114900	5.00000	5.3965
78	sec-Butylbenzene	105	18.814	18.813	(0.985)	146120	5.00000	5.1117
79	para-Isopropyl Toluene	119	18.932	18.942	(0.991)	109514	5.00000	5.1456
80	1,3-Dichlorobenzene	146	19.031	19.030	(0.996)	59372	5.00000	4.4188
* 81	1,4-Dichlorobenzene-d4	152	19.100	19.099	(1.000)	605619	50.0000	
82	1,4-Dichlorobenzene	146	19.120	19.129	(1.001)	64986	5.00000	4.7010
83	n-Butylbenzene	91	19.356	19.355	(1.013)	102146	5.00000	5.2509
84	1,2-Dichlorobenzene	146	19.524	19.533	(1.022)	56411	5.00000	4.5131
85	1,2-Dibromo-3-Chloropropane	75	20.391	20.390	(1.068)	4594	5.00000	4.9031
86	1,2,4-Trichlorobenzene	180	21.337	21.336	(1.117)	27465	5.00000	4.9232
87	Hexachlorobutadiene	225	21.416	21.415	(1.121)	13345	5.00000	4.6243
88	Naphthalene	128	21.711	21.711	(1.137)	45291	5.00000	5.0087
89	1,2,3-Trichlorobenzene	180	22.047	22.046	(1.154)	23877	5.00000	4.9775

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

[2-Butanone; 5.000 ug/L; response=15340; MI]

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG710.D

Date : 07-JUL-2015 15:28

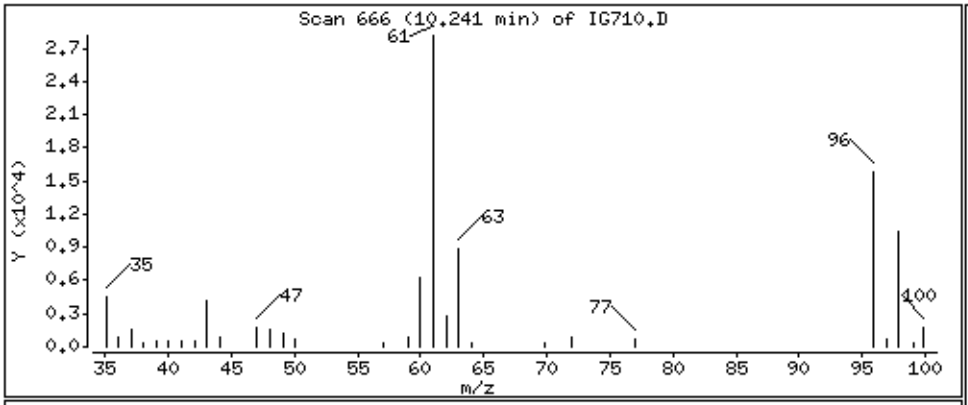
Client ID: DYNA P&T | Instrument: MSVOA09.i

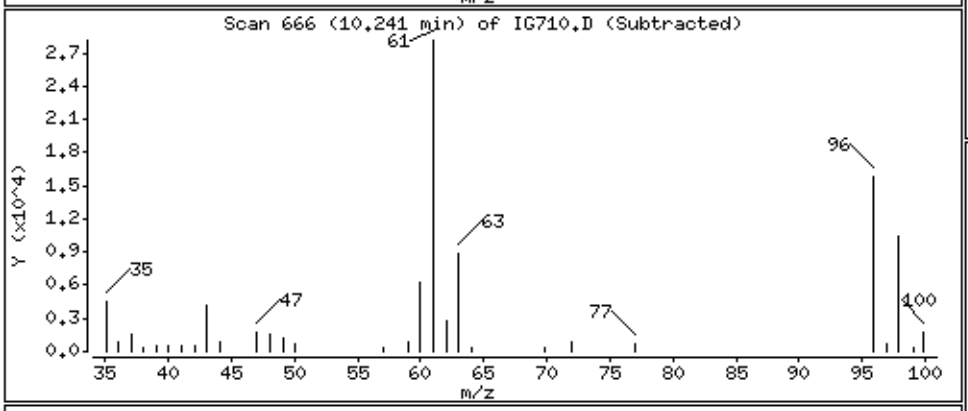
Sample Info: ICAL,s=ICAL,2.5x

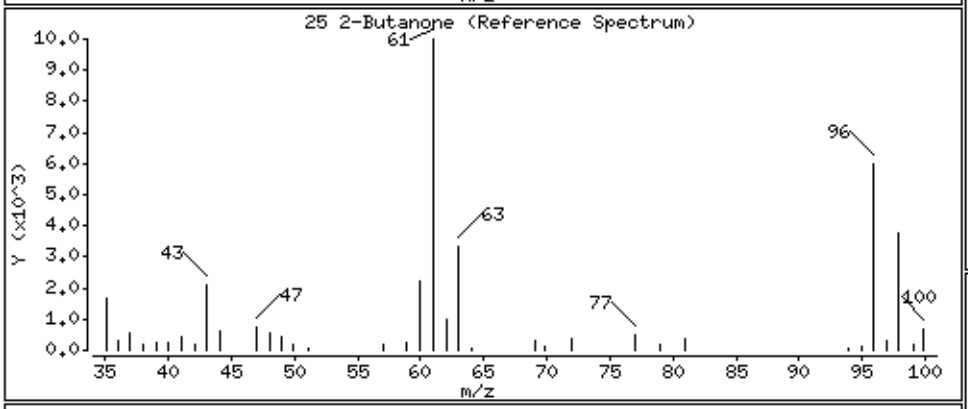
Purge Volume: 5.0 | Operator: VOC

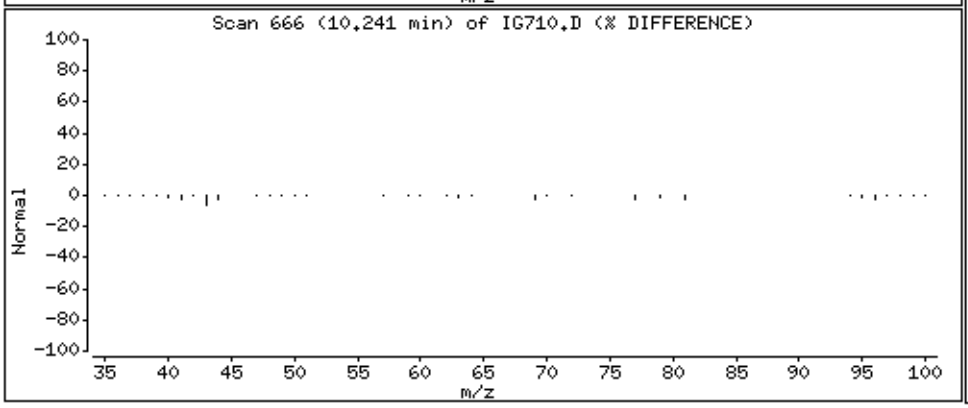
Column phase: RTx Volatiles | Column diameter: 0.25

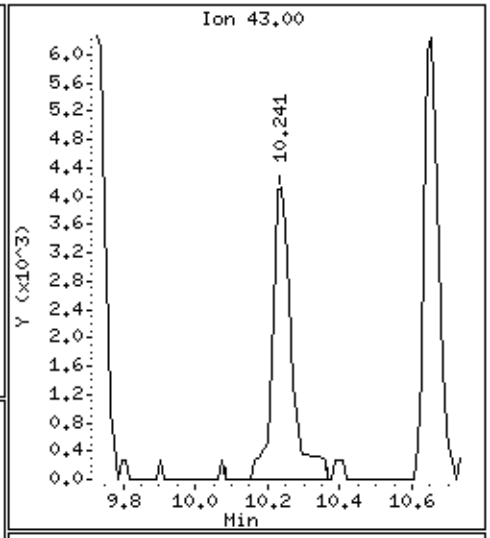
25 2-Butanone | Concentration: 5.5200 UG/L

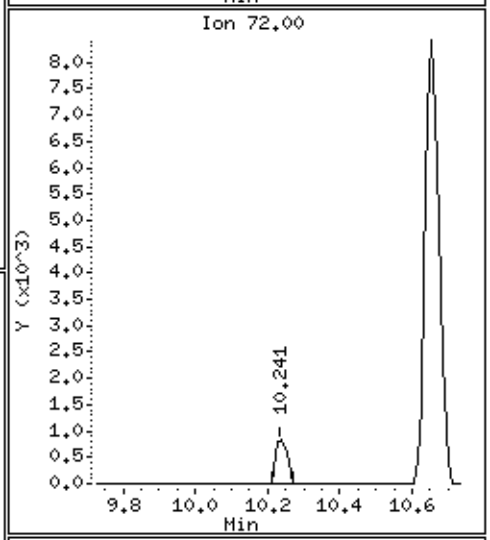


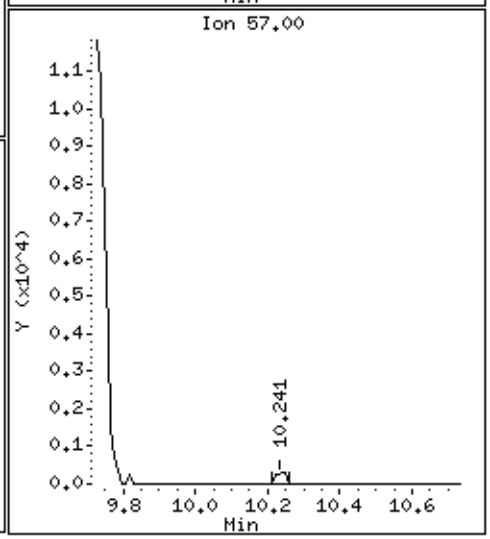












[2-Butanone; before version]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG710.D

Date : 07-JUL-2015 15:28

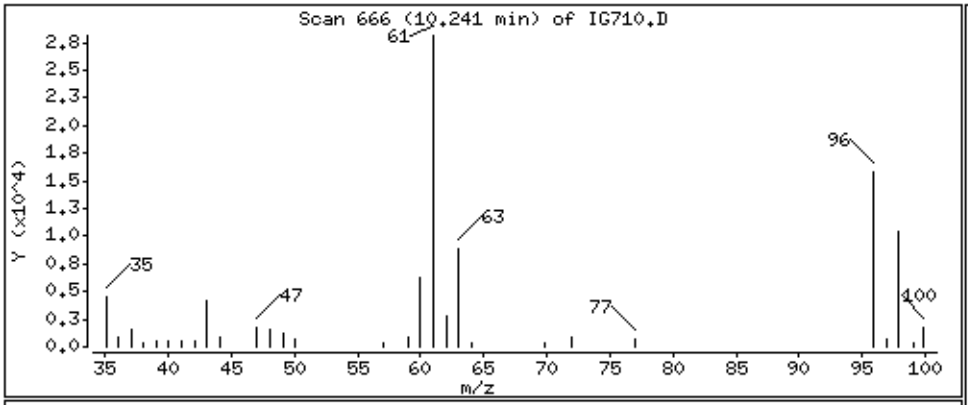
Client ID: DYNA P&T | Instrument: MSVOA09.i

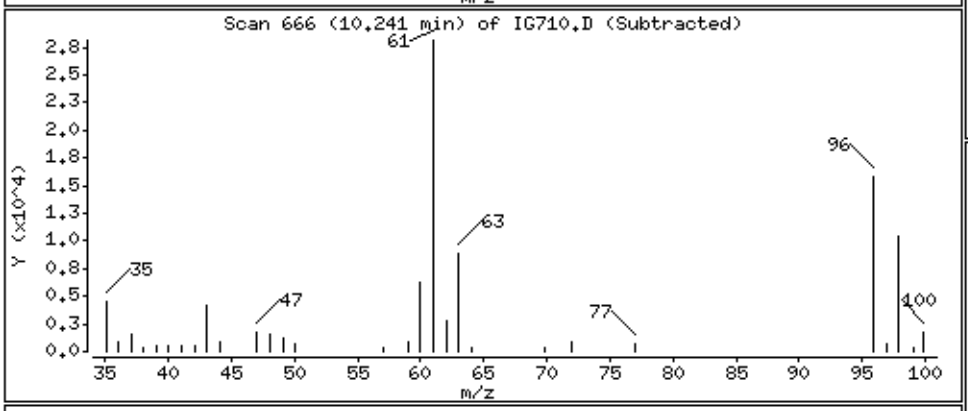
Sample Info: ICAL,s=ICAL,2.5x

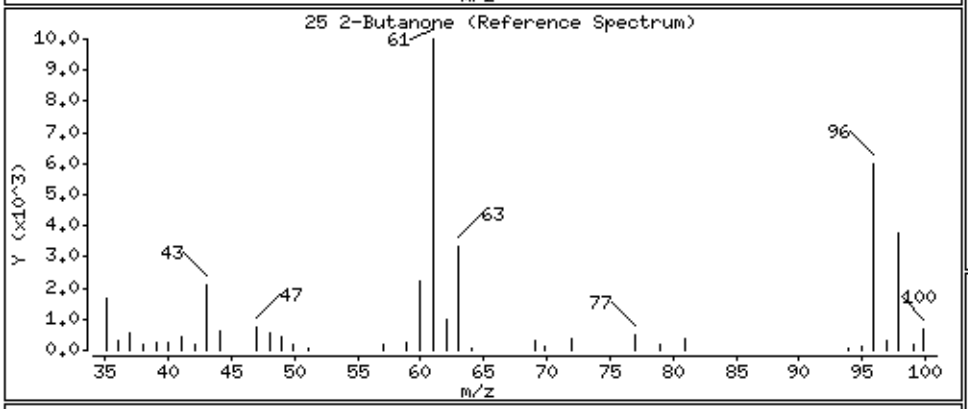
Purge Volume: 5.0 | Operator: VOC

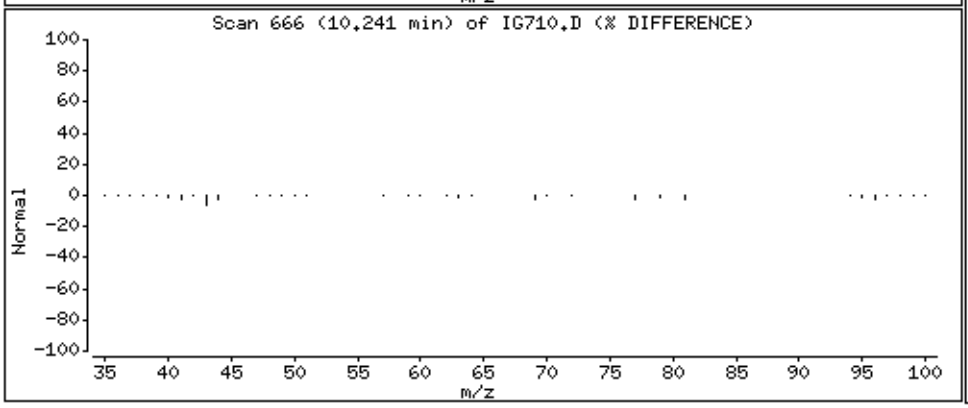
Column phase: RTx Volatiles | Column diameter: 0.25

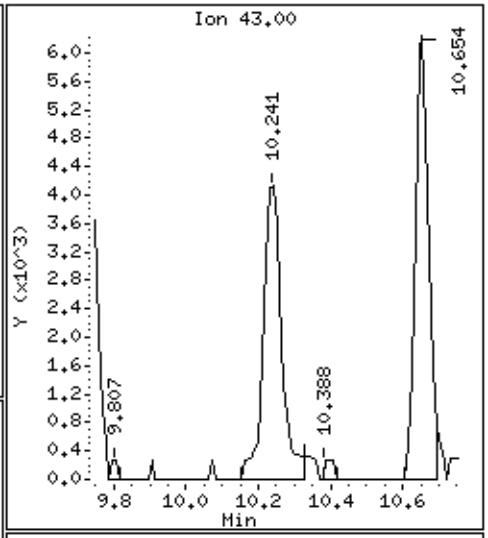
25 2-Butanone | Concentration: 5.4096 UG/L

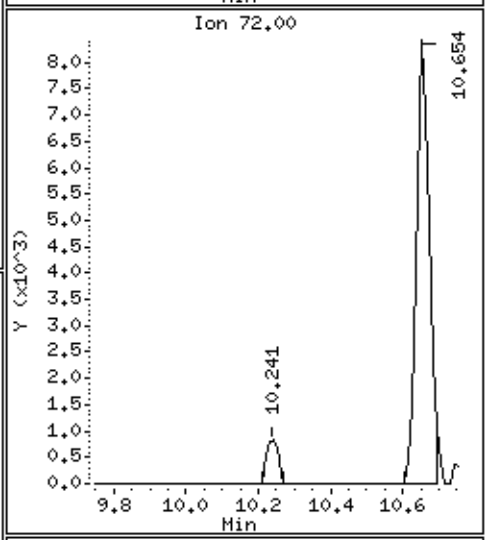


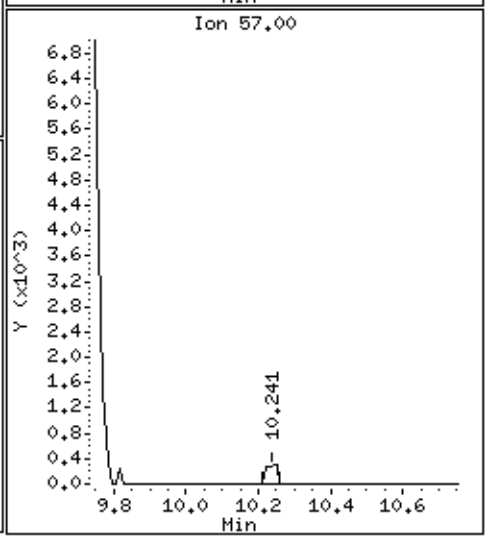






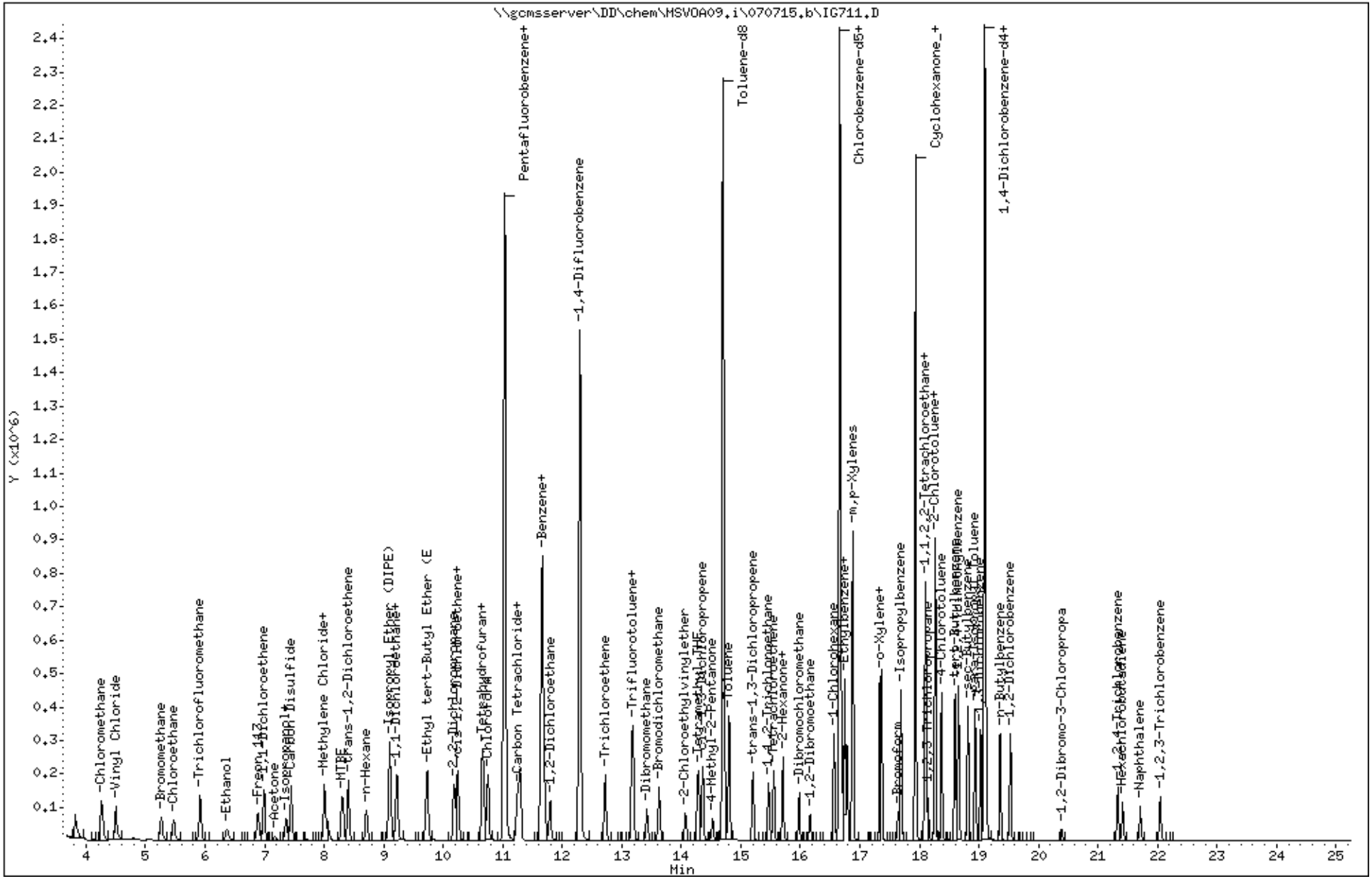






Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D
Date : 07-JUL-2015 16:03
Client ID: DYNA P&T
Sample Info: ICAL,s=ICAL,5x
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D
Report Date: 08-Jul-2015 13:15

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 16:03 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,s=ICAL,5x
Misc Info : 10ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:15 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 16:03 Cal File: IG711.D
Als bottle: 5 Calibration Sample, Level: 5
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.818	3.824	(0.346)	116214	10.0000	9.2747
2 Chloromethane	50	4.262	4.268	(0.386)	195653	10.0000	11.7483
3 Vinyl Chloride	62	4.498	4.504	(0.408)	146277	10.0000	10.3175
4 Bromomethane	94	5.257	5.263	(0.477)	69392	10.0000	12.0171
5 Chloroethane	64	5.474	5.470	(0.496)	84071	10.0000	10.6351
6 Trichlorofluoromethane	101	5.917	5.923	(0.536)	140566	10.0000	9.8279
7 Ethanol	45	6.371	6.366	(0.577)	65242	1000.00	1037.9412(A)
8 Freon 113	101	6.883	6.889	(0.624)	55568	10.0000	8.3241
9 1,1-Dichloroethene	96	6.991	6.997	(0.634)	64571	10.0000	9.1669
10 Acetone	43	7.169	7.165	(0.650)	22215	10.0000	10.5402
11 Isopropanol	45	7.356	7.352	(0.667)	34611	100.000	103.5629(A)
12 Iodomethane	142	7.366	7.362	(0.668)	74647	10.0000	12.1821(A)
13 Carbon Disulfide	76	7.445	7.450	(0.675)	279229	10.0000	9.2435
14 Methylene Chloride	84	8.007	8.002	(0.726)	92661	10.0000	10.3253
15 tert-Butyl Alcohol (TBA)	59	8.076	8.071	(0.732)	44214	100.000	104.3782(A)
16 MTBE	73	8.312	8.308	(0.753)	167781	10.0000	10.2456
17 trans-1,2-Dichloroethene	96	8.411	8.406	(0.762)	78903	10.0000	9.6912
18 n-Hexane	57	8.716	8.712	(0.790)	51468	10.0000	8.8680(A)
19 Isopropyl Ether (DIPE)	45	9.100	9.096	(0.825)	420741	10.0000	10.3486(A)
20 Vinyl Acetate	43	9.209	9.214	(0.835)	149821	10.0000	10.4875(M)
21 1,1-Dichloroethane	63	9.229	9.224	(0.837)	188664	10.0000	10.2335
22 Ethyl tert-Butyl Ether (ETBE)	59	9.731	9.727	(0.882)	281527	10.0000	10.3533(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D
Report Date: 08-Jul-2015 13:15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.185	10.190	(0.923)	128685	10.0000	9.8527
	24 cis-1,2-Dichloroethene	96	10.244	10.239	(0.929)	89583	10.0000	9.8992
	25 2-Butanone	43	10.234	10.230	(0.928)	32704	10.0000	11.1069(M)
	26 Tetrahydrofuran	42	10.648	10.653	(0.965)	166541	100.000	105.7411(A)
	27 Bromochloromethane	128	10.677	10.673	(0.968)	41977	10.0000	10.0279
	28 Chloroform	83	10.746	10.752	(0.974)	175657	10.0000	10.2496
*	29 Pentafluorobenzene	168	11.032	11.038	(1.000)	886796	50.0000	
	30 Dibromofluoromethane	113	11.042	11.038	(1.001)	589834	50.0000	51.2776
	31 1,1,1-Trichloroethane	97	11.022	11.028	(0.999)	128869	10.0000	9.8412
	32 Carbon Tetrachloride	117	11.249	11.255	(0.915)	107120	10.0000	9.3931
	33 1,1-Dichloropropene	75	11.288	11.294	(0.918)	116185	10.0000	9.3151
	34 Benzene	78	11.643	11.649	(0.947)	325799	10.0000	10.0363
	35 1,2-Dichloroethane-d4	65	11.663	11.668	(0.949)	530827	50.0000	51.7459
	36 Methyl tert-Amyl Ether (TAME)	73	11.692	11.688	(0.951)	203773	10.0000	10.1475(A)
	37 1,2-Dichloroethane	62	11.801	11.797	(0.960)	122823	10.0000	10.8393
*	38 1,4-Difluorobenzene	114	12.294	12.299	(1.000)	1402087	50.0000	
	39 Trichloroethene	95	12.717	12.723	(1.034)	81281	10.0000	9.3982
	40 Trifluorotoluene	146	13.171	13.176	(1.071)	85833	10.0000	8.6074(A)
	41 1,2-Dichloropropane	63	13.190	13.186	(1.073)	103132	10.0000	10.1330
	42 Dibromomethane	93	13.417	13.423	(1.091)	51310	10.0000	10.2581
	43 Bromodichloromethane	83	13.624	13.630	(1.108)	125755	10.0000	10.3606
	44 2-Chloroethylvinylether	63	14.067	14.073	(1.144)	40172	10.0000	9.9157
	45 Tetramethyl THF	43	14.284	14.280	(1.162)	201092	10.0000	10.6303(A)
	46 cis-1,3-Dichloropropene	75	14.363	14.359	(1.168)	136530	10.0000	10.2295
	47 4-Methyl-2-Pentanone	43	14.521	14.517	(1.181)	70733	10.0000	10.6401
	48 Toluene-d8	98	14.698	14.704	(0.882)	1685777	50.0000	50.9404
	49 Toluene	92	14.797	14.802	(0.888)	171322	10.0000	9.9836
	50 trans-1,3-Dichloropropene	75	15.201	15.197	(0.912)	108560	10.0000	10.1568
	51 1,1,2-Trichloroethane	85	15.467	15.463	(0.928)	32021	10.0000	10.2603
	52 Tetrachloroethene	166	15.556	15.551	(0.934)	61169	10.0000	8.7564
	53 2-Hexanone	43	15.703	15.699	(0.943)	48310	10.0000	10.3460
	54 1,3-Dichloropropane	76	15.703	15.709	(0.943)	99109	10.0000	9.9863
	55 Dibromochloromethane	129	15.979	15.975	(0.959)	71821	10.0000	9.7386
	56 1,2-Dibromoethane	107	16.167	16.162	(0.970)	56284	10.0000	10.0241
	57 1-Chlorohexane	91	16.571	16.566	(0.995)	91238	10.0000	9.2437
*	58 Chlorobenzene-d5	117	16.659	16.665	(1.000)	1207895	50.0000	
	59 Chlorobenzene	112	16.699	16.695	(1.002)	193794	10.0000	9.6119
	60 Ethylbenzene	91	16.748	16.744	(1.005)	328685	10.0000	9.7275
	61 1,1,1,2-Tetrachloroethane	131	16.788	16.783	(1.008)	74714	10.0000	9.9855
	62 m,p-Xylenes	106	16.876	16.882	(1.013)	228429	20.0000	19.6296
	63 o-Xylene	106	17.339	17.335	(1.041)	111391	10.0000	9.7586
	64 Styrene	104	17.359	17.365	(1.042)	195494	10.0000	10.6293
	65 Bromoform	173	17.645	17.641	(1.059)	36484	10.0000	9.4563
	66 Isopropylbenzene	105	17.694	17.690	(0.927)	284687	10.0000	9.6123
	67 Cyclohexanone_	55	17.931	17.936	(0.939)	2583	10.0000	2.6827(A)
	68 Bromofluorobenzene	95	17.931	17.936	(0.939)	623922	50.0000	49.3632
	69 1,1,2,2-Tetrachloroethane	83	18.079	18.074	(0.947)	61510	10.0000	9.6001
	70 Propylbenzene	91	18.108	18.104	(0.948)	336107	10.0000	9.1801
	71 Bromobenzene	156	18.108	18.104	(0.948)	76741	10.0000	9.4213
	72 1,2,3-Trichloropropane	110	18.148	18.153	(0.950)	14515	10.0000	9.8792
	73 2-Chlorotoluene	91	18.266	18.262	(0.957)	253102	10.0000	10.0517
	74 1,3,5-Trimethylbenzene	105	18.266	18.271	(0.957)	237875	10.0000	9.9035
	75 4-Chlorotoluene	91	18.374	18.370	(0.962)	224027	10.0000	9.7019
	76 tert-Butylbenzene	119	18.601	18.597	(0.974)	188778	10.0000	9.3927

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D
Report Date: 08-Jul-2015 13:15

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	77 1,2,4-Trimethylbenzene	105	18.660	18.656	(0.977)	234441	10.0000	10.5644
	78 sec-Butylbenzene	105	18.818	18.813	(0.986)	276463	10.0000	9.4229
	79 para-Isopropyl Toluene	119	18.936	18.942	(0.992)	206795	10.0000	9.4182
	80 1,3-Dichlorobenzene	146	19.034	19.030	(0.997)	126499	10.0000	9.2177
*	81 1,4-Dichlorobenzene-d4	152	19.094	19.099	(1.000)	625002	50.0000	
	82 1,4-Dichlorobenzene	146	19.123	19.129	(1.002)	135161	10.0000	9.5269
	83 n-Butylbenzene	91	19.360	19.355	(1.014)	194552	10.0000	9.4993
	84 1,2-Dichlorobenzene	146	19.527	19.533	(1.023)	116092	10.0000	9.0977
	85 1,2-Dibromo-3-Chloropropane	75	20.385	20.390	(1.068)	9497	10.0000	9.9976
	86 1,2,4-Trichlorobenzene	180	21.331	21.336	(1.117)	54589	10.0000	9.3495
	87 Hexachlorobutadiene	225	21.419	21.415	(1.122)	26283	10.0000	8.8495
	88 Naphthalene	128	21.705	21.711	(1.137)	94281	10.0000	9.9621
	89 1,2,3-Trichlorobenzene	180	22.050	22.046	(1.155)	49769	10.0000	9.8730

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.
M - Compound response manually integrated.

[Vinyl Acetate; 10.00 ug/L; response=149821; MI]

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D

Date : 07-JUL-2015 16:03

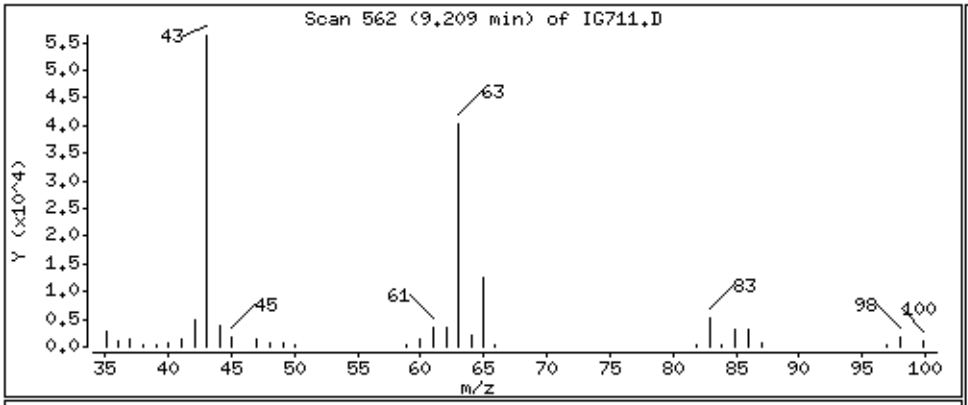
Client ID: DYNA P&T | Instrument: MSVOA09.i

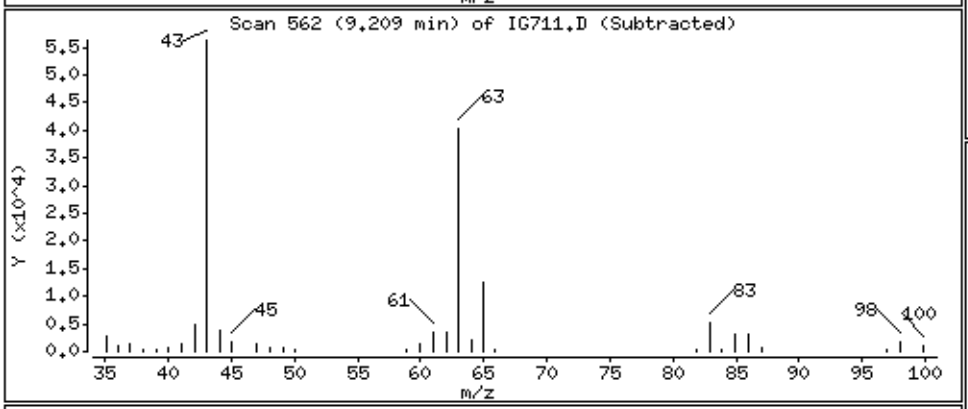
Sample Info: ICAL,s=ICAL,5x

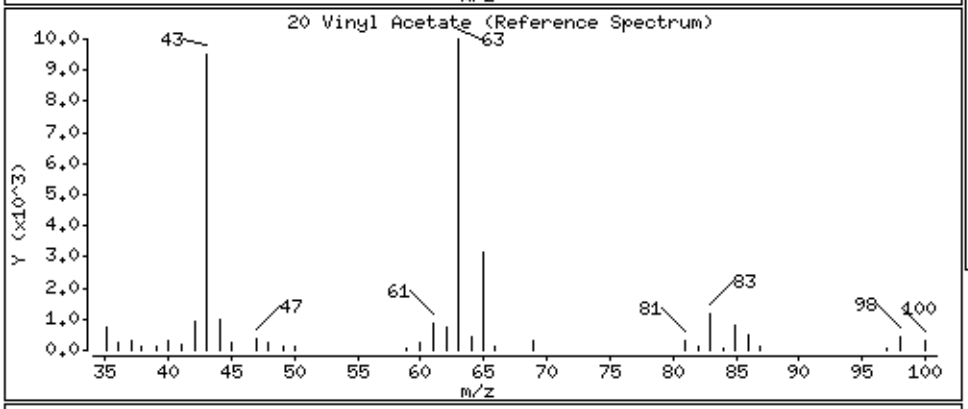
Purge Volume: 5.0 | Operator: VOC

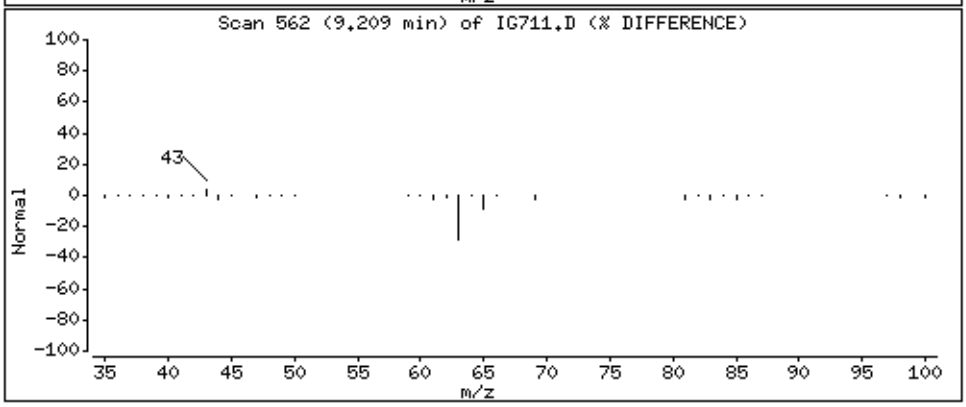
Column phase: RTx Volatiles | Column diameter: 0.25

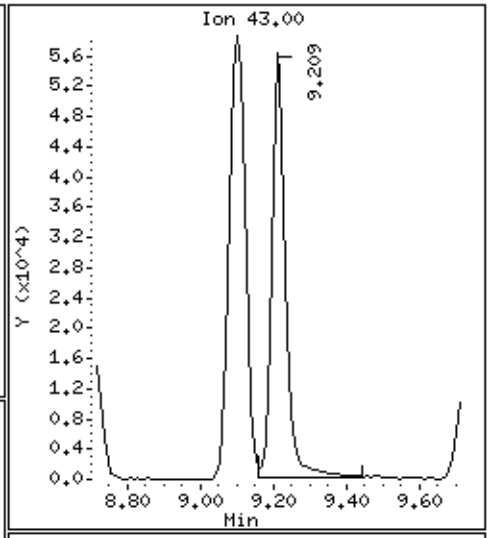
20 Vinyl Acetate | Concentration: 10.4875 UG/L

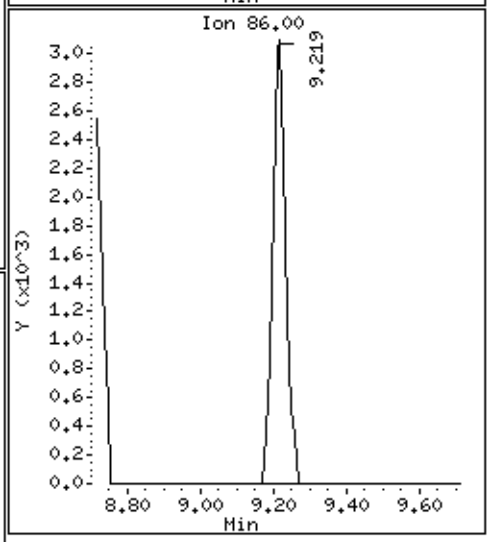












[Vinyl Acetate; before version]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG711.D

Date : 07-JUL-2015 16:03

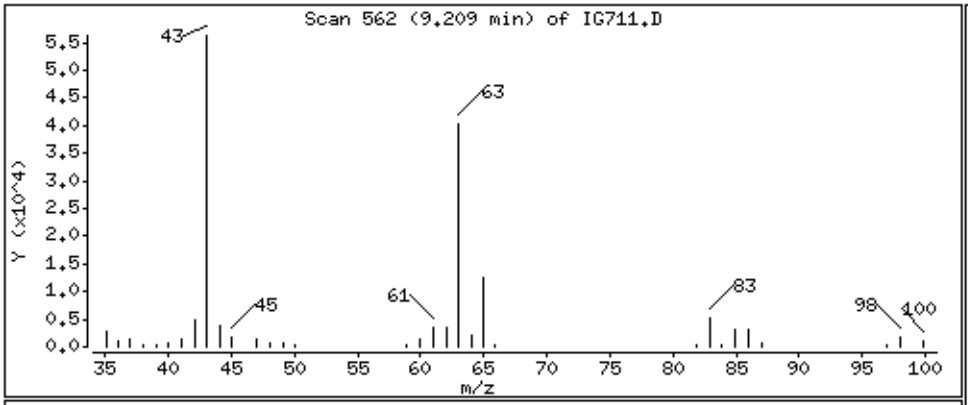
Client ID: DYNA P&T | Instrument: MSVOA09.i

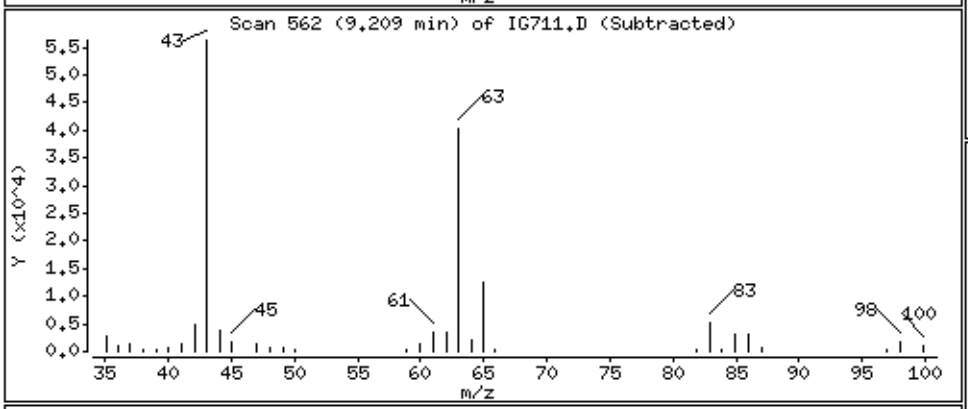
Sample Info: ICAL,s=ICAL,5x

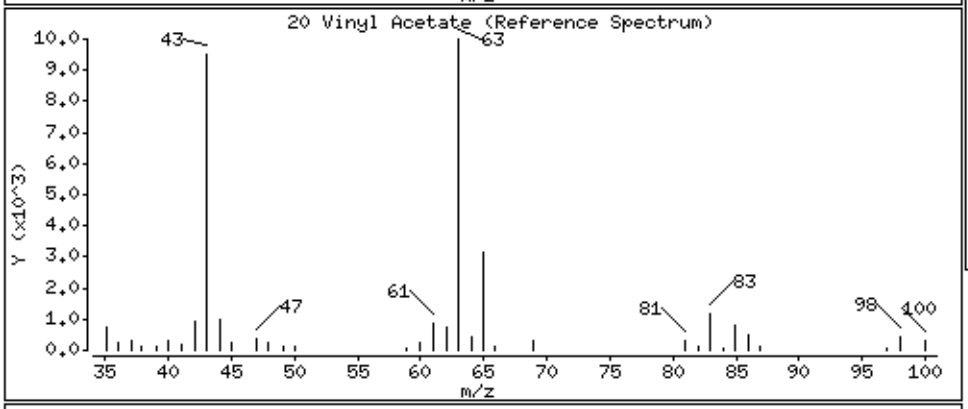
Purge Volume: 5.0 | Operator: VOC

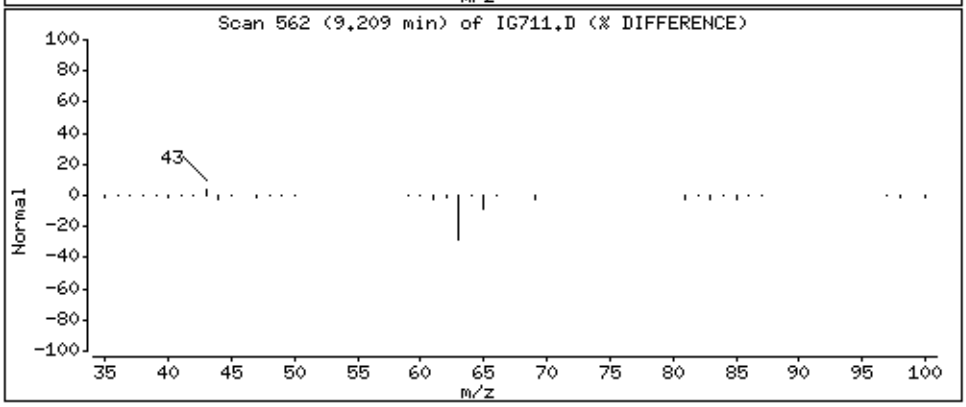
Column phase: RTx Volatiles | Column diameter: 0.25

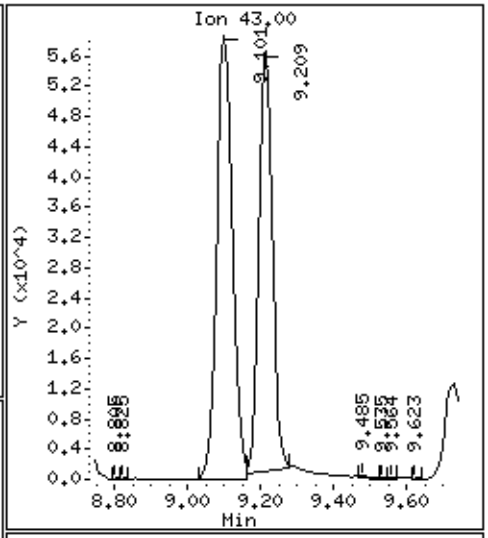
20 Vinyl Acetate | Concentration: 10.0942 UG/L

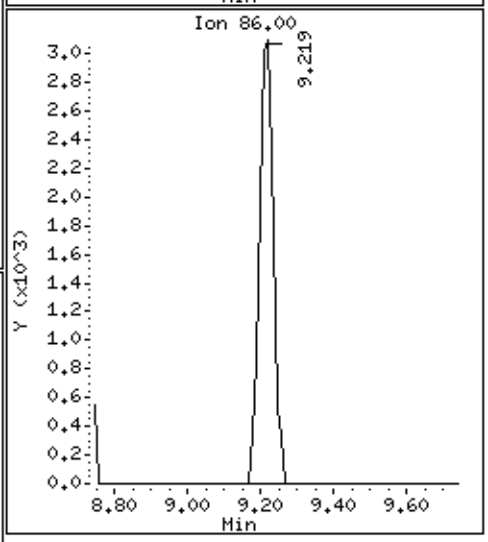












[2-Butanone; 10.00 ug/L; response=32704; MI]

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG711.D

Date : 07-JUL-2015 16:03

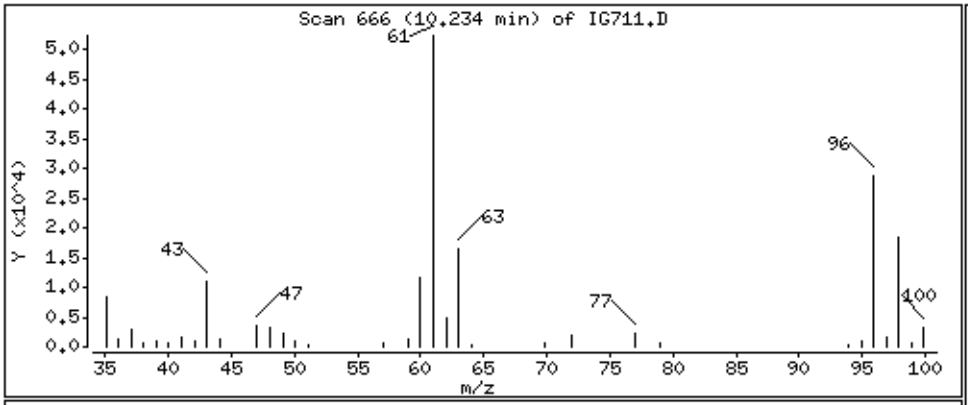
Client ID: DYNA P&T | Instrument: MSVOA09.i

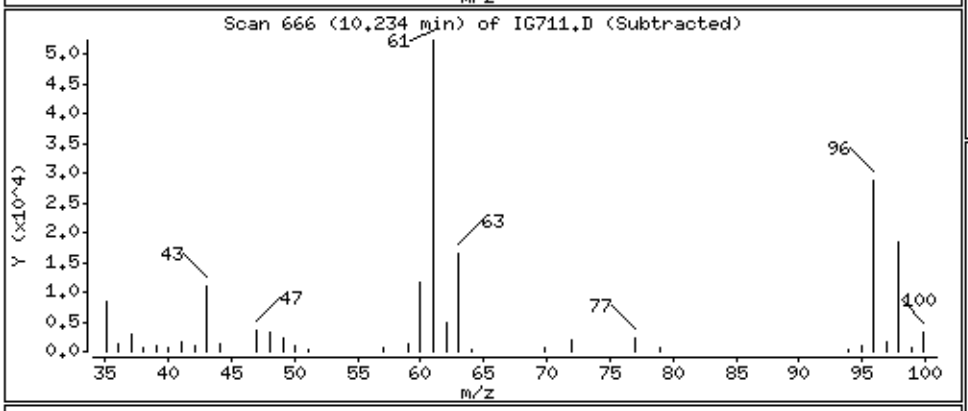
Sample Info: ICAL,s=ICAL,5x

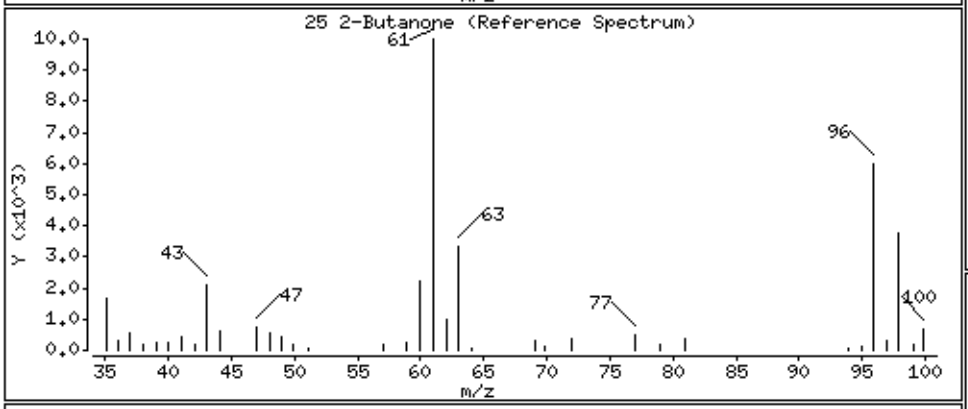
Purge Volume: 5.0 | Operator: VOC

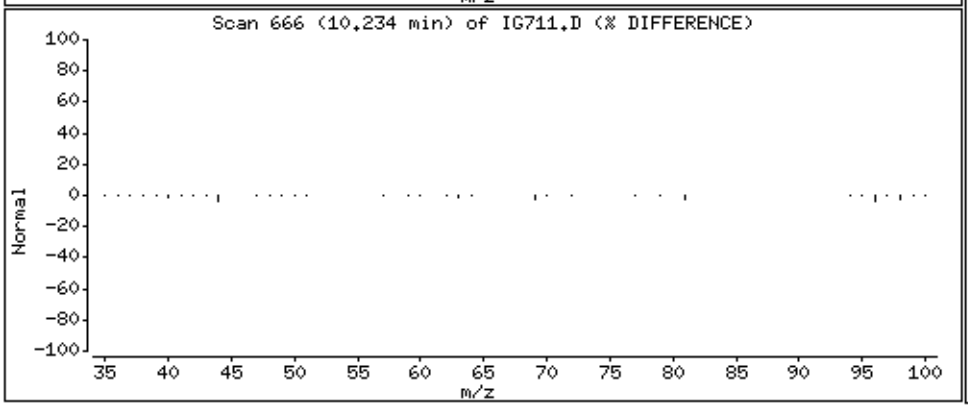
Column phase: RTx Volatiles | Column diameter: 0.25

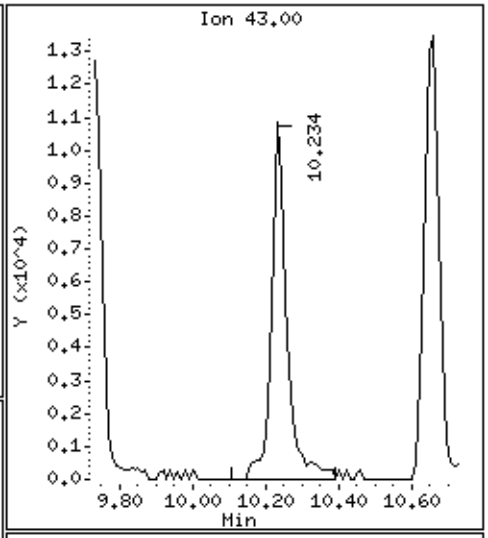
25 2-Butanone | Concentration: 11.1069 UG/L

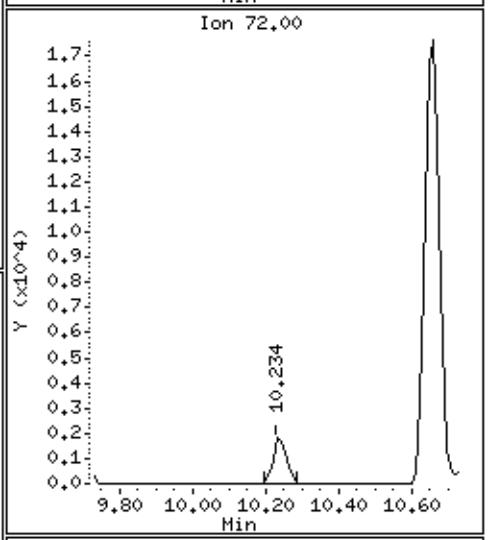


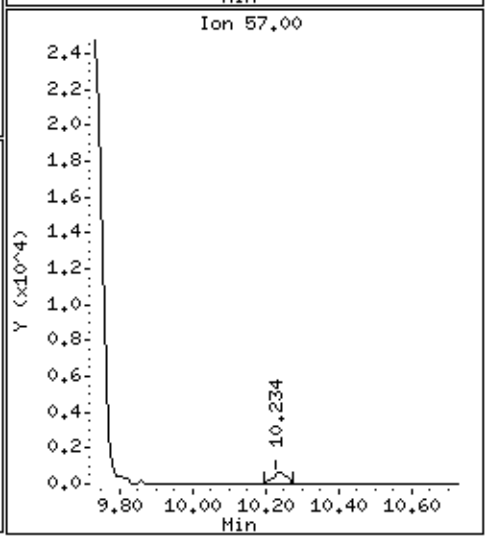












[2-Butanone; before version]

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\070715.b\IG711.D

Date : 07-JUL-2015 16:03

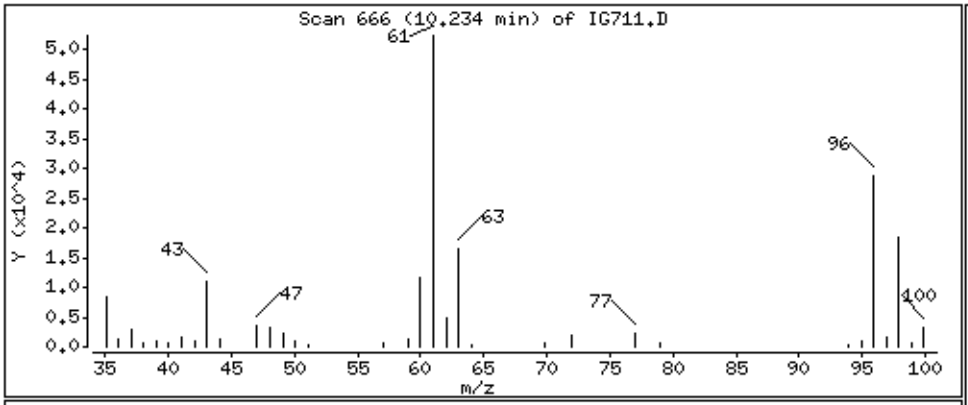
Client ID: DYNA P&T | Instrument: MSVOA09.i

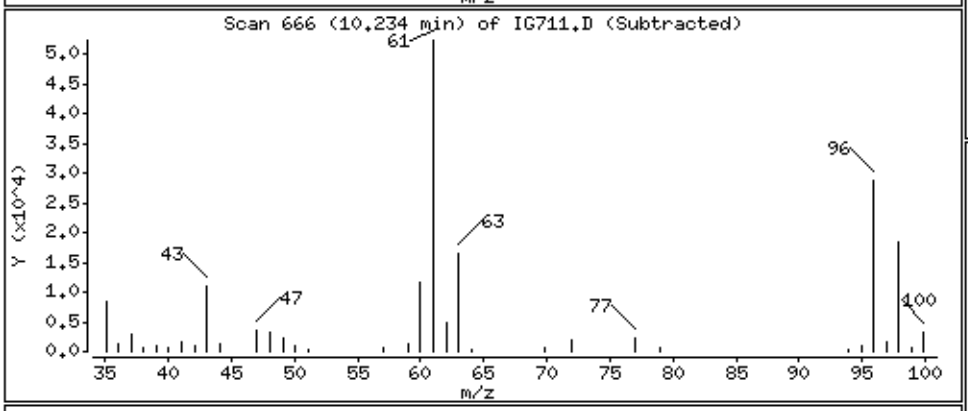
Sample Info: ICAL,s=ICAL,5x

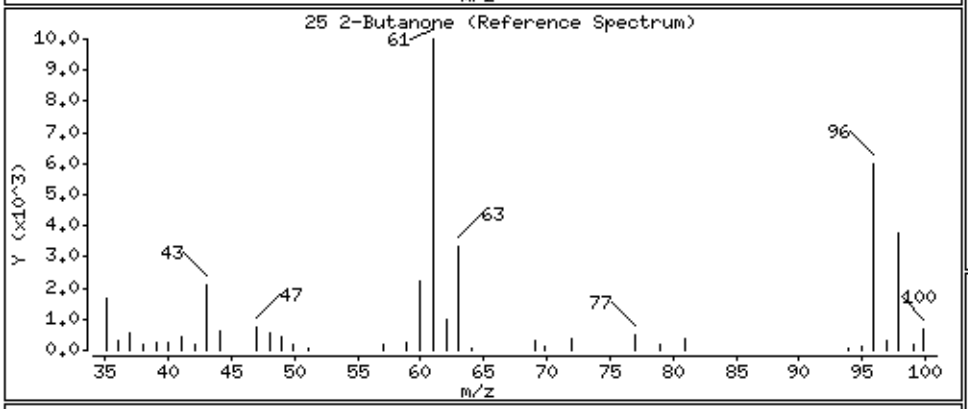
Purge Volume: 5.0 | Operator: VOC

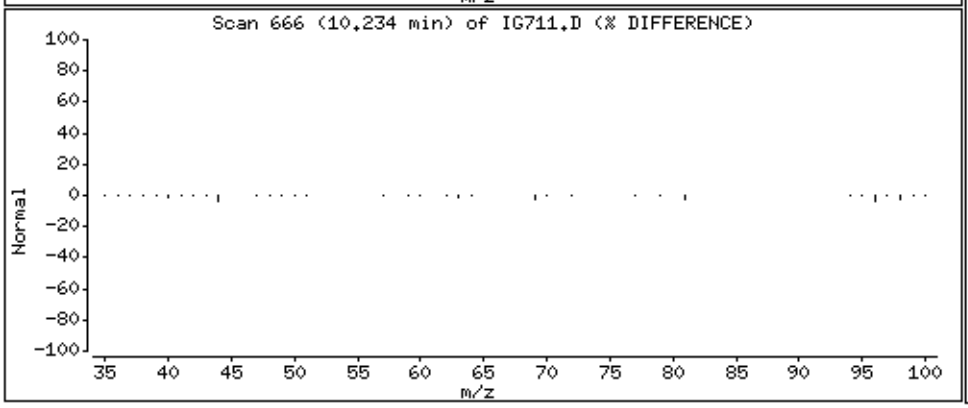
Column phase: RTx Volatiles | Column diameter: 0.25

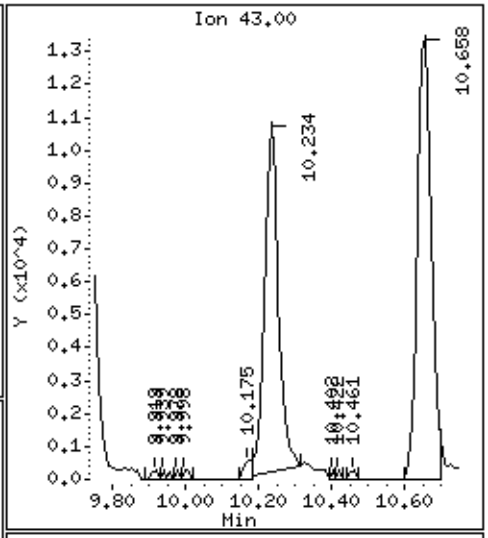
25 2-Butanone | Concentration: 9.9237 UG/L

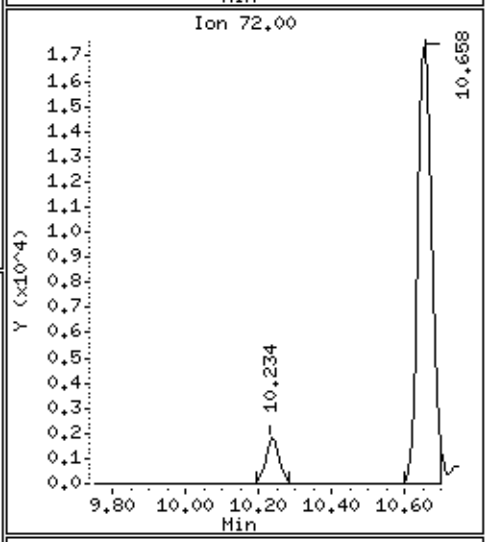


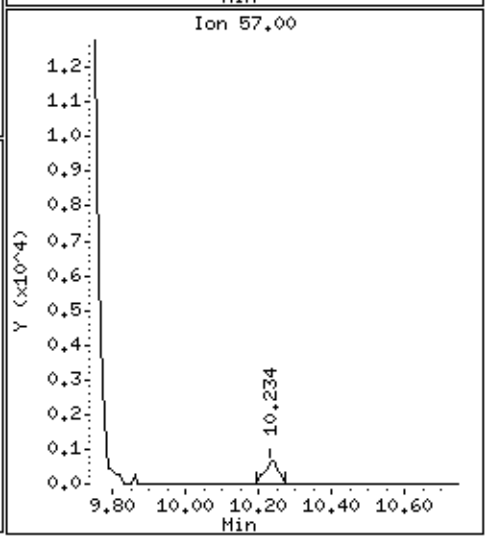






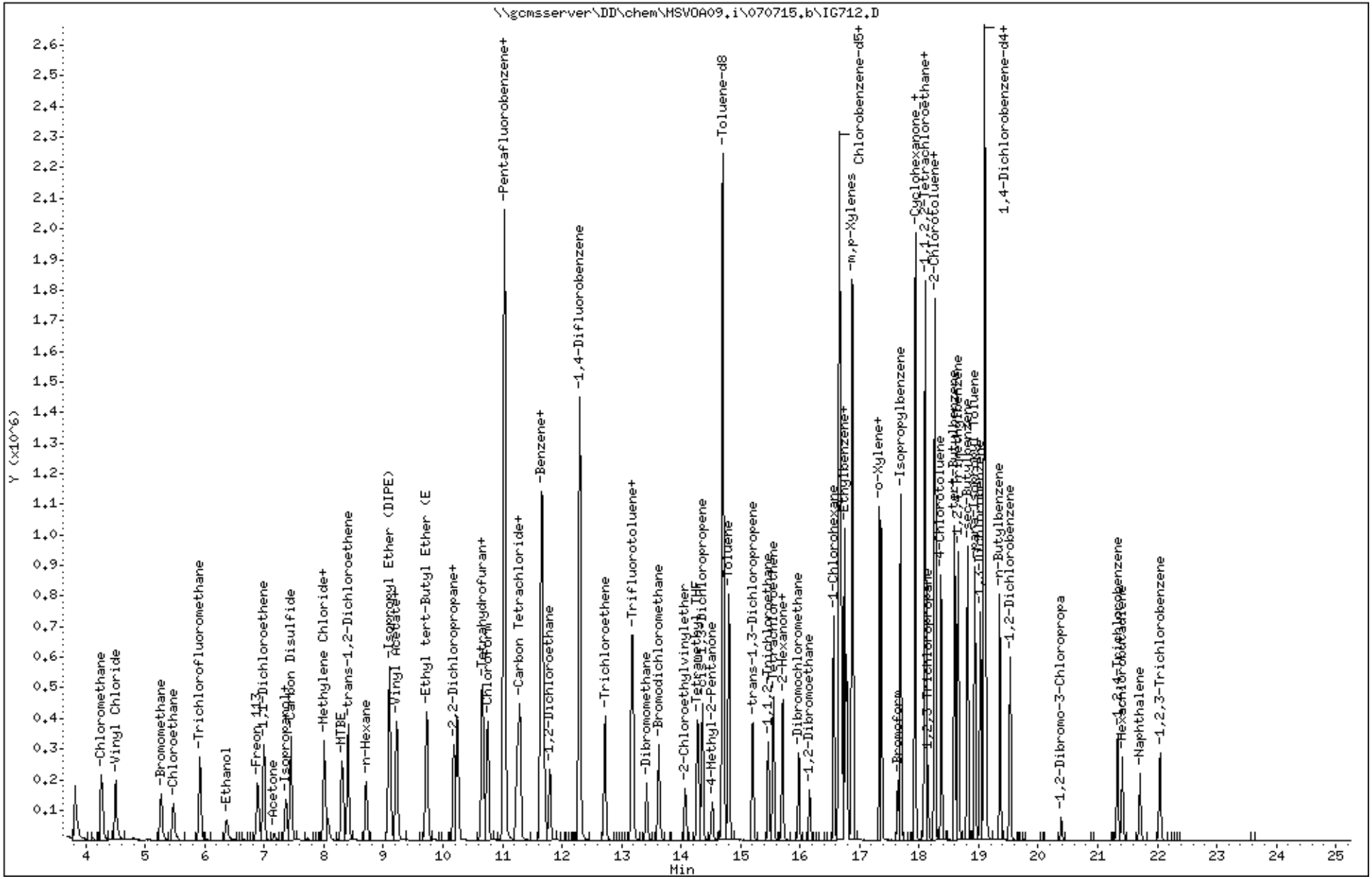






Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG712.D
Date : 07-JUL-2015 16:37
Client ID: DYNA P&T
Sample Info: ICAL,=ICAL,10x
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG712.D
Report Date: 08-Jul-2015 13:16

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG712.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 16:37 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,=ICAL,10x
Misc Info : 20ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:16 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 16:37 Cal File: IG712.D
Als bottle: 6 Calibration Sample, Level: 6
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.823	3.824	(0.346)	279331	20.0000	21.4036
2 Chloromethane	50	4.267	4.268	(0.387)	366281	20.0000	21.2360
3 Vinyl Chloride	62	4.503	4.504	(0.408)	297161	20.0000	20.4800
4 Bromomethane	94	5.262	5.263	(0.477)	147003	20.0000	23.3933
5 Chloroethane	64	5.469	5.470	(0.496)	161871	20.0000	20.2036
6 Trichlorofluoromethane	101	5.922	5.923	(0.537)	302943	20.0000	20.6809
7 Ethanol	45	6.366	6.366	(0.577)	132876	2000.00	2101.4273(A)
8 Freon 113	101	6.888	6.889	(0.624)	129200	20.0000	19.1558
9 1,1-Dichloroethene	96	6.997	6.997	(0.634)	135706	20.0000	19.1503
10 Acetone	43	7.164	7.165	(0.649)	41776	20.0000	19.6167
11 Isopropanol	45	7.351	7.352	(0.666)	66047	200.000	197.3398(A)
12 Iodomethane	142	7.361	7.362	(0.667)	170689	20.0000	25.1068(A)
13 Carbon Disulfide	76	7.450	7.450	(0.675)	589625	20.0000	19.3957
14 Methylene Chloride	84	8.002	8.002	(0.725)	181280	20.0000	20.0254
15 tert-Butyl Alcohol (TBA)	59	8.071	8.071	(0.731)	87340	200.000	204.7586(A)
16 MTBE	73	8.307	8.308	(0.753)	325652	20.0000	19.8161
17 trans-1,2-Dichloroethene	96	8.406	8.406	(0.762)	162344	20.0000	19.8281
18 n-Hexane	57	8.711	8.712	(0.789)	105692	20.0000	18.4823(A)
19 Isopropyl Ether (DIPE)	45	9.106	9.096	(0.825)	817355	20.0000	19.9582(A)
20 Vinyl Acetate	43	9.214	9.214	(0.835)	289246	20.0000	20.0299
21 1,1-Dichloroethane	63	9.224	9.224	(0.836)	368272	20.0000	19.8090
22 Ethyl tert-Butyl Ether (ETBE)	59	9.726	9.727	(0.881)	557137	20.0000	20.3486(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG712.D
Report Date: 08-Jul-2015 13:16

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
23	2,2-Dichloropropane	77	10.190	10.190	(0.923)	254192	20.0000	19.2431
24	cis-1,2-Dichloroethene	96	10.249	10.239	(0.929)	182428	20.0000	20.0934
25	2-Butanone	43	10.229	10.230	(0.927)	61234	20.0000	20.6155
26	Tetrahydrofuran	42	10.653	10.653	(0.965)	308544	200.000	196.2194(A)
27	Bromochloromethane	128	10.673	10.673	(0.967)	82004	20.0000	19.5333
28	Chloroform	83	10.751	10.752	(0.974)	344282	20.0000	19.8845
* 29	Pentafluorobenzene	168	11.037	11.038	(1.000)	890060	50.0000	
30	Dibromofluoromethane	113	11.037	11.038	(1.000)	594341	50.0000	51.1265
31	1,1,1-Trichloroethane	97	11.027	11.028	(0.999)	268357	20.0000	20.1239
32	Carbon Tetrachloride	117	11.254	11.255	(0.915)	227452	20.0000	19.8032
33	1,1-Dichloropropene	75	11.293	11.294	(0.918)	242909	20.0000	19.3785
34	Benzene	78	11.648	11.649	(0.947)	659610	20.0000	20.1669
35	1,2-Dichloroethane-d4	65	11.668	11.668	(0.949)	536377	50.0000	52.0934
36	Methyl tert-Amyl Ether (TAME)	73	11.688	11.688	(0.950)	410028	20.0000	20.3160(A)
37	1,2-Dichloroethane	62	11.796	11.797	(0.959)	236683	20.0000	20.7872
* 38	1,4-Difluorobenzene	114	12.299	12.299	(1.000)	1401293	50.0000	
39	Trichloroethene	95	12.722	12.723	(1.034)	170230	20.0000	19.6432
40	Trifluorotoluene	146	13.176	13.176	(1.071)	186984	20.0000	18.7744(A)
41	1,2-Dichloropropane	63	13.186	13.186	(1.072)	204401	20.0000	20.0220
42	Dibromomethane	93	13.422	13.423	(1.091)	99825	20.0000	20.0140
43	Bromodichloromethane	83	13.629	13.630	(1.108)	246932	20.0000	20.3211
44	2-Chloroethylvinylether	63	14.073	14.073	(1.144)	84763	20.0000	21.0069
45	Tetramethyl THF	43	14.280	14.280	(1.161)	389895	20.0000	20.4350(A)
46	cis-1,3-Dichloropropene	75	14.358	14.359	(1.167)	272699	20.0000	20.4137
47	4-Methyl-2-Pentanone	43	14.526	14.517	(1.181)	134359	20.0000	20.2369
48	Toluene-d8	98	14.703	14.704	(0.882)	1700421	50.0000	50.3312
49	Toluene	92	14.802	14.802	(0.888)	362682	20.0000	20.7374
50	trans-1,3-Dichloropropene	75	15.206	15.197	(0.912)	219468	20.0000	20.1801
51	1,1,2-Trichloroethane	85	15.462	15.463	(0.928)	62612	20.0000	19.8945
52	Tetrachloroethene	166	15.551	15.551	(0.933)	133230	20.0000	18.7675
53	2-Hexanone	43	15.699	15.699	(0.942)	95022	20.0000	20.1124
54	1,3-Dichloropropane	76	15.709	15.709	(0.943)	197031	20.0000	19.5926
55	Dibromochloromethane	129	15.975	15.975	(0.959)	149252	20.0000	20.0715
56	1,2-Dibromoethane	107	16.162	16.162	(0.970)	112090	20.0000	19.7117
57	1-Chlorohexane	91	16.566	16.566	(0.994)	194985	20.0000	19.6362
* 58	Chlorobenzene-d5	117	16.665	16.665	(1.000)	1232401	50.0000	
59	Chlorobenzene	112	16.694	16.695	(1.002)	398912	20.0000	19.4507
60	Ethylbenzene	91	16.743	16.744	(1.005)	692789	20.0000	20.0601
61	1,1,1,2-Tetrachloroethane	131	16.783	16.783	(1.007)	151491	20.0000	19.8921
62	m,p-Xylenes	106	16.881	16.882	(1.013)	516921	40.0000	43.4373
63	o-Xylene	106	17.335	17.335	(1.040)	242141	20.0000	20.7913
64	Styrene	104	17.364	17.365	(1.042)	434779	20.0000	23.0857
65	Bromoform	173	17.640	17.641	(1.059)	79087	20.0000	20.3295
66	Isopropylbenzene	105	17.689	17.690	(0.926)	645479	20.0000	20.8048
67	Cyclohexanone_	55	17.936	17.936	(0.939)	2350	20.0000	2.3418(A)
68	Bromofluorobenzene	95	17.936	17.936	(0.939)	637385	50.0000	48.5020
69	1,1,2,2-Tetrachloroethane	83	18.074	18.074	(0.946)	127182	20.0000	19.2292
70	Propylbenzene	91	18.103	18.104	(0.948)	787811	20.0000	20.4725
71	Bromobenzene	156	18.103	18.104	(0.948)	169030	20.0000	20.0379
72	1,2,3-Trichloropropane	110	18.153	18.153	(0.950)	30053	20.0000	19.8371
73	2-Chlorotoluene	91	18.261	18.262	(0.956)	529970	20.0000	20.1789
74	1,3,5-Trimethylbenzene	105	18.271	18.271	(0.957)	503300	20.0000	20.0465
75	4-Chlorotoluene	91	18.369	18.370	(0.962)	464557	20.0000	19.3070
76	tert-Butylbenzene	119	18.596	18.597	(0.974)	426714	20.0000	20.2462

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG712.D
Report Date: 08-Jul-2015 13:16

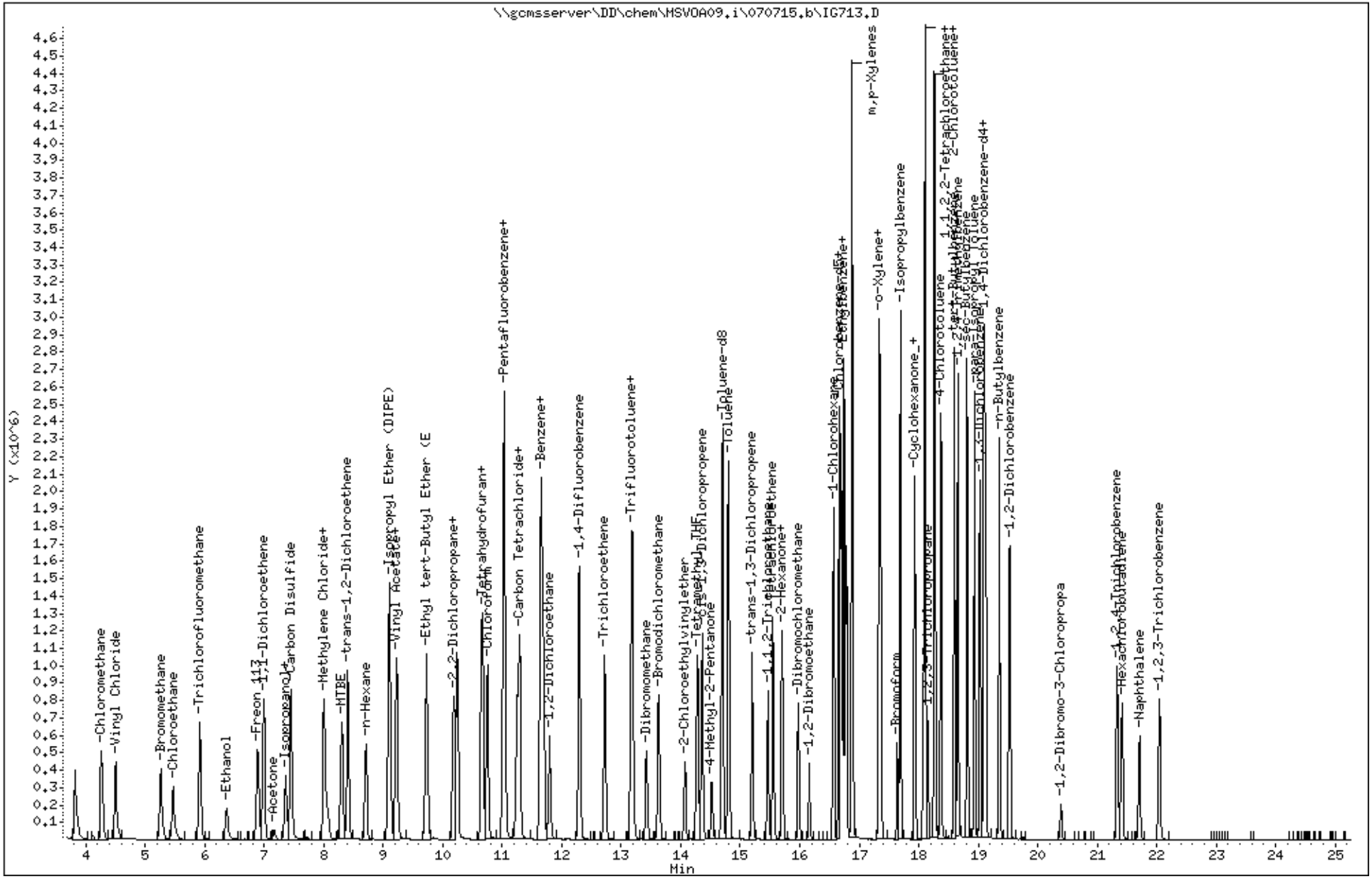
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	77 1,2,4-Trimethylbenzene	105	18.655	18.656	(0.977)	491139	20.0000	21.0844
	78 sec-Butylbenzene	105	18.813	18.813	(0.985)	633943	20.0000	20.5586
	79 para-Isopropyl Toluene	119	18.941	18.942	(0.992)	488064	20.0000	20.9373
	80 1,3-Dichlorobenzene	146	19.030	19.030	(0.996)	272767	20.0000	19.0956
*	81 1,4-Dichlorobenzene-d4	152	19.099	19.099	(1.000)	653033	50.0000	
	82 1,4-Dichlorobenzene	146	19.128	19.129	(1.002)	290303	20.0000	19.5957
	83 n-Butylbenzene	91	19.355	19.355	(1.013)	438081	20.0000	19.9779
	84 1,2-Dichlorobenzene	146	19.523	19.533	(1.022)	237409	20.0000	18.0052
	85 1,2-Dibromo-3-Chloropropane	75	20.390	20.390	(1.068)	20824	20.0000	21.1625
	86 1,2,4-Trichlorobenzene	180	21.336	21.336	(1.117)	123419	20.0000	19.8726
	87 Hexachlorobutadiene	225	21.415	21.415	(1.121)	60921	20.0000	19.3530
	88 Naphthalene	128	21.710	21.711	(1.137)	207477	20.0000	20.5948
	89 1,2,3-Trichlorobenzene	180	22.045	22.046	(1.154)	109380	20.0000	20.3660

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG713.D
Date : 07-JUL-2015 17:12
Client ID: DYNA P&T
Sample Info: ICAL,=ICAL,25x
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG713.D
Report Date: 08-Jul-2015 13:17

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG713.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 17:12 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,=ICAL,25x
Misc Info : 50ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:17 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 17:12 Cal File: IG713.D
Als bottle: 7 Calibration Sample, Level: 7
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.824	3.824	(0.346)	641122	50.0000	44.4596
2 Chloromethane	50	4.267	4.268	(0.387)	878986	50.0000	49.2935
3 Vinyl Chloride	62	4.504	4.504	(0.408)	692335	50.0000	43.0007
4 Bromomethane	94	5.263	5.263	(0.477)	427214	50.0000	57.8064
5 Chloroethane	64	5.470	5.470	(0.496)	414471	50.0000	46.4451
6 Trichlorofluoromethane	101	5.923	5.923	(0.537)	746490	50.0000	45.8839
7 Ethanol	45	6.366	6.366	(0.577)	337217	5000.00	4826.9393(A)
8 Freon 113	101	6.889	6.889	(0.624)	365097	50.0000	49.0400
9 1,1-Dichloroethene	96	6.997	6.997	(0.634)	373564	50.0000	47.6159
10 Acetone	43	7.165	7.165	(0.649)	99606	50.0000	42.4848
11 Isopropanol	45	7.352	7.352	(0.666)	165375	500.000	450.4356(A)
12 Iodomethane	142	7.362	7.362	(0.667)	501745	50.0000	61.2735(A)
13 Carbon Disulfide	76	7.450	7.450	(0.675)	1608252	50.0000	47.7914
14 Methylene Chloride	84	8.002	8.002	(0.725)	466608	50.0000	46.5065
15 tert-Butyl Alcohol (TBA)	59	8.071	8.071	(0.731)	221967	500.000	471.7955(A)
16 MTBE	73	8.308	8.308	(0.753)	857620	50.0000	47.0714
17 trans-1,2-Dichloroethene	96	8.406	8.406	(0.762)	431070	50.0000	47.5799
18 n-Hexane	57	8.712	8.712	(0.789)	307055	50.0000	50.0546(A)
19 Isopropyl Ether (DIPE)	45	9.096	9.096	(0.824)	2141428	50.0000	47.1546(A)
20 Vinyl Acetate	43	9.214	9.214	(0.835)	798435	50.0000	49.7685
21 1,1-Dichloroethane	63	9.224	9.224	(0.836)	973506	50.0000	47.0975
22 Ethyl tert-Butyl Ether (ETBE)	59	9.727	9.727	(0.881)	1425106	50.0000	46.7285(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG713.D
Report Date: 08-Jul-2015 13:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.190	10.190	(0.923)	683988	50.0000	46.6394
	24 cis-1,2-Dichloroethene	96	10.239	10.239	(0.928)	487607	50.0000	48.4471
	25 2-Butanone	43	10.230	10.230	(0.927)	150908	50.0000	45.8913
	26 Tetrahydrofuran	42	10.653	10.653	(0.965)	789077	500.000	454.6736(A)
	27 Bromochloromethane	128	10.673	10.673	(0.967)	227932	50.0000	48.9966
	28 Chloroform	83	10.752	10.752	(0.974)	909387	50.0000	47.2843
*	29 Pentafluorobenzene	168	11.038	11.038	(1.000)	987439	50.0000	
	30 Dibromofluoromethane	113	11.038	11.038	(1.000)	627343	50.0000	48.4498
	31 1,1,1-Trichloroethane	97	11.028	11.028	(0.999)	694180	50.0000	46.7172
	32 Carbon Tetrachloride	117	11.255	11.255	(0.915)	608946	50.0000	49.3478
	33 1,1-Dichloropropene	75	11.294	11.294	(0.918)	655512	50.0000	48.6766
	34 Benzene	78	11.649	11.649	(0.947)	1749431	50.0000	49.7194
	35 1,2-Dichloroethane-d4	65	11.668	11.668	(0.949)	509206	50.0000	46.3184
	36 Methyl tert-Amyl Ether (TAME)	73	11.688	11.688	(0.950)	1045421	50.0000	48.3860(A)
	37 1,2-Dichloroethane	62	11.797	11.797	(0.959)	596272	50.0000	48.5220
*	38 1,4-Difluorobenzene	114	12.299	12.299	(1.000)	1506110	50.0000	
	39 Trichloroethene	95	12.723	12.723	(1.034)	451474	50.0000	48.6290
	40 Trifluorotoluene	146	13.176	13.176	(1.071)	532389	50.0000	50.1189(A)
	41 1,2-Dichloropropane	63	13.186	13.186	(1.072)	538489	50.0000	49.0572
	42 Dibromomethane	93	13.423	13.423	(1.091)	267195	50.0000	49.7919
	43 Bromodichloromethane	83	13.630	13.630	(1.108)	655989	50.0000	50.0788
	44 2-Chloroethylvinylether	63	14.073	14.073	(1.144)	228300	50.0000	52.7478
	45 Tetramethyl THF	43	14.280	14.280	(1.161)	990534	50.0000	48.0016(A)
	46 cis-1,3-Dichloropropene	75	14.359	14.359	(1.167)	743227	50.0000	51.4913
	47 4-Methyl-2-Pentanone	43	14.517	14.517	(1.180)	350738	50.0000	49.1867
	48 Toluene-d8	98	14.704	14.704	(0.882)	1811154	50.0000	49.8035
	49 Toluene	92	14.802	14.802	(0.888)	1047847	50.0000	55.4344
	50 trans-1,3-Dichloropropene	75	15.197	15.197	(0.912)	603209	50.0000	51.3471
	51 1,1,2-Trichloroethane	85	15.463	15.463	(0.928)	170065	50.0000	50.4665
	52 Tetrachloroethene	166	15.551	15.551	(0.933)	384801	50.0000	50.8691
	53 2-Hexanone	43	15.699	15.699	(0.942)	247234	50.0000	48.9020
	54 1,3-Dichloropropane	76	15.709	15.709	(0.943)	546028	50.0000	50.5288
	55 Dibromochloromethane	129	15.975	15.975	(0.959)	415161	50.0000	52.1307
	56 1,2-Dibromoethane	107	16.162	16.162	(0.970)	306201	50.0000	50.1498
	57 1-Chlorohexane	91	16.566	16.566	(0.994)	540049	50.0000	51.1097
*	58 Chlorobenzene-d5	117	16.665	16.665	(1.000)	1326780	50.0000	
	59 Chlorobenzene	112	16.695	16.695	(1.002)	1124461	50.0000	51.0063
	60 Ethylbenzene	91	16.744	16.744	(1.005)	2016868	50.0000	53.6616
	61 1,1,1,2-Tetrachloroethane	131	16.783	16.783	(1.007)	440712	50.0000	53.5329
	62 m,p-Xylenes	106	16.882	16.882	(1.013)	1444165	100.000	110.4205
	63 o-Xylene	106	17.335	17.335	(1.040)	717932	50.0000	56.8098
	64 Styrene	104	17.365	17.365	(1.042)	1156195	50.0000	53.4696
	65 Bromoform	173	17.641	17.641	(1.059)	228488	50.0000	55.4161
	66 Isopropylbenzene	105	17.690	17.690	(0.926)	1879581	50.0000	53.0917
	67 Cyclohexanone_	55	17.936	17.936	(0.939)	2441	50.0000	2.1484(A)
	68 Bromofluorobenzene	95	17.936	17.936	(0.939)	682979	50.0000	46.0646
	69 1,1,2,2-Tetrachloroethane	83	18.074	18.074	(0.946)	347568	50.0000	46.8031
	70 Propylbenzene	91	18.104	18.104	(0.948)	2230064	50.0000	50.7284
	71 Bromobenzene	156	18.104	18.104	(0.948)	517930	50.0000	54.1125
	72 1,2,3-Trichloropropane	110	18.153	18.153	(0.950)	86956	50.0000	50.5102
	73 2-Chlorotoluene	91	18.262	18.262	(0.956)	1439625	50.0000	48.0831
	74 1,3,5-Trimethylbenzene	105	18.271	18.271	(0.957)	1450430	50.0000	50.5862
	75 4-Chlorotoluene	91	18.370	18.370	(0.962)	1408692	50.0000	51.1625
	76 tert-Butylbenzene	119	18.597	18.597	(0.974)	1305323	50.0000	54.2620

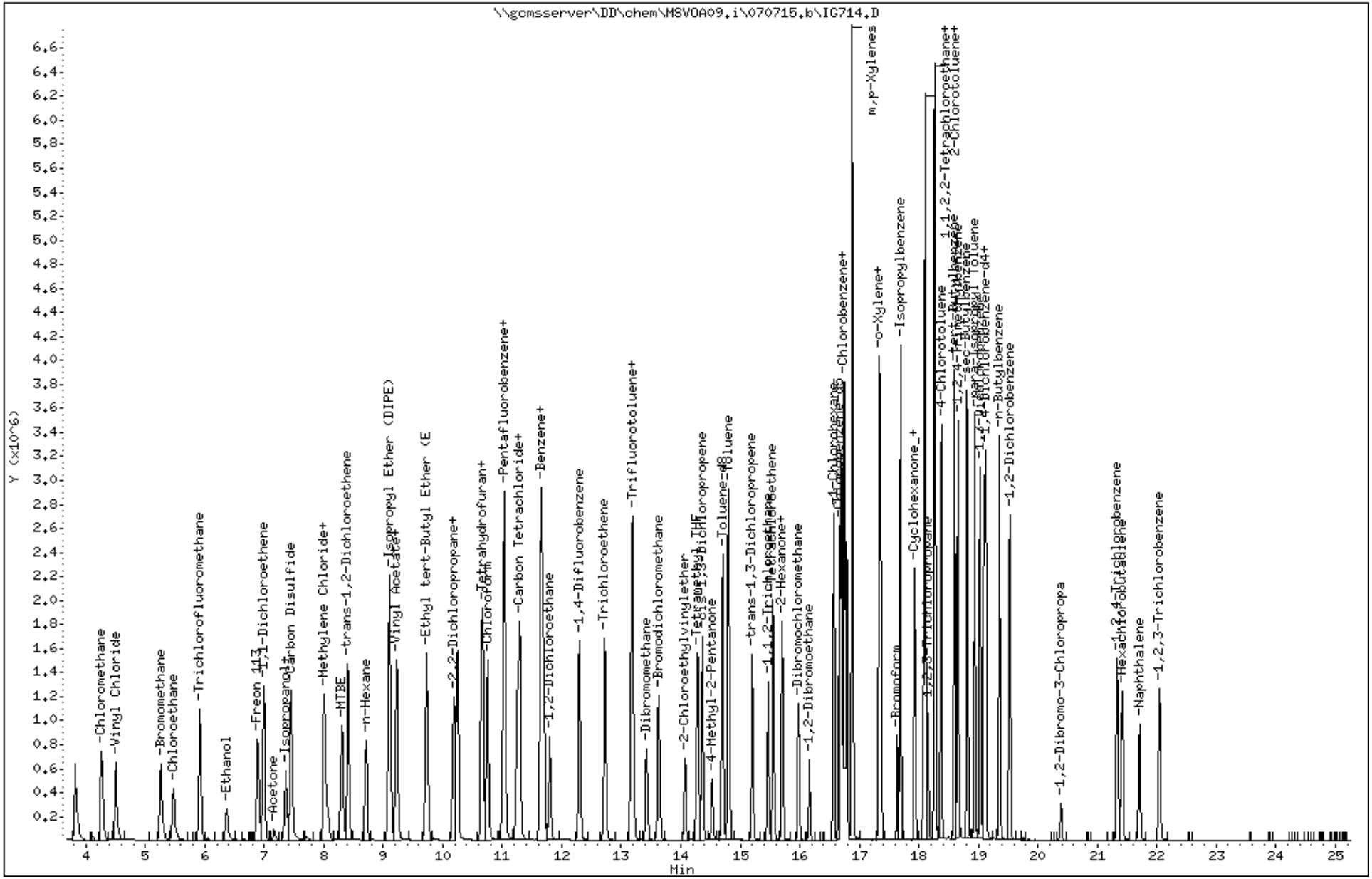
Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG713.D
Report Date: 08-Jul-2015 13:17

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77	1,2,4-Trimethylbenzene	105	18.656	18.656	(0.977)	1497883	50.0000	54.8909
78	sec-Butylbenzene	105	18.813	18.813	(0.985)	1984908	50.0000	55.9558
79	para-Isopropyl Toluene	119	18.942	18.942	(0.992)	1520464	50.0000	56.7109
80	1,3-Dichlorobenzene	146	19.030	19.030	(0.996)	834811	50.0000	52.0644
* 81	1,4-Dichlorobenzene-d4	152	19.099	19.099	(1.000)	740445	50.0000	
82	1,4-Dichlorobenzene	146	19.129	19.129	(1.002)	836027	50.0000	49.9692
83	n-Butylbenzene	91	19.355	19.355	(1.013)	1309418	50.0000	52.1067
84	1,2-Dichlorobenzene	146	19.533	19.533	(1.023)	737398	50.0000	49.8875
85	1,2-Dibromo-3-Chloropropane	75	20.390	20.390	(1.068)	55850	50.0000	50.4789
86	1,2,4-Trichlorobenzene	180	21.336	21.336	(1.117)	355150	50.0000	50.3025
87	Hexachlorobutadiene	225	21.415	21.415	(1.121)	180700	50.0000	50.4469
88	Naphthalene	128	21.711	21.711	(1.137)	576722	50.0000	50.2038
89	1,2,3-Trichlorobenzene	180	22.046	22.046	(1.154)	315315	50.0000	51.3966

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG714.D
Date : 07-JUL-2015 17:46
Client ID: DYNA P&T
Instrument: MSVOA09.i
Sample Info: ICAL,=ICAL,37.5x
Purge Volume: 5.0
Operator: VOC
Column phase: RTx Volatiles
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG714.D
Report Date: 08-Jul-2015 13:18

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG714.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 17:46 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,=ICAL,37.5x
Misc Info : 75ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:17 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 17:46 Cal File: IG714.D
Als bottle: 8 Calibration Sample, Level: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.822	3.824	(0.346)	1050337	75.0000	68.5334
2 Chloromethane	50	4.265	4.268	(0.387)	1297511	75.0000	75.1224
3 Vinyl Chloride	62	4.502	4.504	(0.408)	1035440	75.0000	60.7501
4 Bromomethane	94	5.261	5.263	(0.477)	690790	75.0000	88.0272
5 Chloroethane	64	5.468	5.470	(0.495)	633097	75.0000	66.5671
6 Trichlorofluoromethane	101	5.921	5.923	(0.537)	1204669	75.0000	69.4326
7 Ethanol	45	6.364	6.366	(0.577)	502852	7500.00	6794.7253(A)
8 Freon 113	101	6.887	6.889	(0.624)	578147	75.0000	73.4663
9 1,1-Dichloroethene	96	6.995	6.997	(0.634)	588908	75.0000	70.8444
10 Acetone	43	7.163	7.165	(0.649)	155448	75.0000	63.4720
11 Isopropanol	45	7.350	7.352	(0.666)	250535	750.000	647.9043(A)
12 Iodomethane	142	7.360	7.362	(0.667)	827198	75.0000	86.9975(A)
13 Carbon Disulfide	76	7.448	7.450	(0.675)	2505462	75.0000	70.3384
14 Methylene Chloride	84	8.000	8.002	(0.725)	738076	75.0000	69.2583
15 tert-Butyl Alcohol (TBA)	59	8.069	8.071	(0.731)	330348	750.000	666.8778(A)
16 MTBE	73	8.306	8.308	(0.753)	1265880	75.0000	65.8846
17 trans-1,2-Dichloroethene	96	8.404	8.406	(0.762)	677702	75.0000	70.5373
18 n-Hexane	57	8.710	8.712	(0.789)	486840	75.0000	74.7401(A)
19 Isopropyl Ether (DIPE)	45	9.104	9.096	(0.825)	3170620	75.0000	66.0369(A)
20 Vinyl Acetate	43	9.212	9.214	(0.835)	1162499	75.0000	68.4621
21 1,1-Dichloroethane	63	9.232	9.224	(0.837)	1463309	75.0000	66.7774
22 Ethyl tert-Butyl Ether (ETBE)	59	9.725	9.727	(0.881)	2149348	75.0000	66.8321(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG714.D
Report Date: 08-Jul-2015 13:18

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.188	10.190	(0.923)	1012214	75.0000	65.0370
	24 cis-1,2-Dichloroethene	96	10.247	10.239	(0.929)	771143	75.0000	72.2627
	25 2-Butanone	43	10.228	10.230	(0.927)	226636	75.0000	65.3854
	26 Tetrahydrofuran	42	10.651	10.653	(0.965)	1188195	750.000	651.4045(A)
	27 Bromochloromethane	128	10.681	10.673	(0.968)	362701	75.0000	73.5570
	28 Chloroform	83	10.750	10.752	(0.974)	1377956	75.0000	67.5421
*	29 Pentafluorobenzene	168	11.036	11.038	(1.000)	1048505	50.0000	
	30 Dibromofluoromethane	113	11.036	11.038	(1.000)	638751	50.0000	46.4012
	31 1,1,1-Trichloroethane	97	11.026	11.028	(0.999)	1030764	75.0000	65.0143
	32 Carbon Tetrachloride	117	11.252	11.255	(0.915)	931815	75.0000	71.2969
	33 1,1-Dichloropropene	75	11.292	11.294	(0.918)	1031313	75.0000	72.2906
	34 Benzene	78	11.647	11.649	(0.947)	2705877	75.0000	72.6534
	35 1,2-Dichloroethane-d4	65	11.666	11.668	(0.949)	490406	50.0000	42.3437
	36 Methyl tert-Amyl Ether (TAME)	73	11.686	11.688	(0.950)	1608095	75.0000	70.6664(A)
	37 1,2-Dichloroethane	62	11.795	11.797	(0.959)	879602	75.0000	67.5654
*	38 1,4-Difluorobenzene	114	12.297	12.299	(1.000)	1589987	50.0000	
	39 Trichloroethene	95	12.721	12.723	(1.034)	723625	75.0000	73.5566
	40 Trifluorotoluene	146	13.174	13.176	(1.071)	879179	75.0000	78.5716(A)
	41 1,2-Dichloropropane	63	13.184	13.186	(1.072)	822225	75.0000	70.9839
	42 Dibromomethane	93	13.421	13.423	(1.091)	408636	75.0000	72.2496
	43 Bromodichloromethane	83	13.628	13.630	(1.108)	981149	75.0000	71.1866
	44 2-Chloroethylvinylether	63	14.071	14.073	(1.144)	353778	75.0000	77.5051
	45 Tetramethyl THF	43	14.278	14.280	(1.161)	1496095	75.0000	68.5179(A)
	46 cis-1,3-Dichloropropene	75	14.367	14.359	(1.168)	1137769	75.0000	74.5685
	47 4-Methyl-2-Pentanone	43	14.524	14.517	(1.181)	519899	75.0000	69.5937
	48 Toluene-d8	98	14.702	14.704	(0.882)	1868864	50.0000	49.6942
	49 Toluene	92	14.800	14.802	(0.888)	1449260	75.0000	72.7094
	50 trans-1,3-Dichloropropene	75	15.204	15.197	(0.912)	887231	75.0000	73.1693
	51 1,1,2-Trichloroethane	85	15.471	15.463	(0.928)	263181	75.0000	76.0921
	52 Tetrachloroethene	166	15.549	15.551	(0.933)	626341	75.0000	80.4551
	53 2-Hexanone	43	15.697	15.699	(0.942)	375872	75.0000	72.5671
	54 1,3-Dichloropropane	76	15.707	15.709	(0.943)	831529	75.0000	74.6406
	55 Dibromochloromethane	129	15.983	15.975	(0.959)	651897	75.0000	79.6884
	56 1,2-Dibromoethane	107	16.160	16.162	(0.970)	476041	75.0000	75.8329
	57 1-Chlorohexane	91	16.574	16.566	(0.995)	877281	75.0000	81.1213
*	58 Chlorobenzene-d5	117	16.663	16.665	(1.000)	1372790	50.0000	
	59 Chlorobenzene	112	16.702	16.695	(1.002)	1641078	75.0000	72.8983
	60 Ethylbenzene	91	16.752	16.744	(1.005)	3013390	75.0000	76.8351
	61 1,1,1,2-Tetrachloroethane	131	16.781	16.783	(1.007)	680184	75.0000	79.8349
	62 m,p-Xylenes	106	16.880	16.882	(1.013)	2140668	150.000	156.5217
	63 o-Xylene	106	17.333	17.335	(1.040)	1054539	75.0000	79.5452
	64 Styrene	104	17.363	17.365	(1.042)	1509111	75.0000	67.4516
	65 Bromoform	173	17.639	17.641	(1.059)	383612	75.0000	90.1119
	66 Isopropylbenzene	105	17.688	17.690	(0.926)	2790688	75.0000	76.2386
	67 Cyclohexanone_	55	17.934	17.936	(0.939)	2895	75.0000	2.5088(A)
	68 Bromofluorobenzene	95	17.934	17.936	(0.939)	703047	50.0000	47.0682
	69 1,1,2,2-Tetrachloroethane	83	18.082	18.074	(0.947)	534349	75.0000	71.8139
	70 Propylbenzene	91	18.102	18.104	(0.948)	3168355	75.0000	70.8009
	71 Bromobenzene	156	18.102	18.104	(0.948)	774733	75.0000	79.7925
	72 1,2,3-Trichloropropane	110	18.151	18.153	(0.950)	134529	75.0000	77.3935
	73 2-Chlorotoluene	91	18.260	18.262	(0.956)	2099971	75.0000	68.9181
	74 1,3,5-Trimethylbenzene	105	18.269	18.271	(0.957)	2142655	75.0000	73.2416
	75 4-Chlorotoluene	91	18.378	18.370	(0.962)	2016164	75.0000	72.3177
	76 tert-Butylbenzene	119	18.595	18.597	(0.974)	2021705	75.0000	80.4737

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG714.D
Report Date: 08-Jul-2015 13:18

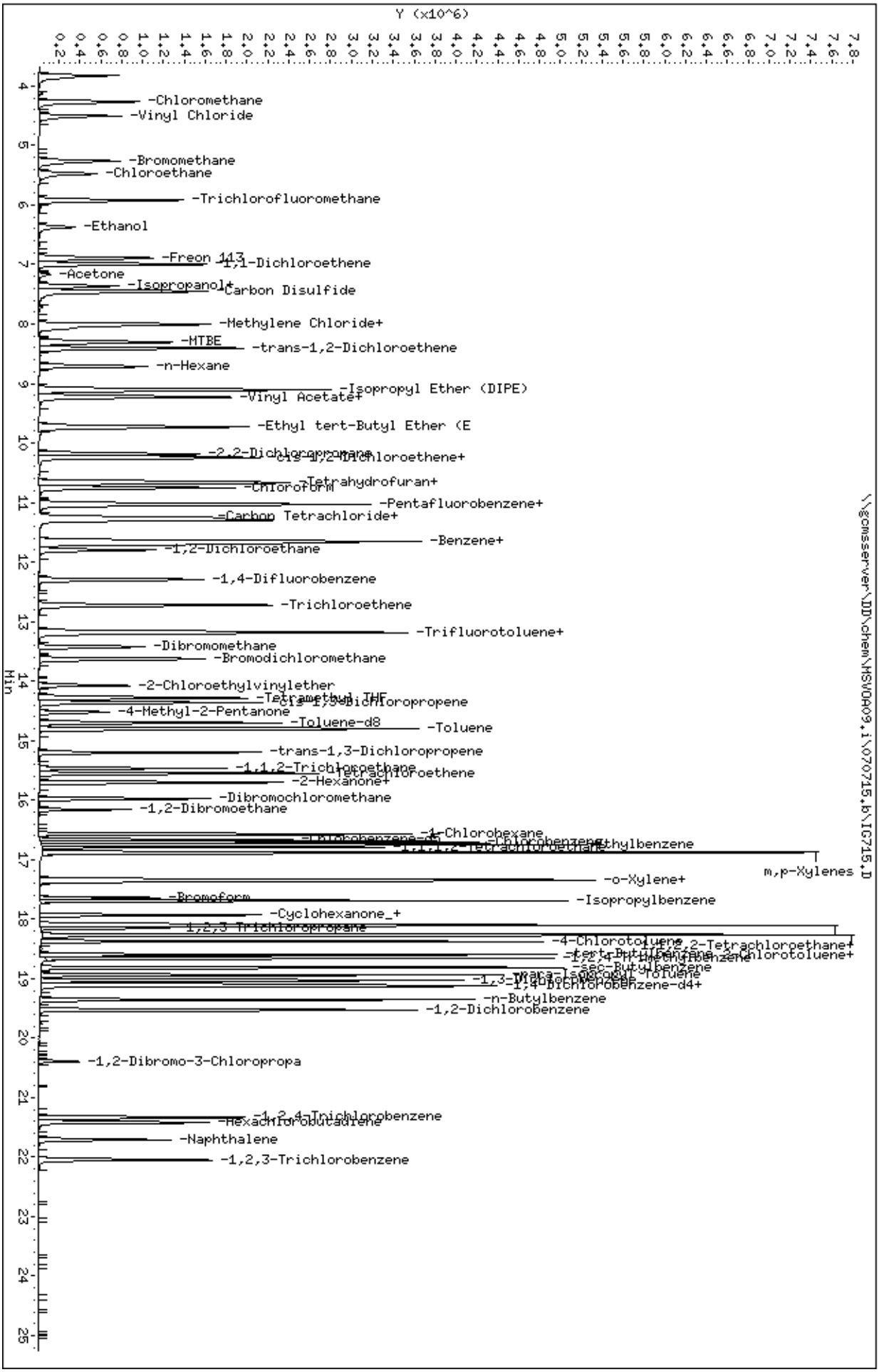
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77	1,2,4-Trimethylbenzene	105	18.654	18.656	(0.977)	2129802	75.0000	74.5910
78	sec-Butylbenzene	105	18.811	18.813	(0.985)	2984817	75.0000	80.3832
79	para-Isopropyl Toluene	119	18.940	18.942	(0.992)	2223209	75.0000	79.3106
80	1,3-Dichlorobenzene	146	19.028	19.030	(0.996)	1349186	75.0000	82.9935
* 81	1,4-Dichlorobenzene-d4	152	19.097	19.099	(1.000)	751491	50.0000	
82	1,4-Dichlorobenzene	146	19.127	19.129	(1.002)	1301337	75.0000	76.7553
83	n-Butylbenzene	91	19.353	19.355	(1.013)	2055686	75.0000	78.2811
84	1,2-Dichlorobenzene	146	19.531	19.533	(1.023)	1181886	75.0000	79.5515
85	1,2-Dibromo-3-Chloropropane	75	20.388	20.390	(1.068)	84849	75.0000	76.2263
86	1,2,4-Trichlorobenzene	180	21.334	21.336	(1.117)	567752	75.0000	78.8370
87	Hexachlorobutadiene	225	21.413	21.415	(1.121)	297833	75.0000	81.1888
88	Naphthalene	128	21.709	21.711	(1.137)	919021	75.0000	78.3640
89	1,2,3-Trichlorobenzene	180	22.044	22.046	(1.154)	500585	75.0000	79.9239

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG715.D
Date : 07-JUL-2015 18:21
Client ID: DYNA P&T
Sample Info: ICAL,=ICAL,50x
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG715.D
Report Date: 08-Jul-2015 13:18

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG715.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 18:21 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ICAL,=ICAL,50x
Misc Info : 100ppb
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:18 msvoa Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 9 Calibration Sample, Level: 9
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	ON-COL (ug/L)
1 Freon 12	85	3.818	3.824	(0.346)	1324650	100.000	88.5634
2 Chloromethane	50	4.261	4.268	(0.386)	1677498	100.000	108.1856
3 Vinyl Chloride	62	4.498	4.504	(0.408)	1345066	100.000	81.0246
4 Bromomethane	94	5.267	5.263	(0.477)	930417	100.000	121.0809
5 Chloroethane	64	5.474	5.470	(0.496)	845005	100.000	90.5888
6 Trichlorofluoromethane	101	5.917	5.923	(0.536)	1549651	100.000	91.0352
7 Ethanol	45	6.370	6.366	(0.577)	667603	10000.0	9312.6873(A)
8 Freon 113	101	6.893	6.889	(0.625)	776048	100.000	101.1260
9 1,1-Dichloroethene	96	7.001	6.997	(0.635)	790578	100.000	97.6322
10 Acetone	43	7.169	7.165	(0.650)	187329	100.000	80.7885
11 Isopropanol	45	7.346	7.352	(0.666)	331920	1000.00	894.5130(A)
12 Iodomethane	142	7.366	7.362	(0.668)	1144206	100.000	111.8200(A)
13 Carbon Disulfide	76	7.454	7.450	(0.676)	3396371	100.000	97.7329
14 Methylene Chloride	84	8.006	8.002	(0.726)	999303	100.000	95.8706
15 tert-Butyl Alcohol (TBA)	59	8.075	8.071	(0.732)	430179	1000.00	902.1375(A)
16 MTBE	73	8.302	8.308	(0.753)	1742917	100.000	93.1811
17 trans-1,2-Dichloroethene	96	8.410	8.406	(0.762)	923544	100.000	98.3954
18 n-Hexane	57	8.716	8.712	(0.790)	608131	100.000	95.3437(A)
19 Isopropyl Ether (DIPE)	45	9.100	9.096	(0.825)	4092269	100.000	87.8918(A)
20 Vinyl Acetate	43	9.209	9.214	(0.835)	1457754	100.000	87.8070
21 1,1-Dichloroethane	63	9.228	9.224	(0.837)	1888303	100.000	88.6074
22 Ethyl tert-Butyl Ether (ETBE)	59	9.731	9.727	(0.882)	2868484	100.000	91.4921(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG715.D
Report Date: 08-Jul-2015 13:18

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
	23 2,2-Dichloropropane	77	10.184	10.190	(0.923)	1317241	100.000	87.1682
	24 cis-1,2-Dichloroethene	96	10.244	10.239	(0.929)	1026355	100.000	98.7284
	25 2-Butanone	43	10.234	10.230	(0.928)	293582	100.000	87.9709
	26 Tetrahydrofuran	42	10.648	10.653	(0.965)	1532224	1000.00	870.0534(A)
	27 Bromochloromethane	128	10.677	10.673	(0.968)	484972	100.000	100.9374
	28 Chloroform	83	10.756	10.752	(0.975)	1810977	100.000	91.1873
*	29 Pentafluorobenzene	168	11.032	11.038	(1.000)	1026699	50.0000	
	30 Dibromofluoromethane	113	11.042	11.038	(1.001)	619676	50.0000	46.0060
	31 1,1,1-Trichloroethane	97	11.022	11.028	(0.999)	1323756	100.000	85.4884
	32 Carbon Tetrachloride	117	11.249	11.255	(0.915)	1264705	100.000	97.6230
	33 1,1-Dichloropropene	75	11.298	11.294	(0.919)	1337724	100.000	94.5761
	34 Benzene	78	11.653	11.649	(0.948)	3584245	100.000	96.8247
	35 1,2-Dichloroethane-d4	65	11.673	11.668	(0.949)	456570	50.0000	39.7380
	36 Methyl tert-Amyl Ether (TAME)	73	11.692	11.688	(0.951)	2099333	100.000	93.3697(A)
	37 1,2-Dichloroethane	62	11.801	11.797	(0.960)	1128598	100.000	87.1029
*	38 1,4-Difluorobenzene	114	12.293	12.299	(1.000)	1579677	50.0000	
	39 Trichloroethene	95	12.727	12.723	(1.035)	975010	100.000	99.7365
	40 Trifluorotoluene	146	13.170	13.176	(1.071)	1209614	100.000	109.0800(A)
	41 1,2-Dichloropropane	63	13.190	13.186	(1.073)	1095909	100.000	95.3457
	42 Dibromomethane	93	13.427	13.423	(1.092)	541263	100.000	96.6703
	43 Bromodichloromethane	83	13.624	13.630	(1.108)	1330191	100.000	97.3971
	44 2-Chloroethylvinylether	63	14.077	14.073	(1.145)	466551	100.000	102.9725
	45 Tetramethyl THF	43	14.284	14.280	(1.162)	1888089	100.000	87.2122(A)
	46 cis-1,3-Dichloropropene	75	14.363	14.359	(1.168)	1463884	100.000	96.8564
	47 4-Methyl-2-Pentanone	43	14.521	14.517	(1.181)	696091	100.000	94.4634
	48 Toluene-d8	98	14.698	14.704	(0.882)	1862480	50.0000	49.4029
	49 Toluene	92	14.806	14.802	(0.889)	1906937	100.000	94.4555
	50 trans-1,3-Dichloropropene	75	15.201	15.197	(0.912)	1176383	100.000	97.0529
	51 1,1,2-Trichloroethane	85	15.467	15.463	(0.928)	356135	100.000	103.3862
	52 Tetrachloroethene	166	15.555	15.551	(0.934)	870759	100.000	111.7159
	53 2-Hexanone	43	15.693	15.699	(0.942)	480600	100.000	93.4861
	54 1,3-Dichloropropane	76	15.703	15.709	(0.943)	1090340	100.000	97.9876
	55 Dibromochloromethane	129	15.979	15.975	(0.959)	884892	100.000	108.6190
	56 1,2-Dibromoethane	107	16.166	16.162	(0.970)	647264	100.000	103.4044
	57 1-Chlorohexane	91	16.571	16.566	(0.995)	1164497	100.000	108.3416
*	58 Chlorobenzene-d5	117	16.659	16.665	(1.000)	1368704	50.0000	
	59 Chlorobenzene	112	16.699	16.695	(1.002)	2329203	100.000	103.6255
	60 Ethylbenzene	91	16.748	16.744	(1.005)	3901370	100.000	99.1413
	61 1,1,1,2-Tetrachloroethane	131	16.787	16.783	(1.008)	907257	100.000	106.5612
	62 m,p-Xylenes	106	16.876	16.882	(1.013)	2596400	200.000	188.9293
	63 o-Xylene	106	17.339	17.335	(1.041)	1404256	100.000	103.9055
	64 Styrene	104	17.359	17.365	(1.042)	1997703	100.000	89.5564
	65 Bromoform	173	17.645	17.641	(1.059)	539518	100.000	126.1795
	66 Isopropylbenzene	105	17.694	17.690	(0.926)	3630461	100.000	96.1764
	67 Cyclohexanone_	55	17.931	17.936	(0.939)	2993	100.000	2.5353(A)
	68 Bromofluorobenzene	95	17.931	17.936	(0.939)	709246	50.0000	46.6514
	69 1,1,2,2-Tetrachloroethane	83	18.078	18.074	(0.946)	722045	100.000	95.9613
	70 Propylbenzene	91	18.108	18.104	(0.948)	4021010	100.000	87.8024
	71 Bromobenzene	156	18.108	18.104	(0.948)	999776	100.000	100.9726
	72 1,2,3-Trichloropropane	110	18.157	18.153	(0.950)	169599	100.000	96.5202
	73 2-Chlorotoluene	91	18.266	18.262	(0.956)	2605293	100.000	83.7174
	74 1,3,5-Trimethylbenzene	105	18.275	18.271	(0.957)	2642519	100.000	88.3537
	75 4-Chlorotoluene	91	18.374	18.370	(0.962)	2692566	100.000	94.3180
	76 tert-Butylbenzene	119	18.601	18.597	(0.974)	2629915	100.000	101.3313

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG715.D
Report Date: 08-Jul-2015 13:18

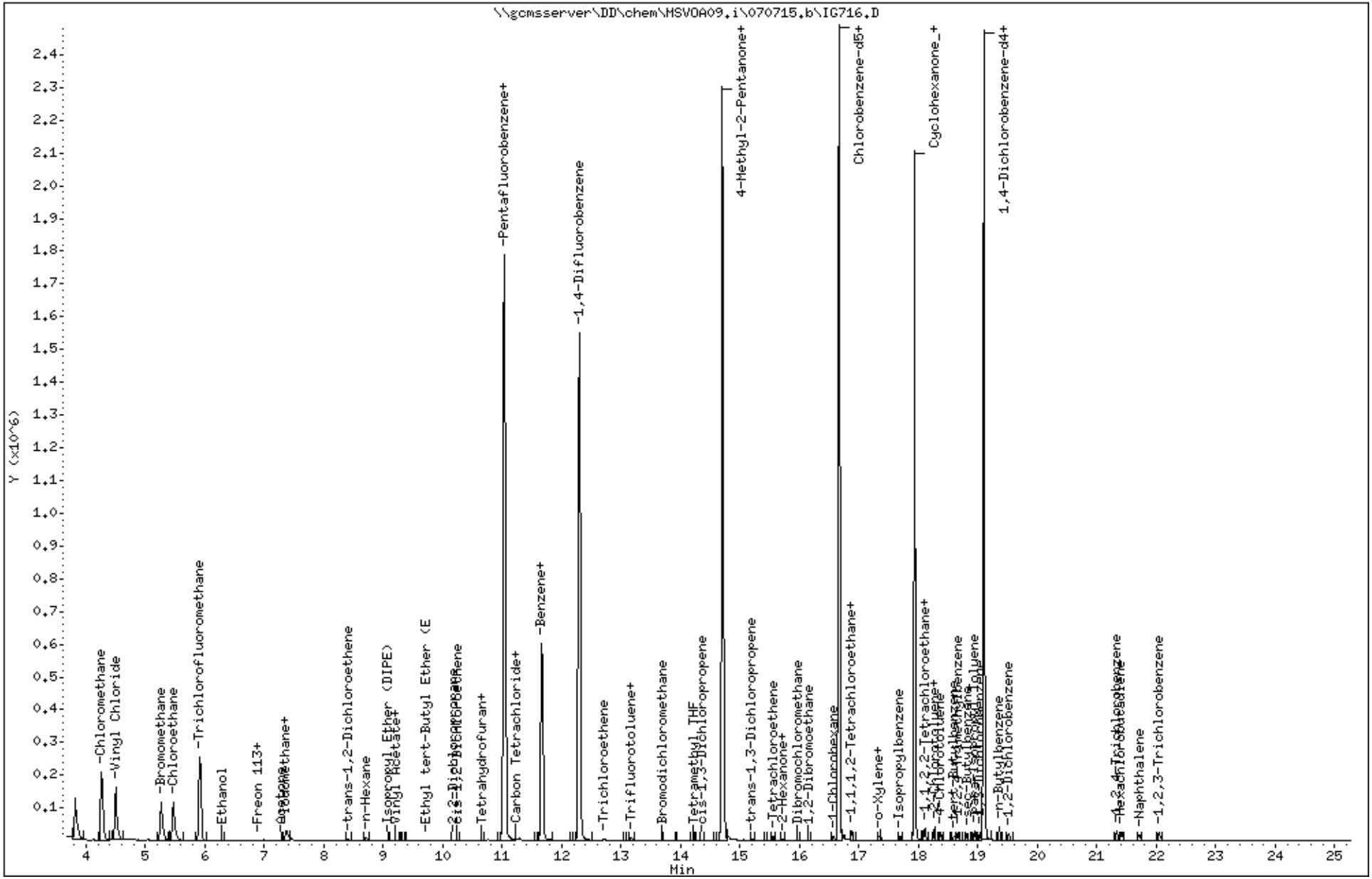
	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	AMOUNTS CAL-AMT (ug/L)	AMOUNTS ON-COL (ug/L)
77	1,2,4-Trimethylbenzene	105	18.660	18.656	(0.977)	2870353	100.000	96.8565
78	sec-Butylbenzene	105	18.817	18.813	(0.985)	3927137	100.000	101.3277
79	para-Isopropyl Toluene	119	18.936	18.942	(0.991)	3026294	100.000	103.3311
80	1,3-Dichlorobenzene	146	19.034	19.030	(0.996)	1818997	100.000	109.2092
* 81	1,4-Dichlorobenzene-d4	152	19.103	19.099	(1.000)	769406	50.0000	
82	1,4-Dichlorobenzene	146	19.123	19.129	(1.001)	1769043	100.000	102.0547
83	n-Butylbenzene	91	19.360	19.355	(1.013)	2612017	100.000	96.1875
84	1,2-Dichlorobenzene	146	19.527	19.533	(1.022)	1632738	100.000	108.0091
85	1,2-Dibromo-3-Chloropropane	75	20.394	20.390	(1.068)	112314	100.000	99.4414
86	1,2,4-Trichlorobenzene	180	21.340	21.336	(1.117)	815387	100.000	109.4296
87	Hexachlorobutadiene	225	21.419	21.415	(1.121)	414054	100.000	109.0787
88	Naphthalene	128	21.715	21.711	(1.137)	1302235	100.000	107.2106
89	1,2,3-Trichlorobenzene	180	22.050	22.046	(1.154)	709734	100.000	108.6183

QC Flag Legend

A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG716.D
Date : 07-JUL-2015 18:56
Client ID: DYNA P&T
Sample Info: icv,s26358,.01/100
Purge Volume: 5.0
Column phase: RTx Volatiles

Instrument: MSVOA09.i
Operator: VOC
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG716.D
Report Date: 08-Jul-2015 13:46

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG716.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 18:56 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : icv,s26358,.01/100
Misc Info : gas
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 08-Jul-2015 13:46 target Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 15
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.820	3.824	(0.346)	199220	14.2932	14.2931
2 Chloromethane	50	4.263	4.268	(0.386)	334634	16.8150	16.8150
3 Vinyl Chloride	62	4.500	4.504	(0.408)	251659	16.2678	16.2677
4 Bromomethane	94	5.268	5.263	(0.478)	129277	17.3138	17.3138
5 Chloroethane	64	5.475	5.470	(0.496)	163419	18.8001	18.8000
6 Trichlorofluoromethane	101	5.919	5.923	(0.536)	276122	17.4068	17.4067
7 Ethanol	45	6.392	6.366	(0.579)	830	12.4244	12.4244(A)
8 Freon 113	101	6.895	6.889	(0.625)	1468	0.20007	0.2000(a)
9 1,1-Dichloroethene	96	6.993	6.998	(0.634)	808	0.10708	0.1070(a)
10 Acetone	43	7.180	7.165	(0.651)	2180	1.06766	1.0676
12 Iodomethane	142	7.368	7.362	(0.668)	58186	6.37521	6.3752(A)
13 Carbon Disulfide	76	7.446	7.451	(0.675)	6287	0.19414	0.1941(a)
17 trans-1,2-Dichloroethene	96	8.412	8.407	(0.762)	1484	0.16967	0.1696(a)
18 n-Hexane	57	8.708	8.712	(0.789)	4392	0.74357	0.7435(A)
19 Isopropyl Ether (DIPE)	45	9.112	9.097	(0.826)	1640	0.03780	0.0377(aA)
20 Vinyl Acetate	43	9.230	9.215	(0.837)	472	0.03051	0.0305(a)
21 1,1-Dichloroethane	63	9.230	9.225	(0.837)	1465	0.07377	0.0737(a)
22 Ethyl tert-Butyl Ether (ETBE)	59	9.733	9.727	(0.882)	992	0.03395	0.0339(aA)
23 2,2-Dichloropropane	77	10.186	10.191	(0.923)	882	0.06263	0.0626(a)
24 cis-1,2-Dichloroethene	96	10.245	10.240	(0.929)	621	0.06410	0.0641(a)
26 Tetrahydrofuran	42	10.659	10.654	(0.966)	550	0.33514	0.3351(aA)
28 Chloroform	83	10.758	10.752	(0.975)	1252	0.06765	0.0676(a)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG716.D
Report Date: 08-Jul-2015 13:46

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
* 29 Pentafluorobenzene	168	11.034	11.038	(1.000)	956756	50.0000	
30 Dibromofluoromethane	113	11.034	11.038	(1.000)	593867	47.3131	47.3131
31 1,1,1-Trichloroethane	97	11.024	11.028	(0.999)	754	0.05225	0.0522(a)
32 Carbon Tetrachloride	117	11.251	11.255	(0.915)	890	0.07116	0.0711(a)
33 1,1-Dichloropropene	75	11.290	11.294	(0.918)	3099	0.22695	0.2269(a)
34 Benzene	78	11.645	11.649	(0.947)	3026	0.08467	0.0846(a)
35 1,2-Dichloroethane-d4	65	11.664	11.669	(0.949)	540814	48.7566	48.7565
37 1,2-Dichloroethane	62	11.802	11.797	(0.960)	910	0.07275	0.0727(a)
* 38 1,4-Difluorobenzene	114	12.295	12.300	(1.000)	1525042	50.0000	
39 Trichloroethene	95	12.719	12.723	(1.034)	2109	0.22346	0.2234(a)
40 Trifluorotoluene	146	13.182	13.177	(1.072)	4814	0.45291	0.4529(aA)
41 1,2-Dichloropropane	63	13.182	13.187	(1.072)	711	0.06407	0.0640(a)
43 Bromodichloromethane	83	13.626	13.630	(1.108)	591	0.04482	0.0448(a)
45 Tetramethyl THF	43	14.286	14.280	(1.162)	1009	0.04828	0.0482(aA)
46 cis-1,3-Dichloropropene	75	14.365	14.359	(1.168)	1214	0.08320	0.0832(a)
47 4-Methyl-2-Pentanone	43	14.700	14.517	(1.196)	11906	1.67359	1.6735
48 Toluene-d8	98	14.700	14.704	(0.882)	1760608	48.9230	48.9229
49 Toluene	92	14.798	14.802	(0.888)	3158	0.16387	0.1638(a)
50 trans-1,3-Dichloropropene	75	15.202	15.197	(0.912)	1597	0.13802	0.1380(a)
52 Tetrachloroethene	166	15.557	15.551	(0.934)	3527	0.47404	0.4740(a)
53 2-Hexanone	43	15.725	15.699	(0.944)	577	0.11758	0.1175(a)
54 1,3-Dichloropropane	76	15.705	15.709	(0.943)	985	0.09273	0.0927(a)
55 Dibromochloromethane	129	15.981	15.975	(0.959)	571	0.07342	0.0734(a)
56 1,2-Dibromoethane	107	16.158	16.162	(0.970)	415	0.06945	0.0694(a)
57 1-Chlorohexane	91	16.572	16.566	(0.995)	4134	0.40292	0.4029(a)
* 58 Chlorobenzene-d5	117	16.661	16.665	(1.000)	1306535	50.0000	
59 Chlorobenzene	112	16.700	16.695	(1.002)	5259	0.24510	0.2451(a)
60 Ethylbenzene	91	16.750	16.744	(1.005)	9217	0.24537	0.2453(a)
61 1,1,1,2-Tetrachloroethane	131	16.789	16.783	(1.008)	385	0.04737	0.0473(a)
62 m,p-Xylenes	106	16.878	16.882	(1.013)	7447	0.56767	0.5676
63 o-Xylene	106	17.331	17.335	(1.040)	2538	0.19673	0.1967(a)
64 Styrene	104	17.361	17.364	(1.042)	5345	0.25762	0.2576(a)
66 Isopropylbenzene	105	17.696	17.690	(0.927)	8774	0.27504	0.2750(a)
67 Cyclohexanone_	55	17.932	17.936	(0.939)	2537	2.54304	2.5430(A)
68 Bromofluorobenzene	95	17.932	17.936	(0.939)	652960	50.8217	50.8217
69 1,1,2,2-Tetrachloroethane	83	18.080	18.074	(0.947)	678	0.10662	0.1066(a)
70 Propylbenzene	91	18.110	18.104	(0.948)	18591	0.48036	0.4803(a)
71 Bromobenzene	156	18.110	18.104	(0.948)	2936	0.35087	0.3508(a)
72 1,2,3-Trichloropropane	110	17.932	18.153	(0.939)	406	0.27341	0.2734(a)
73 2-Chlorotoluene	91	18.267	18.262	(0.957)	12244	0.46556	0.4655(a)
74 1,3,5-Trimethylbenzene	105	18.267	18.271	(0.957)	11928	0.47192	0.4719(a)
75 4-Chlorotoluene	91	18.376	18.370	(0.962)	13067	0.54163	0.5416
76 tert-Butylbenzene	119	18.602	18.597	(0.974)	7116	0.32444	0.3244(a)
77 1,2,4-Trimethylbenzene	105	18.662	18.656	(0.977)	13757	0.54930	0.5493
78 sec-Butylbenzene	105	18.819	18.813	(0.986)	16738	0.51103	0.5110
79 para-Isopropyl Toluene	119	18.938	18.942	(0.992)	16476	0.66568	0.6656
80 1,3-Dichlorobenzene	146	19.026	19.030	(0.996)	9137	0.64912	0.6491
* 81 1,4-Dichlorobenzene-d4	152	19.095	19.099	(1.000)	650221	50.0000	
82 1,4-Dichlorobenzene	146	19.125	19.129	(1.002)	9568	0.65315	0.6531
83 n-Butylbenzene	91	19.361	19.355	(1.014)	24011	1.04628	1.0462
84 1,2-Dichlorobenzene	146	19.529	19.533	(1.023)	7270	0.56908	0.5690
86 1,2,4-Trichlorobenzene	180	21.332	21.336	(1.117)	10196	1.61918	1.6191
87 Hexachlorobutadiene	225	21.421	21.415	(1.122)	6406	1.99694	1.9969
88 Naphthalene	128	21.717	21.711	(1.137)	19943	1.94282	1.9428

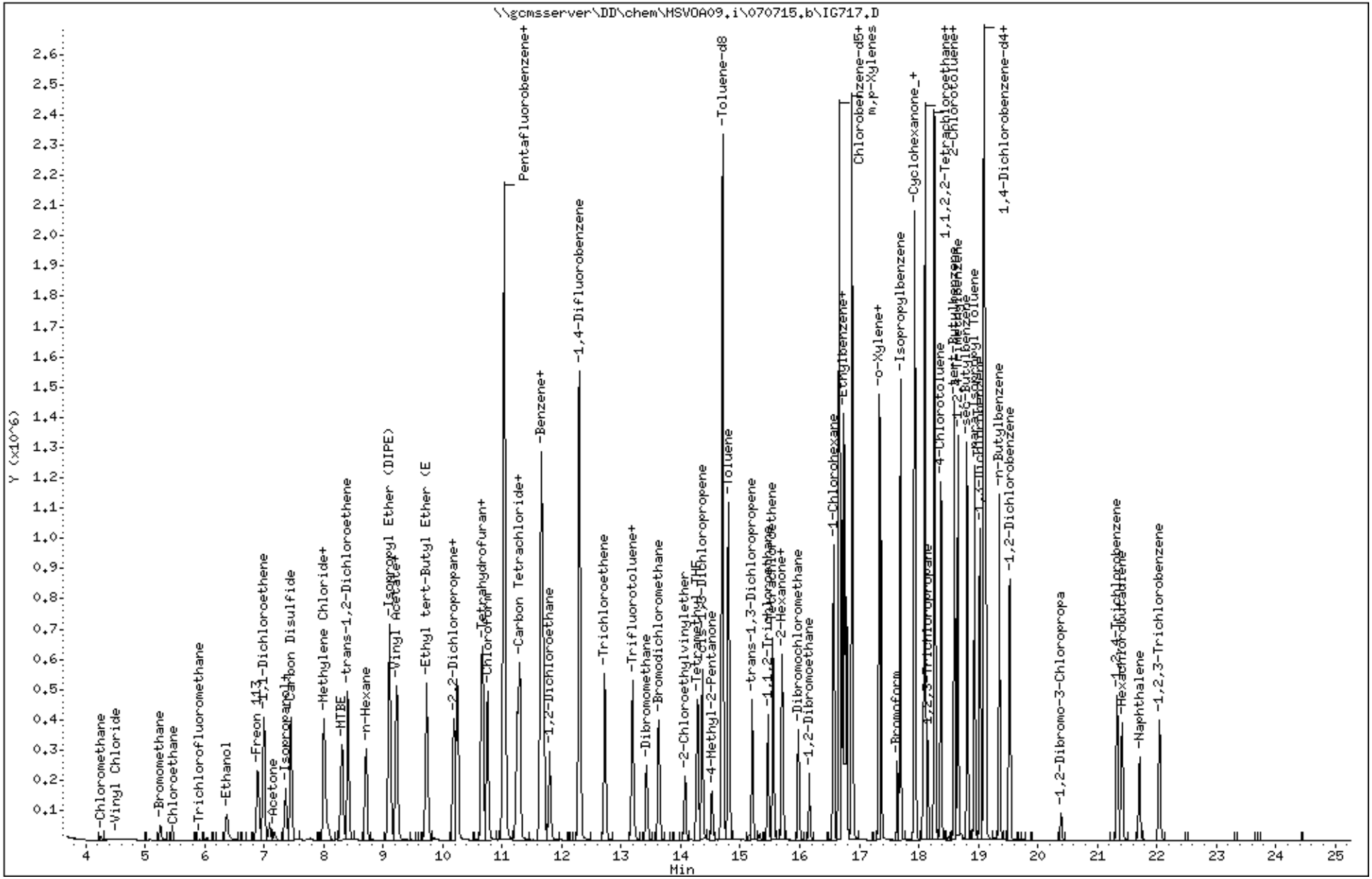
Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG716.D
Report Date: 08-Jul-2015 13:46

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
89 1,2,3-Trichlorobenzene	180	22.052	22.046	(1.155)	9893	1.79155	1.7915

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG717.D
Date : 07-JUL-2015 19:30
Client ID: DYNA P&T
Instrument: MSVOA09.i
Sample Info: icv,s27558,0.01/100,s27556,0.01/100
Purge Volume: 5.0
Operator: VOC
Column phase: RTx Volatiles
Column diameter: 0.25



Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG717.D
Report Date: 09-Jul-2015 11:11

Curtis & Tompkins, Ltd.

Data file : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG717.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 07-JUL-2015 19:30 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : icv,s27558,0.01/100,s27556,0.01/100
Misc Info : s27533,0.01/100
Comment :
Method : \\gcmsserver\DD\chem\MSVOA09.i\070715.b\826GOX9W.m
Meth Date : 09-Jul-2015 11:10 target Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 16
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.10
Processing Host: PC_MSVOA_WK01

Concentration Formula: Amt * DF * Uf/Vo * CpndVariable

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor
Cpnd Variable		Local Compound Variable

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.824	3.824	(0.346)	2821	0.19325	0.1932(a)
2 Chloromethane	50	4.257	4.268	(0.386)	17144	0.57104	0.5710
3 Vinyl Chloride	62	4.504	4.504	(0.408)	2094	0.12924	0.1292(a)
4 Bromomethane	94	5.262	5.263	(0.477)	43777	5.59794	5.5979
5 Chloroethane	64	5.469	5.470	(0.496)	779	0.08557	0.0855(a)
6 Trichlorofluoromethane	101	5.913	5.923	(0.536)	2527	0.15210	0.1521(a)
7 Ethanol	45	6.366	6.366	(0.577)	163318	2334.23	2334.2301(A)
8 Freon 113	101	6.889	6.889	(0.624)	165682	21.5592	21.5591
9 1,1-Dichloroethene	96	6.997	6.998	(0.634)	184439	23.3375	23.3374
10 Acetone	43	7.174	7.165	(0.650)	48671	22.7592	22.7592
11 Isopropanol	45	7.352	7.352	(0.666)	80562	222.452	222.4520(A)
12 Iodomethane	142	7.362	7.362	(0.667)	209511	21.9176	21.9176(A)
13 Carbon Disulfide	76	7.450	7.451	(0.675)	713324	21.0313	21.0312
14 Methylene Chloride	84	8.002	8.003	(0.725)	238806	23.4740	23.4739
15 tert-Butyl Alcohol (TBA)	59	8.071	8.071	(0.731)	53113	112.170	112.1697(A)
16 MTBE	73	8.308	8.308	(0.753)	419722	22.9914	22.9914
17 trans-1,2-Dichloroethene	96	8.406	8.407	(0.762)	221158	24.1420	24.1419
18 n-Hexane	57	8.712	8.712	(0.789)	174016	28.1295	28.1294(A)
19 Isopropyl Ether (DIPE)	45	9.106	9.097	(0.825)	1024897	22.5537	22.5536(A)
20 Vinyl Acetate	43	9.214	9.215	(0.835)	431069	26.6039	26.6038
21 1,1-Dichloroethane	63	9.234	9.225	(0.837)	471687	22.6780	22.6780
22 Ethyl tert-Butyl Ether (ETBE)	59	9.727	9.727	(0.881)	690318	22.5597	22.5597(A)

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG717.D
Report Date: 09-Jul-2015 11:11

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	23 2,2-Dichloropropane	77	10.190	10.191	(0.923)	330270	22.3931	22.3931
	24 cis-1,2-Dichloroethene	96	10.249	10.240	(0.929)	251102	24.7484	24.7484
	25 2-Butanone	43	10.229	10.230	(0.927)	74200	22.7807	22.7806
	26 Tetrahydrofuran	42	10.653	10.654	(0.965)	381206	221.787	221.7871(A)
	27 Bromochloromethane	128	10.673	10.674	(0.967)	115167	24.5593	24.5593
	28 Chloroform	83	10.752	10.752	(0.974)	455966	23.5238	23.5237
*	29 Pentafluorobenzene	168	11.038	11.038	(1.000)	1002052	50.0000	
	30 Dibromofluoromethane	113	11.038	11.038	(1.000)	623615	47.4373	47.4372
	31 1,1,1-Trichloroethane	97	11.028	11.028	(0.999)	351163	23.2360	23.2359
	32 Carbon Tetrachloride	117	11.254	11.255	(0.915)	313446	24.6378	24.6378
	33 1,1-Dichloropropene	75	11.294	11.294	(0.918)	326268	23.4891	23.4891
	34 Benzene	78	11.649	11.649	(0.947)	890819	24.5050	24.5050
	35 1,2-Dichloroethane-d4	65	11.668	11.669	(0.949)	507526	44.9815	44.9814
	36 Methyl tert-Amyl Ether (TAME)	73	11.688	11.689	(0.950)	501318	22.7046	22.7046(A)
	37 1,2-Dichloroethane	62	11.796	11.797	(0.959)	300453	23.6128	23.6127
*	38 1,4-Difluorobenzene	114	12.299	12.300	(1.000)	1551285	50.0000	
	39 Trichloroethene	95	12.723	12.723	(1.034)	232156	24.1825	24.1825
	40 Trifluorotoluene	146	13.176	13.177	(1.071)	1659	0.15344	0.1534(aA)
	41 1,2-Dichloropropane	63	13.186	13.187	(1.072)	253507	22.4591	22.4591
	42 Dibromomethane	93	13.423	13.423	(1.091)	132283	24.0583	24.0583
	43 Bromodichloromethane	83	13.629	13.630	(1.108)	313343	23.3630	23.3630
	44 2-Chloroethylvinylether	63	14.073	14.073	(1.144)	107884	24.2469	24.2468
	45 Tetramethyl THF	43	14.280	14.280	(1.161)	442437	20.8105	20.8105(A)
	46 cis-1,3-Dichloropropene	75	14.359	14.359	(1.167)	355209	23.9322	23.9322
	47 4-Methyl-2-Pentanone	43	14.526	14.517	(1.181)	170370	23.5433	23.5433
	48 Toluene-d8	98	14.704	14.704	(0.882)	1800902	48.7925	48.7924
	49 Toluene	92	14.802	14.802	(0.888)	516478	26.1303	26.1302
	50 trans-1,3-Dichloropropene	75	15.206	15.197	(0.912)	265308	22.3569	22.3568
	51 1,1,2-Trichloroethane	85	15.463	15.463	(0.928)	83237	24.6812	24.6811
	52 Tetrachloroethene	166	15.551	15.551	(0.933)	201384	26.3902	26.3902
	53 2-Hexanone	43	15.699	15.699	(0.942)	125658	24.9663	24.9663
	54 1,3-Dichloropropane	76	15.709	15.709	(0.943)	275941	25.3295	25.3295
	55 Dibromochloromethane	129	15.975	15.975	(0.959)	199553	25.0193	25.0193
	56 1,2-Dibromoethane	107	16.162	16.162	(0.970)	150525	24.5622	24.5622
	57 1-Chlorohexane	91	16.566	16.566	(0.994)	278596	26.4748	26.4748
*	58 Chlorobenzene-d5	117	16.665	16.665	(1.000)	1340011	50.0000	
	59 Chlorobenzene	112	16.694	16.695	(1.002)	565266	25.6870	25.6870
	60 Ethylbenzene	91	16.744	16.744	(1.005)	1000156	25.9601	25.9601
	61 1,1,1,2-Tetrachloroethane	131	16.783	16.783	(1.007)	207142	24.8507	24.8506
	62 m,p-Xylenes	106	16.882	16.882	(1.013)	732300	54.4275	54.4274
	63 o-Xylene	106	17.335	17.335	(1.040)	344810	26.0599	26.0599
	64 Styrene	104	17.365	17.364	(1.042)	601015	28.2443	28.2442
	65 Bromoform	173	17.641	17.641	(1.059)	107745	27.8477	27.8476
	66 Isopropylbenzene	105	17.690	17.690	(0.926)	903226	26.5301	26.5301
	67 Cyclohexanone_	55	17.916	17.936	(0.938)	49838	46.8095	46.8095(A)
	68 Bromofluorobenzene	95	17.936	17.936	(0.939)	668945	48.7860	48.7859
	69 1,1,2,2-Tetrachloroethane	83	18.084	18.074	(0.947)	168723	24.8624	24.8623
	70 Propylbenzene	91	18.104	18.104	(0.948)	1093697	26.4792	26.4791
	71 Bromobenzene	156	18.104	18.104	(0.948)	240947	26.9810	26.9810
	72 1,2,3-Trichloropropane	110	18.153	18.153	(0.950)	40693	25.6774	25.6773
	73 2-Chlorotoluene	91	18.261	18.262	(0.956)	747835	26.6441	26.6441
	74 1,3,5-Trimethylbenzene	105	18.271	18.271	(0.957)	759323	28.1494	28.1494
	75 4-Chlorotoluene	91	18.370	18.370	(0.962)	662760	25.7407	25.7407
	76 tert-Butylbenzene	119	18.597	18.597	(0.974)	628132	26.8342	26.8342

Data File: \\gcmsserver\DD\chem\MSVOA09.i\070715.b\IG717.D
Report Date: 09-Jul-2015 11:11

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
77 1,2,4-Trimethylbenzene	105	18.656	18.656	(0.977)	722080	27.0156	27.0156
78 sec-Butylbenzene	105	18.813	18.813	(0.985)	904225	25.8681	25.8681
79 para-Isopropyl Toluene	119	18.941	18.942	(0.992)	698039	26.4263	26.4262
80 1,3-Dichlorobenzene	146	19.030	19.030	(0.996)	397067	26.4318	26.4318
* 81 1,4-Dichlorobenzene-d4	152	19.099	19.099	(1.000)	693936	50.0000	
82 1,4-Dichlorobenzene	146	19.129	19.129	(1.002)	409037	26.1634	26.1633
83 n-Butylbenzene	91	19.355	19.355	(1.013)	636007	25.9681	25.9681
84 1,2-Dichlorobenzene	146	19.533	19.533	(1.023)	361294	26.4997	26.4996
85 1,2-Dibromo-3-Chloropropane	75	20.390	20.391	(1.068)	25407	24.3058	24.3058
86 1,2,4-Trichlorobenzene	180	21.336	21.336	(1.117)	175588	26.1278	26.1277
87 Hexachlorobutadiene	225	21.415	21.415	(1.121)	89400	26.1130	26.1130
88 Naphthalene	128	21.711	21.711	(1.137)	258434	23.5903	23.5903
89 1,2,3-Trichlorobenzene	180	22.046	22.046	(1.154)	156790	26.6049	26.6049

QC Flag Legend

a - Target compound detected but, quantitated amount Below Limit Of Quantitation(BLOQ).
A - Target compound detected but, quantitated amount exceeded maximum amount.

Continuing Calibration Verification Raw Data

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA08 IDF : 1.0
Seqnum : 475304292008.1 File : hgu08 Time : 30-JUL-2015 12:08
Cal : 475253923002 Caldate : 25-JUN-2015 Caltype : WATER
Standards: S26360 (25000X), S27559 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.4691	0.4400	20.00	18.76	ug/L	-6	20	0.1000	v+ ***
Chloromethane	0.7984	0.8754	20.00	21.93	ug/L	10	20	0.1000	
Vinyl Chloride	0.6642	0.6927	20.00	20.86	ug/L	4	20	0.1000	
Bromomethane	0.3569	0.3455	20.00	19.36	ug/L	-3	20	0.1000	
Chloroethane	0.4789	0.4292	20.00	17.92	ug/L	-10	20	0.1000	
Trichlorofluoromethane	0.7498	0.6491	20.00	17.31	ug/L	-13	20	0.1000	
Acetone	0.1763	0.1451	20.00	16.47	ug/L	-18	20	0.1000	
Freon 113	0.4380	0.3372	20.00	15.40	ug/L	**-23**	20	0.1000	c- v- ***
1,1-Dichloroethene	0.4652	0.3766	20.00	16.19	ug/L	-19	20	0.1000	
Methylene Chloride	0.5883	0.5293	20.00	17.99	ug/L	-10	20	0.1000	
Carbon Disulfide	1.9197	1.6308	20.00	16.99	ug/L	-15	20	0.1000	v- ***
MTBE	1.3099	1.1843	20.00	18.08	ug/L	-10	20	0.1000	
trans-1,2-Dichloroethene	0.5291	0.4729	20.00	17.88	ug/L	-11	20	0.1000	
Vinyl Acetate	0.8079	0.9759	20.00	24.16	ug/L	**21**	20	0.0500	c+ v+ ***
1,1-Dichloroethane	1.1779	1.1074	20.00	18.80	ug/L	-6	20	0.2000	
2-Butanone	0.2244	0.1986	20.00	17.70	ug/L	-11	20	0.1000	
2,2-Dichloropropane	0.7326	0.8278	20.00	22.60	ug/L	13	20	0.0500	
cis-1,2-Dichloroethene	0.5930	0.5452	20.00	18.39	ug/L	-8	20	0.1000	
Chloroform	1.0077	0.9423	20.00	18.70	ug/L	-6	20	0.2000	
Bromochloromethane	0.2784	0.2457	20.00	17.65	ug/L	-12	20	0.0500	
1,1,1-Trichloroethane	0.7213	0.6762	20.00	18.75	ug/L	-6	20	0.1000	
1,1-Dichloropropene	0.4966	0.4689	20.00	18.88	ug/L	-6	20	0.0500	
Carbon Tetrachloride	0.3839	0.3606	20.00	18.79	ug/L	-6	20	0.1000	
1,2-Dichloroethane	0.4749	0.4858	20.00	20.46	ug/L	2	20	0.1000	
Benzene	1.4114	1.2808	20.00	18.15	ug/L	-9	20	0.5000	
Trichloroethene	0.3451	0.3101	20.00	17.98	ug/L	-10	20	0.2000	
1,2-Dichloropropane	0.4377	0.4182	20.00	19.11	ug/L	-4	20	0.1000	
Bromodichloromethane	0.4845	0.4739	20.00	19.57	ug/L	-2	20	0.2000	
Dibromomethane	0.2104	0.1916	20.00	18.21	ug/L	-9	20	0.0500	
4-Methyl-2-Pentanone	0.3230	0.2656	20.00	16.45	ug/L	-18	20	0.1000	
cis-1,3-Dichloropropene	0.5891	0.5685	20.00	19.30	ug/L	-4	20	0.2000	
Toluene	0.9206	0.8179	20.00	17.77	ug/L	-11	20	0.4000	
trans-1,3-Dichloropropene	0.5580	0.5136	20.00	18.41	ug/L	-8	20	0.1000	
1,1,2-Trichloroethane	0.1704	0.1501	20.00	17.62	ug/L	-12	20	0.1000	
2-Hexanone	0.2611	0.2213	20.00	16.95	ug/L	-15	20	0.1000	
1,3-Dichloropropane	0.5589	0.5009	20.00	17.92	ug/L	-10	20	0.0500	
Tetrachloroethene	0.3631	0.3357	20.00	18.49	ug/L	-8	20	0.2000	
Dibromochloromethane	0.3917	0.3546	20.00	18.11	ug/L	-9	20	0.1000	
1,2-Dibromoethane	0.3104	0.2743	20.00	17.67	ug/L	-12	20	0.1000	
Chlorobenzene	1.0341	0.9907	20.00	19.16	ug/L	-4	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3771	0.3492	20.00	18.52	ug/L	-7	20	0.0500	
Ethylbenzene	1.7475	1.7009	20.00	19.47	ug/L	-3	20	0.1000	
m,p-Xylenes	0.6412	0.6184	40.00	38.58	ug/L	-4	20	0.1000	
o-Xylene	0.6535	0.6184	20.00	18.92	ug/L	-5	20	0.3000	
Styrene	1.0883	1.0447	20.00	19.20	ug/L	-4	20	0.3000	
Bromoform	0.2379	0.1923	20.00	16.17	ug/L	-19	20	0.1000	
Isopropylbenzene	3.0957	2.9717	20.00	19.20	ug/L	-4	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.6825	0.6128	20.00	17.96	ug/L	-10	20	0.3000	
1,2,3-Trichloropropane	0.1575	0.1366	20.00	17.35	ug/L	-13	20	0.0500	
Propylbenzene	3.6999	3.7466	20.00	20.25	ug/L	1	20	0.0500	
Bromobenzene	0.8605	0.8484	20.00	19.72	ug/L	-1	20	0.0500	
1,3,5-Trimethylbenzene	2.4787	2.4397	20.00	19.69	ug/L	-2	20	0.0500	
2-Chlorotoluene	2.5575	2.5850	20.00	20.22	ug/L	1	20	0.0500	
4-Chlorotoluene	2.2917	2.3107	20.00	20.17	ug/L	1	20	0.0500	
tert-Butylbenzene	2.2669	2.0980	20.00	18.51	ug/L	-7	20	0.0500	
1,2,4-Trimethylbenzene	2.5691	2.5780	20.00	20.07	ug/L	0	20	0.0500	
sec-Butylbenzene	3.3351	3.1672	20.00	18.99	ug/L	-5	20	0.0500	
para-Isopropyl Toluene	2.6261	2.6049	20.00	19.84	ug/L	-1	20	0.0500	
1,3-Dichlorobenzene	1.5310	1.4604	20.00	19.08	ug/L	-5	20	0.6000	
1,4-Dichlorobenzene	1.5176	1.4631	20.00	19.28	ug/L	-4	20	0.5000	
n-Butylbenzene	2.3327	2.3951	20.00	20.54	ug/L	3	20	0.0500	
1,2-Dichlorobenzene	1.4680	1.4040	20.00	19.13	ug/L	-4	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1094	0.0979	20.00	17.89	ug/L	-11	20	0.0500	
1,2,4-Trichlorobenzene	0.8434	0.7768	20.00	18.42	ug/L	-8	20	0.2000	
Hexachlorobutadiene	0.4036	0.4006	20.00	19.85	ug/L	-1	20	0.0500	
Naphthalene	1.6896	1.5104	20.00	17.88	ug/L	-11	20	0.0500	
1,2,3-Trichlorobenzene	0.7623	0.6858	20.00	17.99	ug/L	-10	20	0.0500	
Dibromofluoromethane	0.5429	0.5689	50.00	52.39	ug/L	5	20	0.0500	
1,2-Dichloroethane-d4	0.3471	0.3758	50.00	54.14	ug/L	8	20	0.0500	
Toluene-d8	1.2180	1.2181	50.00	50.00	ug/L	0	20	0.0500	
Bromofluorobenzene	0.9779	1.0037	50.00	51.32	ug/L	3	20	0.0500	

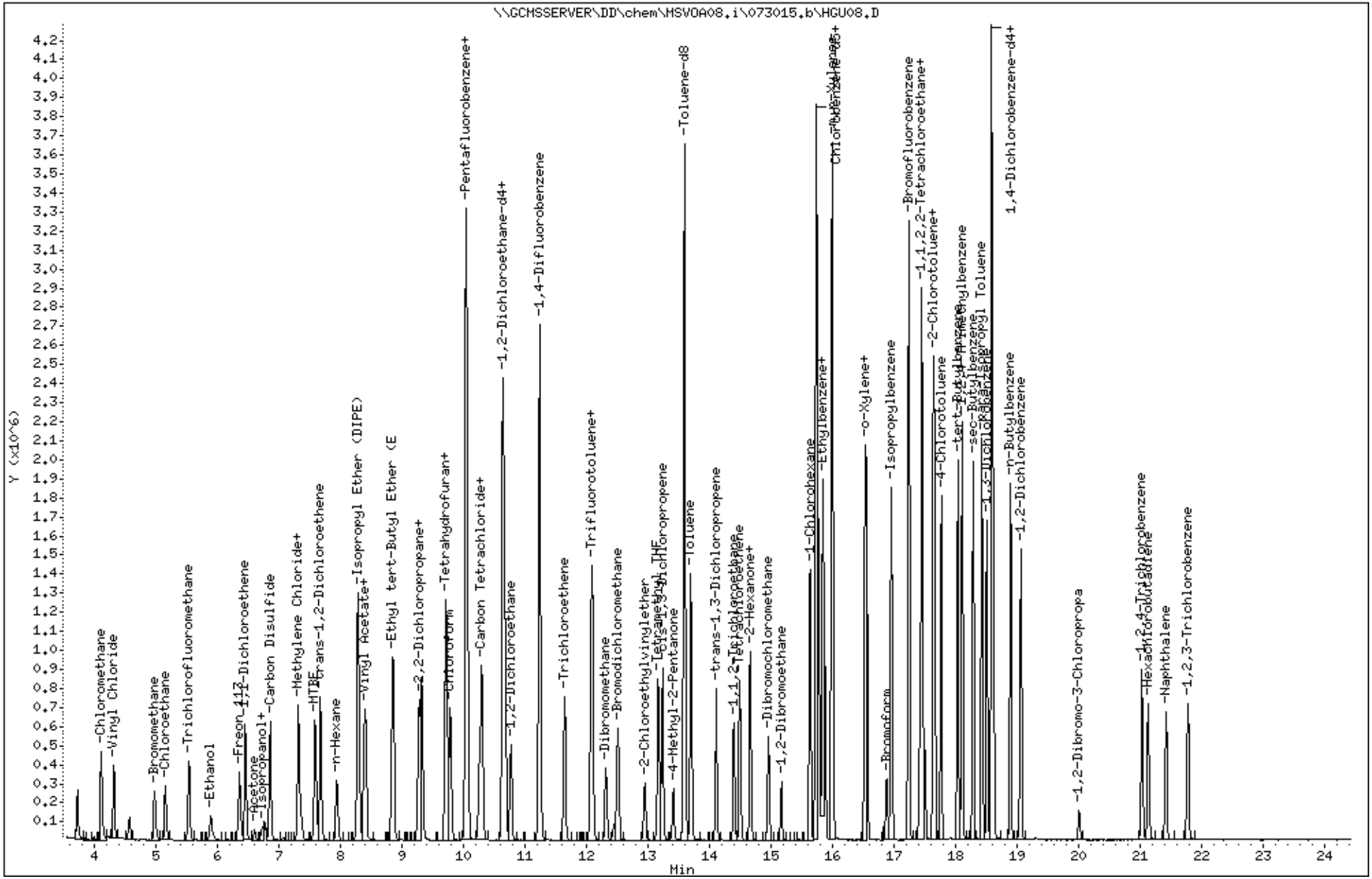
ISTD (ICAL hfp14)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	1032422	1602604	55.23	10.06	10.04	-0.02
1,4-Difluorobenzene	1647573	2511787	52.45	11.26	11.24	-0.02
Chlorobenzene-d5	1426621	2143831	50.27	15.76	15.74	-0.02
1,4-Dichlorobenzene-d4	722873	1112721	53.93	18.61	18.59	-0.02

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU08.D
Date : 30-JUL-2015 12:08
Client ID: DYNA P&T
Sample Info: ccv,s26360,.004/100,s27559,.004/100,s27699,
Purge Volume: 5.0
Column phase: RTX 624

Instrument: MSVOA08.i
Operator: VOC
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU08.D
Report Date: 30-Jul-2015 12:38

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU08.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 30-JUL-2015 12:08 MS Autotune Date: 23-JUN-2015 15:31
Operator : VOC Inst ID: MSVOA08.i
Smp Info : ccv,s26360,.004/100,s27559,.004/100,s27699,
Misc Info : .004/100,s26220,.004/100
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\826GOX8.m
Meth Date : 24-Jul-2015 12:55 Quant Type: ISTD
Cal Date : 25-JUN-2015 16:31 Cal File: HFP16.D
Als bottle: 8
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.717	3.718	(0.370)	282057	18.7588	18.7588
2 Chloromethane	50	4.101	4.103	(0.409)	561157	21.9272	21.9272
3 Vinyl Chloride	62	4.309	4.310	(0.429)	444026	20.8569	20.8569
4 Bromomethane	94	4.979	4.970	(0.496)	221484	19.3609	19.3608
5 Chloroethane	64	5.147	5.148	(0.513)	275164	17.9247	17.9247
6 Trichlorofluoromethane	101	5.532	5.533	(0.551)	416072	17.3120	17.3120
7 Ethanol	45	5.886	5.888	(0.586)	237288	1586.53	1586.5313
8 Freon 113	101	6.350	6.351	(0.633)	216190	15.4011	15.4011
9 1,1-Dichloroethene	96	6.449	6.460	(0.642)	241439	16.1921	16.1920
10 Acetone	43	6.597	6.598	(0.657)	93039	16.4689	16.4688
11 Isopropanol	45	6.725	6.726	(0.670)	119488	154.309	154.3085
12 Iodomethane	142	6.774	6.775	(0.675)	119389	15.4640	15.4640
13 Carbon Disulfide	76	6.853	6.854	(0.683)	1045442	16.9906	16.9906
14 Methylene Chloride	84	7.317	7.318	(0.729)	339282	17.9917	17.9916
15 tert-Butyl Alcohol (TBA)	59	7.356	7.357	(0.733)	159055	158.873	158.8731
16 MTBE	73	7.583	7.584	(0.755)	759207	18.0830	18.0830

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU08.D
Report Date: 30-Jul-2015 12:38

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	7.672	7.673	(0.764)	303171	17.8786	17.8786
	18 n-Hexane	57	7.938	7.939	(0.791)	165359	26.1998	26.1997
	19 Isopropyl Ether (DIPE)	45	8.283	8.284	(0.825)	1700542	19.2149	19.2149
	20 Vinyl Acetate	43	8.382	8.383	(0.835)	625589	24.1577	24.1576
	21 1,1-Dichloroethane	63	8.402	8.403	(0.837)	709893	18.8023	18.8022
	22 Ethyl tert-Butyl Ether (ETBE)	59	8.845	8.847	(0.881)	1225448	19.4883	19.4882
	23 2,2-Dichloropropane	77	9.279	9.281	(0.924)	530632	22.5970	22.5970
	24 2-Butanone	43	9.319	9.320	(0.928)	127305	17.7006	17.7005
	25 cis-1,2-Dichloroethene	96	9.329	9.330	(0.929)	349503	18.3894	18.3894
	26 Tetrahydrofuran	42	9.713	9.714	(0.968)	671468	174.449	174.4489
	27 Bromochloromethane	128	9.723	9.724	(0.969)	157475	17.6476	17.6475
	28 Chloroform	83	9.782	9.784	(0.974)	604025	18.7020	18.7019
*	29 Pentafluorobenzene	168	10.039	10.040	(1.000)	1602604	50.0000	
	30 Dibromofluoromethane	113	10.049	10.050	(1.001)	911676	52.3909	52.3908
	31 1,1,1-Trichloroethane	97	10.049	10.050	(1.001)	433470	18.7484	18.7484
	32 Carbon Tetrachloride	117	10.266	10.267	(0.913)	362341	18.7872	18.7871
	33 1,1-Dichloropropene	75	10.295	10.306	(0.916)	471068	18.8826	18.8826
	34 1,2-Dichloroethane-d4	65	10.650	10.651	(0.947)	944018	54.1391	54.1391
	35 Methyl tert-Amyl Ether (TAME)	73	10.670	10.671	(0.949)	848362	17.4794	17.4793
	36 Benzene	78	10.640	10.642	(0.946)	1286871	18.1498	18.1497
	37 1,2-Dichloroethane	62	10.769	10.770	(0.958)	488069	20.4592	20.4591
*	38 1,4-Difluorobenzene	114	11.242	11.233	(1.000)	2511787	50.0000	
	39 Trichloroethene	95	11.646	11.648	(1.036)	311581	17.9750	17.9749
	40 Trifluorotoluene	146	12.080	12.082	(1.075)	462495	18.0877	18.0876
	41 1,2-Dichloropropane	63	12.090	12.101	(1.075)	420213	19.1130	19.1129
	42 Dibromomethane	93	12.317	12.318	(1.096)	192519	18.2137	18.2137
	43 Bromodichloromethane	83	12.505	12.506	(1.112)	476159	19.5652	19.5651
	44 2-Chloroethylvinylether	63	12.948	12.950	(1.152)	150686	30.7482	30.7481
	45 Tetramethyl THF	43	13.165	13.166	(1.171)	741819	16.8196	16.8195
	46 cis-1,3-Dichloropropene	75	13.234	13.236	(1.177)	571179	19.2996	19.2995
	47 4-Methyl-2-Pentanone	43	13.412	13.413	(1.193)	266879	16.4480	16.4479
	48 Toluene-d8	98	13.589	13.591	(0.863)	2611439	50.0039	50.0039
	49 Toluene	92	13.698	13.699	(0.870)	701352	17.7675	17.7674
	50 trans-1,3-Dichloropropene	75	14.112	14.113	(0.897)	440386	18.4055	18.4054
	51 1,1,2-Trichloroethane	85	14.398	14.399	(0.915)	128689	17.6183	17.6183
	52 Tetrachloroethene	166	14.497	14.498	(0.921)	287873	18.4905	18.4904
	53 2-Hexanone	43	14.665	14.666	(0.932)	189810	16.9542	16.9542
	54 1,3-Dichloropropane	76	14.665	14.666	(0.932)	429558	17.9241	17.9240
	55 Dibromochloromethane	129	14.960	14.962	(0.950)	304111	18.1057	18.1056
	56 1,2-Dibromoethane	107	15.168	15.169	(0.964)	235195	17.6719	17.6718
	57 1-Chlorohexane	91	15.641	15.642	(0.994)	443312	19.1089	19.1089
*	58 Chlorobenzene-d5	117	15.740	15.741	(1.000)	2143831	50.0000	
	59 Chlorobenzene	112	15.779	15.780	(1.002)	849552	19.1603	19.1602
	60 Ethylbenzene	91	15.838	15.839	(1.006)	1458611	19.4670	19.4669
	61 1,1,1,2-Tetrachloroethane	131	15.878	15.879	(1.009)	299466	18.5193	18.5192
	62 m,p-Xylenes	106	15.996	15.997	(1.016)	1060600	38.5759	38.5759
	63 o-Xylene	106	16.529	16.530	(1.050)	530284	18.9240	18.9239

Data File: \\GCMSSERVER\DD\chem\MSVOA08.i\073015.b\HGU08.D
Report Date: 30-Jul-2015 12:38

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	16.558	16.559	(1.052)	895894	19.1988	19.1987
65 Bromoform	173	16.884	16.885	(1.073)	164900	16.1665	16.1665
66 Isopropylbenzene	105	16.963	16.954	(0.912)	1322684	19.1989	19.1988
67 Bromofluorobenzene	95	17.239	17.240	(0.927)	1116783	51.3154	51.3154
68 1,1,2,2-Tetrachloroethane	83	17.416	17.417	(0.937)	272731	17.9550	17.9550
69 Bromobenzene	156	17.446	17.447	(0.938)	377599	19.7183	19.7183
70 Propylbenzene	91	17.456	17.457	(0.939)	1667570	20.2522	20.2521
71 1,2,3-Trichloropropane	110	17.505	17.506	(0.942)	60786	17.3473	17.3473
72 2-Chlorotoluene	91	17.633	17.634	(0.949)	1150561	20.2153	20.2152
73 1,3,5-Trimethylbenzene	105	17.653	17.654	(0.950)	1085894	19.6856	19.6856
74 4-Chlorotoluene	91	17.771	17.772	(0.956)	1028483	20.1661	20.1661
75 tert-Butylbenzene	119	18.038	18.039	(0.970)	933811	18.5105	18.5104
76 1,2,4-Trimethylbenzene	105	18.107	18.108	(0.974)	1147450	20.0697	20.0696
77 sec-Butylbenzene	105	18.284	18.285	(0.984)	1409703	18.9935	18.9935
78 para-Isopropyl Toluene	119	18.432	18.433	(0.992)	1159430	19.8389	19.8388
79 1,3-Dichlorobenzene	146	18.511	18.512	(0.996)	650027	19.0781	19.0781
* 80 1,4-Dichlorobenzene-d4	152	18.590	18.591	(1.000)	1112721	50.0000	
81 1,4-Dichlorobenzene	146	18.620	18.621	(1.002)	651198	19.2815	19.2815
82 n-Butylbenzene	91	18.896	18.897	(1.016)	1066040	20.5355	20.5355
83 1,2-Dichlorobenzene	146	19.063	19.065	(1.025)	624910	19.1286	19.1285
84 1,2-Dibromo-3-Chloropropane	75	20.010	20.011	(1.076)	43552	17.8870	17.8870
85 1,2,4-Trichlorobenzene	180	21.036	21.037	(1.132)	345749	18.4200	18.4200
86 Hexachlorobutadiene	225	21.135	21.136	(1.137)	178313	19.8527	19.8526
87 Naphthalene	128	21.430	21.432	(1.153)	672261	17.8785	17.8784
88 1,2,3-Trichlorobenzene	180	21.786	21.777	(1.172)	305255	17.9948	17.9947

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : 20PPB IDF : 1.0
Seqnum : 485305964004.1 File : igv04 Time : 31-JUL-2015 12:35
Cal : 485271359002 Caldate : 07-JUL-2015 Caltype : WATER
Standards: S26360 (25000X), S27823 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.7284	0.7796	20.00	21.41	ug/L	7	20	0.1000	v- ***
Chloromethane	1.1081	1.1009	20.00	21.77	ug/L	9	20	0.1000	
Vinyl Chloride	0.8085	0.8720	20.00	21.57	ug/L	8	20	0.1000	
Bromomethane	0.3902	0.4069	20.00	20.86	ug/L	4	20	0.1000	
Chloroethane	0.4543	0.4776	20.00	21.03	ug/L	5	20	0.1000	
Trichlorofluoromethane	0.8290	0.8434	20.00	20.35	ug/L	2	20	0.1000	
Acetone	0.1067	0.1221	20.00	22.88	ug/L	14	20	0.1000	
Freon 113	0.3835	0.3650	20.00	19.03	ug/L	-5	20	0.1000	
1,1-Dichloroethene	0.3943	0.3947	20.00	20.02	ug/L	0	20	0.1000	
Methylene Chloride	0.5076	0.5219	20.00	20.56	ug/L	3	20	0.1000	
Carbon Disulfide	1.6924	1.6734	20.00	19.78	ug/L	-1	20	0.1000	
MTBE	0.9109	0.9355	20.00	20.54	ug/L	3	20	0.1000	
trans-1,2-Dichloroethene	0.4571	0.4646	20.00	20.33	ug/L	2	20	0.1000	
Vinyl Acetate	0.8085	1.0786	20.00	26.68	ug/L	**33**	20	0.0500	c+ ***
1,1-Dichloroethane	1.0378	1.1518	20.00	22.20	ug/L	11	20	0.2000	
2-Butanone	0.1625	0.1803	20.00	22.19	ug/L	11	20	0.1000	
2,2-Dichloropropane	0.7359	0.8599	20.00	23.37	ug/L	17	20	0.0500	
cis-1,2-Dichloroethene	0.5063	0.5354	20.00	21.15	ug/L	6	20	0.1000	
Chloroform	0.9672	1.0563	20.00	21.84	ug/L	9	20	0.2000	
Bromochloromethane	0.2340	0.2350	20.00	20.09	ug/L	0	20	0.0500	
1,1,1-Trichloroethane	0.7541	0.8352	20.00	22.15	ug/L	11	20	0.1000	
1,1-Dichloropropene	0.4477	0.4121	20.00	18.41	ug/L	-8	20	0.0500	
Carbon Tetrachloride	0.4101	0.3966	20.00	19.35	ug/L	-3	20	0.1000	
1,2-Dichloroethane	0.4101	0.4071	20.00	19.85	ug/L	-1	20	0.1000	
Benzene	1.1717	1.1500	20.00	19.63	ug/L	-2	20	0.5000	
Trichloroethene	0.3094	0.2819	20.00	18.22	ug/L	-9	20	0.2000	
1,2-Dichloropropane	0.3638	0.3571	20.00	19.63	ug/L	-2	20	0.1000	
Bromodichloromethane	0.4323	0.4245	20.00	19.64	ug/L	-2	20	0.2000	
Dibromomethane	0.1772	0.1688	20.00	19.05	ug/L	-5	20	0.0500	
4-Methyl-2-Pentanone	0.2332	0.2271	20.00	19.47	ug/L	-3	20	0.1000	
cis-1,3-Dichloropropene	0.4784	0.4707	20.00	19.68	ug/L	-2	20	0.2000	
Toluene	0.7375	0.6647	20.00	18.02	ug/L	-10	20	0.4000	
trans-1,3-Dichloropropene	0.4428	0.3940	20.00	17.79	ug/L	-11	20	0.1000	
1,1,2-Trichloroethane	0.1258	0.1128	20.00	17.93	ug/L	-10	20	0.1000	
2-Hexanone	0.1878	0.1654	20.00	17.62	ug/L	-12	20	0.1000	
1,3-Dichloropropane	0.4065	0.3516	20.00	17.30	ug/L	-14	20	0.0500	
Tetrachloroethene	0.2847	0.2108	20.00	14.80	ug/L	**-26**	20	0.2000	c- ***
Dibromochloromethane	0.2976	0.2620	20.00	17.60	ug/L	-12	20	0.1000	
1,2-Dibromoethane	0.2287	0.1933	20.00	16.91	ug/L	-15	20	0.1000	
Chlorobenzene	0.8211	0.7064	20.00	17.21	ug/L	-14	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3110	0.2498	20.00	16.06	ug/L	-20	20	0.0500	
Ethylbenzene	1.4375	1.2121	20.00	16.86	ug/L	-16	20	0.1000	
m,p-Xylenes	0.5020	0.4476	40.00	35.67	ug/L	-11	20	0.1000	
o-Xylene	0.4937	0.4224	20.00	17.11	ug/L	-14	20	0.3000	
Styrene	0.7940	0.7454	20.00	18.78	ug/L	-6	20	0.3000	
Bromoform	0.1444	0.1317	20.00	18.25	ug/L	-9	20	0.1000	
Isopropylbenzene	2.4531	1.9756	20.00	16.11	ug/L	-19	20	0.1000	

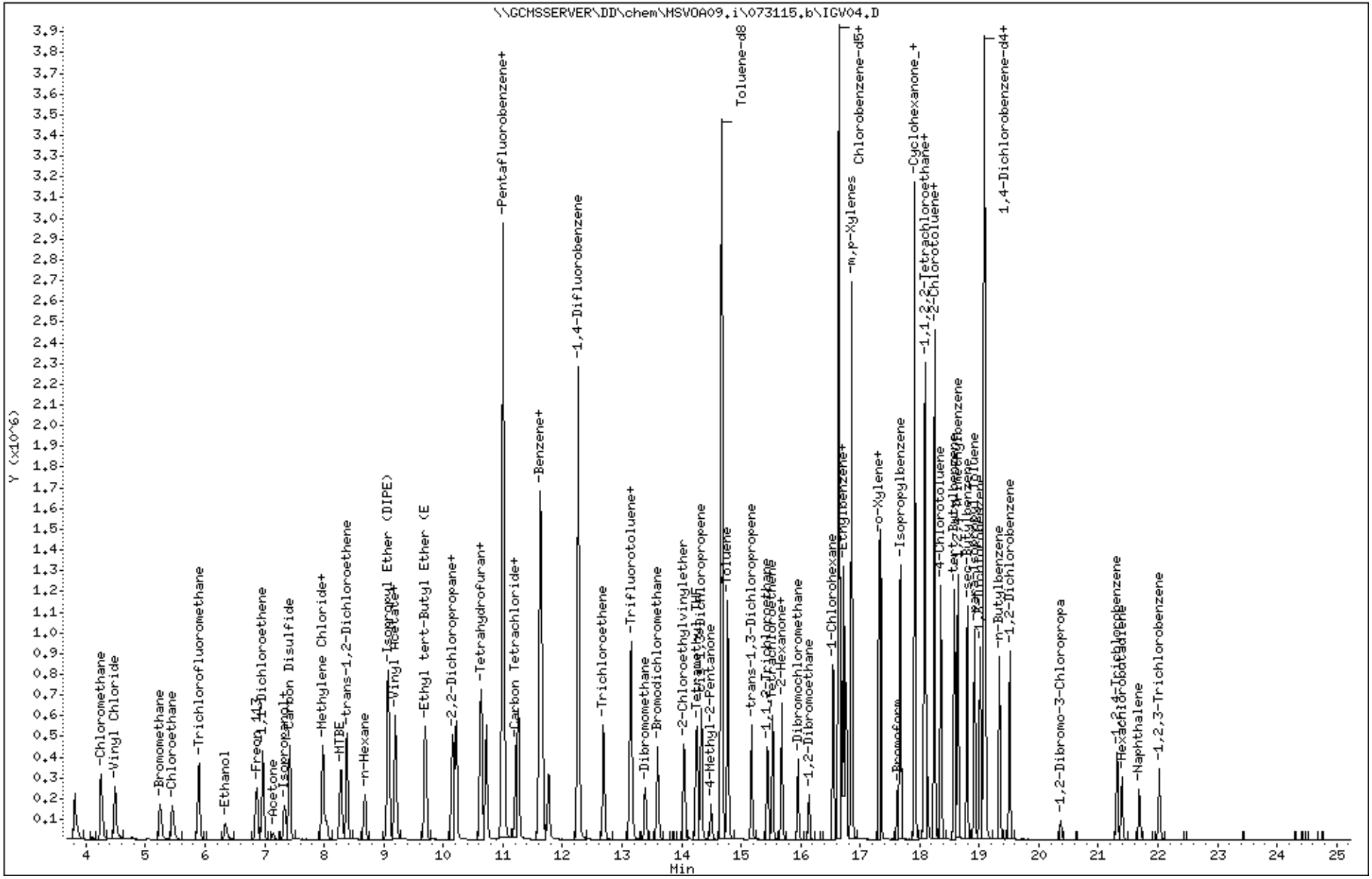
Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.4890	0.4297	20.00	17.58	ug/L	-12	20	0.3000	
1,2,3-Trichloropropane	0.1142	0.0984	20.00	17.24	ug/L	-14	20	0.0500	
Propylbenzene	2.9761	2.4140	20.00	16.22	ug/L	-19	20	0.0500	
Bromobenzene	0.6434	0.5537	20.00	17.21	ug/L	-14	20	0.0500	
1,3,5-Trimethylbenzene	1.9436	1.5641	20.00	16.09	ug/L	-20	20	0.0500	
2-Chlorotoluene	2.0223	1.7476	20.00	17.28	ug/L	-14	20	0.0500	
4-Chlorotoluene	1.8552	1.5561	20.00	16.78	ug/L	-16	20	0.0500	
tert-Butylbenzene	1.6866	1.2426	20.00	14.73	ug/L	**-26**	20	0.0500	c- ***
1,2,4-Trimethylbenzene	1.9258	1.5528	20.00	16.13	ug/L	-19	20	0.0500	
sec-Butylbenzene	2.5186	1.8402	20.00	14.61	ug/L	**-27**	20	0.0500	c- ***
para-Isopropyl Toluene	1.9032	1.3630	20.00	14.32	ug/L	**-28**	20	0.0500	c- ***
1,3-Dichlorobenzene	1.0824	0.8903	20.00	16.45	ug/L	-18	20	0.6000	
1,4-Dichlorobenzene	1.1265	0.9781	20.00	17.37	ug/L	-13	20	0.5000	
n-Butylbenzene	1.7647	1.2454	20.00	14.11	ug/L	**-29**	20	0.0500	c- ***
1,2-Dichlorobenzene	0.9824	0.8372	20.00	17.04	ug/L	-15	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.0753	0.0648	20.00	17.22	ug/L	-14	20	0.0500	
1,2,4-Trichlorobenzene	0.4842	0.3455	20.00	14.27	ug/L	**-29**	20	0.2000	c- ***
Hexachlorobutadiene	0.2467	0.1603	20.00	12.99	ug/L	**-35**	20	0.0500	c- ***
Naphthalene	0.7893	0.5369	20.00	13.60	ug/L	**-32**	20	0.0500	c- ***
1,2,3-Trichlorobenzene	0.4246	0.3064	20.00	14.43	ug/L	**-28**	20	0.0500	c- ***
Dibromofluoromethane	0.6560	0.7598	50.00	57.92	ug/L	16	20	0.0500	
1,2-Dichloroethane-d4	0.3637	0.4146	50.00	57.01	ug/L	14	20	0.0500	
Toluene-d8	1.3772	1.3423	50.00	48.73	ug/L	-3	20	0.0500	
Bromofluorobenzene	0.9880	0.9827	50.00	49.73	ug/L	-1	20	0.0500	

ISTD (ICAL ig713)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	987439	1158431	17.32	11.04	11.00	-0.04
1,4-Difluorobenzene	1506110	2022004	34.25	12.30	12.27	-0.03
Chlorobenzene-d5	1326780	1944148	46.53	16.67	16.64	-0.03
1,4-Dichlorobenzene-d4	740445	1008685	36.23	19.10	19.09	-0.01

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV04.D
Date : 31-JUL-2015 12:35
Client ID: DYNA P&T
Instrument: MSVOA09.i
Sample Info: ccv,s26360,.004/100,s27823,.004/100
Purge Volume: 5.0
Operator: VOC
Column phase: RTx Volatiles
Column diameter: 0.25



Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV04.D
Report Date: 31-Jul-2015 12:54

Curtis & Tompkins, Ltd.

Data file : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV04.D
Lab Smp Id: Client Smp ID: DYNA P&T
Inj Date : 31-JUL-2015 12:35 MS Autotune Date: 03-JUN-2015 12:18
Operator : VOC Inst ID: MSVOA09.i
Smp Info : ccv,s26360,.004/100,s27823,.004/100
Misc Info : s27699,.004/100,s26220,.004/100,20ppb
Comment :
Method : \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\826GOX9W.m
Meth Date : 09-Jul-2015 11:11 Quant Type: ISTD
Cal Date : 07-JUL-2015 18:21 Cal File: IG715.D
Als bottle: 4
Dil Factor: 1.00000
Integrator: HP RTE Compound Sublist: all.sub
Target Version: 4.03
Processing Host: GCMSSERVER

Concentration Formula: Amt * DF * Uf/Vo

Name	Value	Description
DF	1.000	Dilution Factor
Vo	5.000	Sample Volume purged (mL)
Uf	5.000	ng unit correction factor

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
1 Freon 12	85	3.810	3.824	(0.346)	361238	21.4053	21.4052
2 Chloromethane	50	4.254	4.268	(0.387)	510143	21.7695	21.7695
3 Vinyl Chloride	62	4.490	4.504	(0.408)	404053	21.5718	21.5717
4 Bromomethane	94	5.249	5.263	(0.477)	188558	20.8568	20.8567
5 Chloroethane	64	5.456	5.470	(0.496)	221328	21.0293	21.0293
6 Trichlorofluoromethane	101	5.899	5.923	(0.536)	390800	20.3472	20.3471
7 Ethanol	45	6.343	6.367	(0.576)	159244	1968.77	1968.7689
8 Freon 113	101	6.865	6.889	(0.624)	169108	19.0345	19.0344
9 1,1-Dichloroethene	96	6.974	6.998	(0.634)	182885	20.0171	20.0171
10 Acetone	43	7.141	7.165	(0.649)	56560	22.8781	22.8781
11 Isopropanol	45	7.319	7.352	(0.665)	81448	194.541	194.5408
12 Iodomethane	142	7.338	7.362	(0.667)	220287	19.9341	19.9340
13 Carbon Disulfide	76	7.417	7.451	(0.674)	775400	19.7754	19.7753
14 Methylene Chloride	84	7.979	8.003	(0.725)	241830	20.5623	20.5623
15 tert-Butyl Alcohol (TBA)	59	8.038	8.072	(0.730)	105151	192.092	192.0916
16 MTBE	73	8.274	8.308	(0.752)	433464	20.5389	20.5389

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV04.D
Report Date: 31-Jul-2015 12:54

	Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
	17 trans-1,2-Dichloroethene	96	8.383	8.407	(0.762)	215267	20.3268	20.3268
	18 n-Hexane	57	8.688	8.712	(0.790)	125506	17.5492	17.5492
	19 Isopropyl Ether (DIPE)	45	9.073	9.097	(0.824)	1159482	22.0710	22.0709
	20 Vinyl Acetate	43	9.181	9.215	(0.834)	499801	26.6818	26.6818
	21 1,1-Dichloroethane	63	9.201	9.225	(0.836)	533728	22.1969	22.1968
	22 Ethyl tert-Butyl Ether (ETBE)	59	9.694	9.727	(0.881)	742488	20.9891	20.9891
	23 2,2-Dichloropropane	77	10.157	10.191	(0.923)	398473	23.3704	23.3703
	24 cis-1,2-Dichloroethene	96	10.216	10.240	(0.928)	248067	21.1489	21.1488
	25 2-Butanone	43	10.206	10.230	(0.927)	83538	22.1855	22.1854
	26 Tetrahydrofuran	42	10.620	10.654	(0.965)	441015	221.947	221.9473
	27 Bromochloromethane	128	10.650	10.674	(0.968)	108897	20.0875	20.0875
	28 Chloroform	83	10.719	10.752	(0.974)	489457	21.8429	21.8428
*	29 Pentafluorobenzene	168	11.004	11.038	(1.000)	1158431	50.0000	
	30 Dibromofluoromethane	113	11.004	11.038	(1.000)	880185	57.9158	57.9158
	31 1,1,1-Trichloroethane	97	10.995	11.028	(0.999)	387010	22.1511	22.1510
	32 Carbon Tetrachloride	117	11.221	11.255	(0.915)	320789	19.3450	19.3450
	33 1,1-Dichloropropene	75	11.261	11.294	(0.918)	333271	18.4077	18.4076
	34 Benzene	78	11.615	11.649	(0.947)	930094	19.6292	19.6291
	35 1,2-Dichloroethane-d4	65	11.635	11.669	(0.949)	838361	57.0055	57.0054
	36 Methyl tert-Amyl Ether (TAME)	73	11.655	11.689	(0.950)	559954	19.4565	19.4564
	37 1,2-Dichloroethane	62	11.763	11.797	(0.959)	329234	19.8511	19.8511
*	38 1,4-Difluorobenzene	114	12.266	12.300	(1.000)	2022004	50.0000	
	39 Trichloroethene	95	12.690	12.723	(1.035)	228012	18.2218	18.2217
	40 Trifluorotoluene	146	13.143	13.177	(1.072)	234587	16.6461	16.6460
	41 1,2-Dichloropropane	63	13.163	13.187	(1.073)	288794	19.6291	19.6291
	42 Dibromomethane	93	13.389	13.423	(1.092)	136538	19.0514	19.0514
	43 Bromodichloromethane	83	13.596	13.630	(1.108)	343311	19.6384	19.6384
	44 2-Chloroethylvinylether	63	14.040	14.074	(1.145)	232336	40.0613	40.0613
	45 Tetramethyl THF	43	14.257	14.281	(1.162)	531205	19.1692	19.1691
	46 cis-1,3-Dichloropropene	75	14.335	14.359	(1.169)	380666	19.6767	19.6767
	47 4-Methyl-2-Pentanone	43	14.493	14.517	(1.182)	183673	19.4729	19.4728
	48 Toluene-d8	98	14.670	14.704	(0.882)	2609722	48.7344	48.7344
	49 Toluene	92	14.779	14.803	(0.888)	516875	18.0243	18.0242
	50 trans-1,3-Dichloropropene	75	15.183	15.197	(0.912)	306371	17.7946	17.7946
	51 1,1,2-Trichloroethane	85	15.439	15.463	(0.928)	87734	17.9307	17.9306
	52 Tetrachloroethene	166	15.528	15.552	(0.933)	163896	14.8036	14.8035
	53 2-Hexanone	43	15.676	15.700	(0.942)	128637	17.6161	17.6161
	54 1,3-Dichloropropane	76	15.686	15.710	(0.943)	273398	17.2976	17.2975
	55 Dibromochloromethane	129	15.962	15.976	(0.959)	203715	17.6043	17.6043
	56 1,2-Dibromoethane	107	16.139	16.163	(0.970)	150327	16.9073	16.9073
	57 1-Chlorohexane	91	16.553	16.567	(0.995)	234468	15.3576	15.3575
*	58 Chlorobenzene-d5	117	16.642	16.665	(1.000)	1944148	50.0000	
	59 Chlorobenzene	112	16.681	16.695	(1.002)	549377	17.2072	17.2071
	60 Ethylbenzene	91	16.730	16.744	(1.005)	942639	16.8641	16.8641
	61 1,1,1,2-Tetrachloroethane	131	16.770	16.784	(1.008)	194258	16.0630	16.0630
	62 m,p-Xylenes	106	16.858	16.882	(1.013)	696207	35.6653	35.6653
	63 o-Xylene	106	17.322	17.336	(1.041)	328518	17.1132	17.1132

Data File: \\GCMSSERVER\DD\chem\MSVOA09.i\073115.b\IGV04.D
Report Date: 31-Jul-2015 12:54

Compounds	QUANT SIG MASS	RT	EXP RT	REL RT	RESPONSE	CONCENTRATIONS ON-COLUMN (ug/L)	FINAL (UG/L)
64 Styrene	104	17.341	17.365	(1.042)	579698	18.7770	18.7770
65 Bromoform	173	17.627	17.641	(1.059)	102455	18.2519	18.2518
66 Isopropylbenzene	105	17.676	17.690	(0.926)	797105	16.1073	16.1072
67 Cyclohexanone_	55	17.913	17.937	(0.939)	4094	2.64560	2.6455
68 Bromofluorobenzene	95	17.913	17.937	(0.939)	991262	49.7344	49.7343
69 1,1,2,2-Tetrachloroethane	83	18.061	18.075	(0.946)	173384	17.5769	17.5768
70 Propylbenzene	91	18.090	18.104	(0.948)	973996	16.2229	16.2228
71 Bromobenzene	156	18.090	18.104	(0.948)	223408	17.2107	17.2107
72 1,2,3-Trichloropropane	110	18.130	18.154	(0.950)	39708	17.2376	17.2376
73 2-Chlorotoluene	91	18.248	18.262	(0.956)	705123	17.2832	17.2831
74 1,3,5-Trimethylbenzene	105	18.248	18.272	(0.956)	631074	16.0949	16.0948
75 4-Chlorotoluene	91	18.356	18.370	(0.962)	627859	16.7761	16.7760
76 tert-Butylbenzene	119	18.583	18.597	(0.974)	501354	14.7349	14.7348
77 1,2,4-Trimethylbenzene	105	18.642	18.656	(0.977)	626511	16.1258	16.1258
78 sec-Butylbenzene	105	18.800	18.814	(0.985)	742472	14.6128	14.6127
79 para-Isopropyl Toluene	119	18.918	18.942	(0.991)	549938	14.3230	14.3230
80 1,3-Dichlorobenzene	146	19.017	19.031	(0.996)	359208	16.4503	16.4503
* 81 1,4-Dichlorobenzene-d4	152	19.086	19.100	(1.000)	1008685	50.0000	
82 1,4-Dichlorobenzene	146	19.105	19.129	(1.001)	394653	17.3664	17.3664
83 n-Butylbenzene	91	19.342	19.356	(1.013)	502495	14.1148	14.1147
84 1,2-Dichlorobenzene	146	19.509	19.533	(1.022)	337787	17.0446	17.0445
85 1,2-Dibromo-3-Chloropropane	75	20.367	20.391	(1.067)	26158	17.2162	17.2162
86 1,2,4-Trichlorobenzene	180	21.313	21.337	(1.117)	139414	14.2718	14.2718
87 Hexachlorobutadiene	225	21.392	21.416	(1.121)	64658	12.9929	12.9929
88 Naphthalene	128	21.687	21.711	(1.136)	216633	13.6042	13.6041
89 1,2,3-Trichlorobenzene	180	22.022	22.046	(1.154)	123610	14.4299	14.4298

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 268557
ANALYTICAL REPORT
Metals

Versar, Inc. 100 Hartsfield Centre Parkway Atlanta, GA 30354	Project : N62473-11-D-2215 Location : BGMP Mins Level : IV Contract # : N62473-11-D-2215

Sample ID	Lab ID
DIC85W07-072815	268557-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 08/11/2015

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE
METALS (EPA 6010C)

Laboratory number:	**268557**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**BGMP Mins**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 07/29/15. See attached cooler receipt form for any sample receipt problems or discrepancies.

All qualified data are compliant with appropriate corrective actions specified in Standard Operating Procedures. The Standard Operating Procedures are available upon request.

Manual integration documentation may be found in the "Case Narrative Addendum: Manual Integrations" sections.

Metals (EPA 6010C):
High recovery was observed for arsenic in the post digest spike of DIC85W06-072815 (lab # 268556-002); the BS/BSD were within limits.

No other analytical problems were encountered.

Chain of Custody

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 268557

Chain of Custody # _____

Project No: N62473-11-D-2215
Sampler: M. Mandell
Project Name: BGMP Mines
Report To: T. Chuhay
Project P. O. No: ATL14-001-01-004-CT
Company: JMW / ERRG
EDD Format: Report Level ☐ II ☐ III ☑ IV
Telephone: 404-443-2777
Turnaround Time: ☐ RUSH _____ ☑ Standard
Email:

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid	MATRIX	MATRIX	# of Containers	CHEMICAL PRESERVATIVE HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST VOCs (8260)	As, Fe, Mn (6010)	Mg/MSL
	DIL-SSW07-072515	072515	1431	X				12	9				3	X	X	X

Notes:
Lab filter on metals analysis

SAMPLE RECEIPT
☐ Intact
☐ Cold
☑ On Ice
☐ Ambient

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:
M. Mandell	7/29/15	1508	Pat Tanny	7/29/15	1508

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 268577 Date Received 7/29/15 Number of coolers 1
Client JMW/ERRG Project N62473-11-D-2215

Date Opened 7/29 By (print) FBI (sign)
Date Logged in 7/29 By (print) (sign)

1. Did cooler come with a shipping slip (airbill, etc) YES NO
   Shipping info
2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

   ☐ Bubble Wrap ☒ Foam blocks ☒ Bags ☐ None
   ☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C

   Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.5°

   ☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

   ☐ Samples received on ice directly from the field. Cooling process had begun
8. Were Method 5035 sampling containers present? YES NO
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are there any missing / extra samples? YES NO
11. Are samples in the appropriate containers for indicated tests? YES NO
12. Are sample labels present, in good condition and complete? YES NO
13. Do the sample labels agree with custody papers? YES NO
14. Was sufficient amount of sample sent for tests requested? YES NO
15. Are the samples appropriately preserved? YES NO N/A
16. Did you check preservatives for all bottles for each sample? YES NO N/A
17. Did you document your preservative check? YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? YES NO N/A
21. Was the client contacted concerning this sample delivery? YES NO
   If YES, Who was called? By Date:

COMMENTS

Rev 10, 9/12

Results & QC Summary

Curtis & Tompkins, Ltd.

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Sampled:	07/28/15
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000	Analyzed:	08/03/15
Batch#:	225705		

Type: SAMPLE Lab ID: 268557-001

Analyte	Result	LOQ	DL
Arsenic	13	5.0	1.5
Iron	330	100	20
Manganese	2,000	5.0	1.0

Type: BLANK Lab ID: QC797930

Analyte	Result	LOQ	DL
Arsenic	4.0 U	5.0	1.5
Iron	50 U	100	20
Manganese	2.5 U	5.0	1.0

Type: BLANK Lab ID: QC797931

Analyte	Result	LOQ	DL
Arsenic	4.0 U	5.0	1.5
Iron	50 U	100	20
Manganese	2.5 U	5.0	1.0

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Matrix:	Filtrate	Batch#:	225705
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000	Analyzed:	08/03/15

Type: BS Lab ID: QC797932

Analyte	Spiked	Result	%REC	Limits
Arsenic	100.0	95.49	95	80-120
Iron	10,000	10,350	104	80-120
Manganese	100.0	99.81	100	80-120

Type: BSD Lab ID: QC797933

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Arsenic	100.0	95.95	96	80-120	0	20
Iron	10,000	10,770	108	80-120	4	20
Manganese	100.0	98.70	99	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000		

Type: MS Lab ID: QC797934

Analyte	MSS Result	Spiked	Result	%REC	Limits	Analyzed
Arsenic	13.31	100.0	128.3	115	80-120	08/03/15
Iron	328.4	10,000	10,540	102	80-120	08/04/15
Manganese	1,970	100.0	1,982	12 NM	80-120	08/03/15

Type: MSD Lab ID: QC797935

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
Arsenic	100.0	121.2	108	80-120	6	20	08/03/15
Iron	10,000	10,200	99	80-120	3	20	08/04/15
Manganese	100.0	1,992	22 NM	80-120	0	20	08/03/15

NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Units:	ug/L
Type:	Serial Dilution	Diln Fac:	5.000
MSS Lab ID:	268557-001	Batch#:	225705
Lab ID:	QC797936	Sampled:	07/28/15
Matrix:	Filtrate	Received:	07/29/15

Analyte	MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim	Analyzed
Arsenic	13.31	5.000	20.00 U	25.00	NC	10	08/03/15
Iron	328.4	100.0	481.0 J	500.0	NC	10	08/04/15
Manganese	1,970	5.000	1,995	25.00	1	10	08/03/15

J= Estimated value
U= Not Detected at or above DL
NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797937	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/04/15
Units:	ug/L		

Analyte	MSS Result	Spiked	Result	%REC	Limits
Arsenic	13.31	100.0	123.2	110	75-125
Iron	328.4	10,000	12,130	118	75-125
Manganese	1,970	100.0	2,056	86 NM	75-125

NM= Not Meaningful: Sample concentration > 4X spike concentration

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W06-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798414	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15
Units:	ug/L		

Analyte	MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
Arsenic	28.66	5.000	49.58	25.00	NC	10
Iron	2,310	100.0	2,192	500.0	5	10
Manganese	4,484	5.000	4,813	25.00	7	10

NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268557	Location:	BGMP Mins
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W06-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798415	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15
Units:	ug/L		

Analyte	MSS Result	Spiked	Result	%REC	Limits
Arsenic	28.66	100.0	156.8	128 *	75-125
Iron	2,310	10,000	12,760	105	75-125
Manganese	4,484	100.0	4,621	136 NM	75-125

*= Value outside of QC limits; see narrative
NM= Not Meaningful: Sample concentration > 4X spike concentration

REPORTING SUMMARY FOR 268557 METALS Filtrate
Curtis & Tompkins Laboratories

Lab ID	Inst ID	Analyzed	IDF	AS	FE	MN
268557-001	MET08	08/03/15 00:57	1.0	+	+	+
268557-001	MET08	08/04/15 12:21	1.0			
268557-001	MET08	08/04/15 16:24	100.0			
268557-001	MET08	08/04/15 16:29	1.0			
268557-001	MET09	08/06/15 09:41	100.0			
QC797930	MET08	08/03/15 00:39	1.0	+	+	+
QC797930	MET08	08/04/15 12:00	1.0			
QC797930	MET08	08/04/15 16:06	1.0			
QC797931	MET08	08/03/15 00:44	1.0	+	+	+
QC797931	MET08	08/04/15 12:05	1.0			
QC797931	MET08	08/04/15 16:11	1.0			
QC797932	MET08	08/03/15 00:49	1.0	+	+	+
QC797932	MET08	08/04/15 12:10	5.0			
QC797932	MET08	08/04/15 16:16	1.0			
QC797932	MET09	08/05/15 15:45	1.0			
QC797933	MET08	08/03/15 00:53	1.0	+	+	+
QC797933	MET08	08/04/15 12:16	5.0			
QC797933	MET08	08/04/15 16:20	1.0			
QC797933	MET09	08/05/15 15:49	1.0			
QC797934	MET08	08/03/15 01:22	1.0	+		+
QC797934	MET08	08/04/15 12:47	5.0			
QC797934	MET08	08/04/15 16:43	1.0		+	
QC797934	MET08	08/06/15 09:16	10.0			
QC797934	MET08	08/06/15 10:59	100.0			
QC797934	MET09	08/06/15 11:39	100.0			
QC797934	MET09	08/06/15 12:34	10.0			
QC797935	MET08	08/03/15 01:30	1.0	+		+
QC797935	MET08	08/04/15 12:56	5.0			
QC797935	MET08	08/04/15 17:07	1.0		+	
QC797935	MET08	08/06/15 09:21	10.0			
QC797935	MET08	08/06/15 11:04	100.0			
QC797935	MET09	08/06/15 11:44	100.0			
QC797935	MET09	08/06/15 12:38	10.0			
QC797936	MET08	08/03/15 01:38	5.0	+		+
QC797936	MET08	08/04/15 13:04	5.0			
QC797936	MET08	08/04/15 17:15	5.0		+	
QC797937	MET08	08/03/15 01:46	1.0			
QC797937	MET08	08/04/15 13:13	1.0	+		+
QC797937	MET08	08/04/15 17:23	1.0		+	
QC798414	MET09	08/05/15 19:38	5.0	+	+	+
QC798414	MET09	08/05/15 20:15	500.0			
QC798415	MET09	08/05/15 19:51	1.0	+	+	+
QC798415	MET09	08/05/15 20:37	100.0			

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/02/15 19:35	1.0		
002	met08_sn_6010	ICAL	L1			08/02/15 19:40	1.0	1	
003	met08_sn_6010	ICAL	L2			08/02/15 19:45	1.0	2	
004	met08_sn_6010	ICAL	L3			08/02/15 19:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/02/15 19:55	1.0	4	
006	met08_sn_6010	ICAL	L5			08/02/15 20:01	1.0	5	
007	met08_sn_6010	ICV				08/02/15 20:08	1.0	6	
008	met08_sn_6010	CRI				08/02/15 20:13	1.0	7	
009	met08_sn_6010	ICB				08/02/15 20:17	1.0		
010	met08_sn_6010	ICSA				08/02/15 20:22	1.0	8	10:MG=520000
011	met08_sn_6010	ICSAB				08/02/15 20:48	1.0	9	5:AL=520000
012	met08_sn_6010	SAMPLE	268559-006	Water	225651	08/02/15 20:53	1.0		1:NA=160000
013	met08_sn_6010	X	RINSE			08/02/15 21:02	1.0		
014	met08_sn_6010	BS	QC797259	Wipe	225531	08/02/15 21:08	5.0		
015	met08_sn_6010	BSD	QC797260	Wipe	225531	08/02/15 21:13	5.0		
016	met08_sn_6010	SAMPLE	268228-001	Wipe	225531	08/02/15 21:18	1.0		
017	met08_sn_6010	SAMPLE	268234-001	Wipe	225531	08/02/15 21:23	1.0		
018	met08_sn_6010	X	RINSE			08/02/15 21:28	1.0		
019	met08_sn_6010	BLANK	QC797261	Miscell.	225532	08/02/15 21:33	1.0		
020	met08_sn_6010	BS	QC797262	Miscell.	225532	08/02/15 21:38	5.0		
021	met08_sn_6010	BSD	QC797263	Miscell.	225532	08/02/15 21:44	5.0		
022	met08_sn_6010	CCV				08/02/15 21:49	1.0	10	
023	met08_sn_6010	CCB				08/02/15 21:56	1.0		
024	met08_sn_6010	SAMPLE	268228-001	Miscell.	225532	08/02/15 22:01	10.0		
025	met08_sn_6010	SAMPLE	268231-001	Miscell.	225532	08/02/15 22:07	10.0		
026	met08_sn_6010	SAMPLE	268233-001	Miscell.	225532	08/02/15 22:12	10.0		
027	met08_sn_6010	SAMPLE	268240-001	Miscell.	225532	08/02/15 22:17	10.0		
028	met08_sn_6010	SAMPLE	268247-001	Miscell.	225532	08/02/15 22:22	10.0		
029	met08_sn_6010	X	RINSE			08/02/15 22:27	1.0		
030	met08_sn_6010	BLANK	QC797528	Wipe	225605	08/02/15 22:32	1.0		
031	met08_sn_6010	BS	QC797529	Wipe	225605	08/02/15 22:37	5.0		
032	met08_sn_6010	BSD	QC797530	Wipe	225605	08/02/15 22:42	5.0		
033	met08_sn_6010	SAMPLE	268402-001	Wipe	225605	08/02/15 22:47	1.0		3:FE=120000
034	met08_sn_6010	CCV				08/02/15 22:55	1.0	10	
035	met08_sn_6010	XCCB				08/02/15 23:03	1.0		
036	met08_sn_6010	CCB				08/02/15 23:06	1.0		
037	met08_sn_6010	SAMPLE	268402-002	Wipe	225605	08/02/15 23:12	1.0		4:FE=290000
038	met08_sn_6010	SAMPLE	268402-003	Wipe	225605	08/02/15 23:19	1.0		
039	met08_sn_6010	X	RINSE			08/02/15 23:24	1.0		
040	met08_sn_6010	BLANK	QC797803	Filtrate	225672	08/02/15 23:29	1.0		
041	met08_sn_6010	BLANK	QC797804	Filtrate	225672	08/02/15 23:34	1.0		
042	met08_sn_6010	BS	QC797805	Filtrate	225672	08/02/15 23:39	1.0		
043	met08_sn_6010	BSD	QC797806	Filtrate	225672	08/02/15 23:44	1.0		
044	met08_sn_6010	MSS	268460-003	Filtrate	225672	08/02/15 23:48	1.0		1:NA=440000
045	met08_sn_6010	MS	QC797807	Filtrate	225672	08/02/15 23:53	1.0		1:NA=410000
046	met08_sn_6010	MSD	QC797808	Filtrate	225672	08/02/15 23:57	1.0		1:NA=440000
047	met08_sn_6010	CCV				08/03/15 00:01	1.0	10	
048	met08_sn_6010	CCB				08/03/15 00:09	1.0		
049	met08_sn_6010	SER	QC797809	Filtrate	225672	08/03/15 00:14	5.0		
050	met08_sn_6010	PDS	QC797810	Filtrate	225672	08/03/15 00:19	1.0	11 12 13	
051	met08_sn_6010	SAMPLE	268430-001	Filtrate	225672	08/03/15 00:23	1.0		1:NA=120000
052	met08_sn_6010	SAMPLE	268430-002	Filtrate	225672	08/03/15 00:28	1.0		1:NA=260000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	X	RINSE			08/03/15 00:34	1.0		
054	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/03/15 00:39	1.0		
055	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/03/15 00:44	1.0		
056	met08_sn_6010	BS	QC797932	Filtrate	225705	08/03/15 00:49	1.0		
057	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/03/15 00:53	1.0		
058	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/03/15 00:57	1.0		3:MG=560000
059	met08_sn_6010	CCV				08/03/15 01:06	1.0	10	
060	met08_sn_6010	XCCB				08/03/15 01:13	1.0		
061	met08_sn_6010	CCB				08/03/15 01:17	1.0		
062	met08_sn_6010	MS	QC797934	Filtrate	225705	08/03/15 01:22	1.0		3:MG=530000
063	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/03/15 01:30	1.0		3:MG=530000
064	met08_sn_6010	SER	QC797936	Filtrate	225705	08/03/15 01:38	5.0		2:NA=940000
065	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/03/15 01:46	1.0	11 12 13	3:MG=510000
066	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/03/15 01:54	1.0		
067	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/03/15 01:59	10.0		
068	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/03/15 02:04	1.0		
069	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/03/15 02:09	1.0		
070	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/03/15 02:14	1.0		4:MG=580000
071	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/03/15 02:23	1.0		4:MG=570000
072	met08_sn_6010	CCV				08/03/15 02:31	1.0	10	
073	met08_sn_6010	XCCB				08/03/15 02:39	1.0		
074	met08_sn_6010	CCB				08/03/15 02:43	1.0		
075	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/03/15 02:48	1.0		
076	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/03/15 02:53	1.0		
077	met08_sn_6010	SAMPLE	268558-001	Filtrate	225705	08/03/15 02:58	1.0		4:NA=1900000
078	met08_sn_6010	CCV				08/03/15 03:07	1.0	10	
079	met08_sn_6010	XCCB				08/03/15 03:15	1.0		
080	met08_sn_6010	CCB				08/03/15 03:19	1.0		

NCD 08/03/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 80.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85309335

Date : 08/02/15 Reference : met08_sn_6010
Sequence : MET08 08/02/15 Analyzed : 08/02/15 19:40

#	Type	Sample ID	Y A
		ICAL STD	3792342
		LOWER LIMIT	1137702
		UPPER LIMIT	4550810
009	ICB		3818530
010	ICSA		3268174
011	ICSAB		3232405
034	CCV		3726955
036	CCB		3734799
044	MSS	268460-003	3654613
047	CCV		3726955
048	CCB		3801776
051	SAMPLE	268430-001	3765508
052	SAMPLE	268430-002	3668109
054	BLANK	QC797930	3808425
055	BLANK	QC797931	3816516
056	BS	QC797932	3778177
057	BSD	QC797933	3781025
058	MSS	268557-001	2915258
059	CCV		3770247
061	CCB		3848822
062	MS	QC797934	2972512
063	MSD	QC797935	2953631
064	SER	QC797936	3352778
065	PDS	QC797937	2970155
070	MSS	268556-002	2786480
071	SAMPLE	268556-003	2783368
072	CCV		3726068
074	CCB		3714635
075	SAMPLE	268556-005	3777856
076	SAMPLE	268556-010	3816632
077	SAMPLE	268558-001	3014976
078	CCV		3699746
080	CCB		3756173

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85309335001
Units : ug/L

Date : 02-AUG-2015 19:35
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85309335002	L1	02-AUG-2015 19:40	S27752
L2	met08_sn_6010	85309335003	L2	02-AUG-2015 19:45	S27753
L3	met08_sn_6010	85309335004	L3	02-AUG-2015 19:49	S27754
L4	met08_sn_6010	85309335005	L4	02-AUG-2015 19:55	S27755
L5	met08_sn_6010	85309335006	L5	02-AUG-2015 20:01	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	7.1600	7.8180	7.6919	7.8257		LOR0	0.00000	0.12781		7.6239	1.000	0.995	
Manganese	A	1091.8	1067.2	1038.8	1012.8		LOR0	0.00000	9.87E-4		1052.7	1.000	0.995	
Iron	R	2.1420		2.0283	1.9703	1.8637	LOR0	0.00000	0.53626		2.0011	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-8	100.00	0	1000.0	-2	10000	0		
Manganese	A	5.0000	8	100.00	5	1000.0	3	10000	0		
Iron	R	100.00	15			1000.0	9	10000	6	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85309335001 Cal Date : 02-AUG-2015

ICV 85309335007 (02-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5028	ug/L	1	10	
Manganese	A	5000	4973	ug/L	-1	10	
Iron	R	20000	20580	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335008.1 File : met08_sn_6010 Time : 02-AUG-2015 20:13
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.893	ug/L	18	30	
Manganese	A	5.000	6.166	ug/L	**23**	30	!cri+
Iron	R	100.0	119.9	ug/L	20	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3813461	0.56

!=warning +=high bias

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335009.1 File : met08_sn_6010 Time : 02-AUG-2015 20:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3818530	0.69

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335010.1 File : met08_sn_6010 Time : 02-AUG-2015 20:22
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[4.618]	5.000	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20220	ug/L	101
Copper	A	20000	21170	ug/L	106
Manganese	A	20000	18960	ug/L	95
Nickel	A	20000	17860	ug/L	89
Vanadium	A	20000	20060	ug/L	100
Aluminum	R	500000	521200	ug/L	104
Calcium	R	500000	503600	ug/L	101
Iron	R	200000	197200	ug/L	99
Magnesium	R	500000	522800	ug/L	105
Titanium	R	20000	19550	ug/L	98

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3268174	-13.82

!=warning +=high bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335011.1 File : met08_sn_6010 Time : 02-AUG-2015 20:48
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	529.3	ug/L	6	20	
Manganese	A	500.0	477.0	ug/L	-5	20	
Iron	R	200000	196500	ug/L	-2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3232405	-14.76

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335047.1 File : met08_sn_6010 Time : 03-AUG-2015 00:01
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	8.0330	5000	5133	ug/L	3	10	
Manganese	A	1052.7	1051.8	5000	5191	ug/L	4	10	
Iron	R	2.0011	2.0311	20000	21780	ug/L	9	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726955	-1.72

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335048.1 File : met08_sn_6010 Time : 03-AUG-2015 00:09
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3801776	0.25

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335059.1 File : met08_sn_6010 Time : 03-AUG-2015 01:06
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.8221	5000	4999	ug/L	0	10	
Manganese	A	1052.7	1033.4	5000	5100	ug/L	2	10	
Iron	R	2.0011	1.8795	20000	20160	ug/L	1	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3770247	-0.58

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335061.1 File : met08_sn_6010 Time : 03-AUG-2015 01:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3848822	1.49

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335072.1 File : met08_sn_6010 Time : 03-AUG-2015 02:31
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.3536	5000	4699	ug/L	-6	10	
Manganese	A	1052.7	1025.5	5000	5061	ug/L	1	10	
Iron	R	2.0011	1.4748	20000	15820	ug/L	**-21**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726068	-1.75

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335074.1 File : met08_sn_6010 Time : 03-AUG-2015 02:43
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3714635	-2.05

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 05:34	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 05:39	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 05:44	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 05:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 05:54	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 06:00	1.0	5	
007	met08_sn_6010	XICV				08/04/15 06:07	1.0	6	
008	met08_sn_6010	ICV				08/04/15 06:15	1.0	6	
009	met08_sn_6010	XCRI				08/04/15 06:22	1.0	7	
010	met08_sn_6010	CRI				08/04/15 06:42	1.0	7	
011	met08_sn_6010	ICB				08/04/15 06:51	1.0		
012	met08_sn_6010	ICSA				08/04/15 06:56	1.0	8	10:AL=510000
013	met08_sn_6010	ICSAB				08/04/15 07:21	1.0	9	5:AL=500000
014	met08_sn_6010	MSS	268613-004	Water	225732	08/04/15 08:40	1.0		
015	met08_sn_6010	MS	QC798023	Water	225732	08/04/15 08:45	1.0		
016	met08_sn_6010	MSD	QC798024	Water	225732	08/04/15 08:49	1.0		
017	met08_sn_6010	SER	QC798025	Water	225732	08/04/15 08:53	5.0		
018	met08_sn_6010	PDS	QC798026	Water	225732	08/04/15 08:58	1.0	10 11 12	
019	met08_sn_6010	X	RINSE			08/04/15 09:02	1.0		
020	met08_sn_6010	BLANK	QC798085	Soil	225747	08/04/15 09:07	1.0		
021	met08_sn_6010	BS	QC798086	Soil	225747	08/04/15 09:12	5.0		
022	met08_sn_6010	BSD	QC798087	Soil	225747	08/04/15 09:17	5.0		
023	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 09:22	1.0		6:FE=530000
024	met08_sn_6010	CCV				08/04/15 09:29	1.0	13	
025	met08_sn_6010	CCB				08/04/15 09:37	1.0		
026	met08_sn_6010	MS	QC798088	Soil	225747	08/04/15 09:42	5.0		1:FE=150000
027	met08_sn_6010	MSD	QC798089	Soil	225747	08/04/15 09:49	5.0		2:FE=120000
028	met08_sn_6010	SAMPLE	268664-001	Soil	225747	08/04/15 09:57	10.0		
029	met08_sn_6010	SAMPLE	268664-002	Soil	225747	08/04/15 10:01	10.0		
030	met08_sn_6010	SAMPLE	268664-003	Soil	225747	08/04/15 10:06	10.0		
031	met08_sn_6010	SAMPLE	268664-004	Soil	225747	08/04/15 10:10	10.0		
032	met08_sn_6010	SAMPLE	268664-005	Soil	225747	08/04/15 10:18	10.0		
033	met08_sn_6010	SAMPLE	268664-006	Soil	225747	08/04/15 10:26	10.0		
034	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 10:30	100.0		
035	met08_sn_6010	CCV				08/04/15 10:35	1.0	13	
036	met08_sn_6010	CCB				08/04/15 10:42	1.0		
037	met08_sn_6010	X	RINSE			08/04/15 10:50	1.0		
038	met08_sn_6010	X	RINSE			08/04/15 10:55	1.0		
039	met08_sn_6010	X	RINSE			08/04/15 11:00	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 11:05	1.0		
041	met08_sn_6010	CCV				08/04/15 11:10	1.0	13	
042	met08_sn_6010	CCB				08/04/15 11:18	1.0		
043	met08_sn_6010	MSS	268334-001	Water	225471	08/04/15 11:39	10.0		
044	met08_sn_6010	SER	QC798098	Water	225471	08/04/15 11:43	50.0		
045	met08_sn_6010	PDS	QC798099	Water	225471	08/04/15 11:48	10.0	10 11 12	
046	met08_sn_6010	X	RINSE			08/04/15 11:55	1.0		
047	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 12:00	1.0		
048	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 12:05	1.0		
049	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 12:10	5.0		
050	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 12:16	5.0		
051	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 12:21	1.0		3:MG=540000
052	met08_sn_6010	X	RINSE			08/04/15 12:29	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCV				08/04/15 12:34	1.0	13	
054	met08_sn_6010	CCB				08/04/15 12:42	1.0		
055	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 12:47	5.0		2:NA=750000
056	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 12:56	5.0		2:NA=860000
057	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 13:04	5.0		2:NA=900000
058	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 13:13	1.0	10 11 12	3:MG=510000
059	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 13:21	1.0		
060	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 13:26	1.0		5:K=370000
061	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 13:33	1.0		
062	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 13:38	1.0		
063	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 13:43	1.0		4:CA=560000
064	met08_sn_6010	X	RINSE			08/04/15 13:52	1.0		
065	met08_sn_6010	CCV				08/04/15 13:57	1.0	13	
066	met08_sn_6010	CCB				08/04/15 14:05	1.0		
067	met08_sn_6010	CCB				08/04/15 14:09	1.0		

NCD 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 54.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S26229 11=S26230 12=S27470 13=S27756

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85311374

Date : 08/04/15 Reference : met08_sn_6010
Sequence : MET08 08/04/15 Analyzed : 08/04/15 05:39

#	Type	Sample ID	Y A
		ICAL STD	3845807
		LOWER LIMIT	1153742
		UPPER LIMIT	4614969
011	ICB		3906415
012	ICSA		3208743
013	ICSAB		3241075
014	MSS	268613-004	3998438
024	CCV		3773209
025	CCB		3859228
041	CCV		3804961
042	CCB		3925029
047	BLANK	QC797930	3987645
048	BLANK	QC797931	3964995
049	BS	QC797932	3869452
050	BSD	QC797933	3860642
051	MSS	268557-001	2838135
053	CCV		3786842
054	CCB		3782945
055	MS	QC797934	3377321
056	MSD	QC797935	3345433
057	SER	QC797936	3335479
058	PDS	QC797937	2940760
063	MSS	268556-002	2810943
065	CCV		3728529
066	CCB		3862989

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET08 Reviewer : ---
Calnum : 85311374001 Date : 04-AUG-2015 05:34
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311374002	L1	04-AUG-2015 05:39	S27752
L2	met08_sn_6010	85311374003	L2	04-AUG-2015 05:44	S27753
L3	met08_sn_6010	85311374004	L3	04-AUG-2015 05:49	S27754
L4	met08_sn_6010	85311374005	L4	04-AUG-2015 05:54	S27755
L5	met08_sn_6010	85311374006	L5	04-AUG-2015 06:00	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	9.6800	7.9950	7.9413	8.2519		LOR0	0.00000	0.12123		8.4671	1.000	0.995	
Manganese	A	1174.5	1126.3	1089.9	1074.0		LOR0	0.00000	9.31E-4		1116.2	1.000	0.995	
Iron	R	2.1270		1.9293	1.8954	1.8895	LOR0	0.00000	0.52922		1.9603	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	17	100.00	-3	1000.0	-4	10000	0		
Manganese	A	5.0000	9	100.00	5	1000.0	1	10000	0		
Iron	R	100.00	13			1000.0	2	10000	0	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311374001 Cal Date : 04-AUG-2015

ICV 85311374008 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5046	ug/L	1	10	
Manganese	A	5000	5006	ug/L	0	10	
Iron	R	20000	20230	ug/L	1	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374010.1 File : met08_sn_6010 Time : 04-AUG-2015 06:42
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.782	ug/L	16	30	
Manganese	A	5.000	6.242	ug/L	**25**	30	!cri+
Iron	R	100.0	118.6	ug/L	19	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3884369	1.00

!=warning +=high bias

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374011.1 File : met08_sn_6010 Time : 04-AUG-2015 06:51
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3906415	1.58

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374012.1 File : met08_sn_6010 Time : 04-AUG-2015 06:56
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-1.425]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20010	ug/L	100
Copper	A	20000	21200	ug/L	106
Manganese	A	20000	19260	ug/L	96
Nickel	A	20000	18070	ug/L	90
Vanadium	A	20000	20150	ug/L	101
Aluminum	R	500000	506100	ug/L	101
Calcium	R	500000	492100	ug/L	98
Iron	R	200000	190200	ug/L	95
Magnesium	R	500000	502800	ug/L	101
Titanium	R	20000	20110	ug/L	101

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3208743	-16.57

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374013.1 File : met08_sn_6010 Time : 04-AUG-2015 07:21
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	519.6	ug/L	4	20	
Manganese	A	500.0	482.7	ug/L	-3	20	
Iron	R	200000	186800	ug/L	-7		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3241075	-15.72

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374053.1 File : met08_sn_6010 Time : 04-AUG-2015 12:34
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.8965	5000	4786	ug/L	-4	10	
Manganese	A	1116.2	1049.1	5000	4883	ug/L	-2	10	
Iron	R	1.9603	1.7499	20000	18520	ug/L	-7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3786842	-1.53

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374054.1 File : met08_sn_6010 Time : 04-AUG-2015 12:42
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3782945	-1.63

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374065.1 File : met08_sn_6010 Time : 04-AUG-2015 13:57
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.5343	5000	4567	ug/L	-9	10	
Manganese	A	1116.2	1040.2	5000	4842	ug/L	-3	10	
Iron	R	1.9603	1.5271	20000	16160	ug/L	**-19**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3728529	-3.05

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374066.1 File : met08_sn_6010 Time : 04-AUG-2015 14:05
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3862989	0.45

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 14:13	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 14:18	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 14:23	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 14:27	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 14:32	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 14:40	1.0	5	
007	met08_sn_6010	ICV				08/04/15 14:47	1.0	6	
008	met08_sn_6010	XCRI				08/04/15 14:54	1.0	7	
009	met08_sn_6010	CRI				08/04/15 15:05	1.0	7	
010	met08_sn_6010	ICB				08/04/15 15:13	1.0		
011	met08_sn_6010	ICSA				08/04/15 15:22	1.0	8	10:AL=560000
012	met08_sn_6010	ICSAB				08/04/15 15:47	1.0	9	5:AL=530000
013	met08_sn_6010	SAMPLE	268517-023	Miscell.	225698	08/04/15 15:54	1.0		6:CA=3500000
014	met08_sn_6010	X	RINSE			08/04/15 16:01	1.0		
015	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 16:06	1.0		
016	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 16:11	1.0		
017	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 16:16	1.0		
018	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 16:20	1.0		
019	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:24	100.0		
020	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:29	1.0		3:MG=590000
021	met08_sn_6010	X	RINSE			08/04/15 16:38	1.0		
022	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 16:43	1.0		3:MG=560000
023	met08_sn_6010	CCV				08/04/15 16:50	1.0	10	
024	met08_sn_6010	XCCB				08/04/15 16:58	1.0		
025	met08_sn_6010	CCB				08/04/15 17:02	1.0		
026	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 17:07	1.0		3:MG=560000
027	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 17:15	5.0		2:NA=890000
028	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 17:23	1.0	11 12 13	3:MG=600000
029	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 17:31	1.0		
030	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 17:36	1.0		5:K=380000
031	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 17:44	1.0		
032	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 17:49	1.0		
033	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 17:54	1.0		4:MG=660000
034	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/04/15 18:02	1.0		4:MG=670000
035	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/04/15 18:11	1.0		
036	met08_sn_6010	CCV				08/04/15 18:16	1.0	10	
037	met08_sn_6010	CCB				08/04/15 18:24	1.0		
038	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/04/15 18:29	1.0		
039	met08_sn_6010	?SAMPLE	269558-001		225705	08/04/15 18:34	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 18:43	1.0		
041	met08_sn_6010	BS	QC797841	Soil	225682	08/04/15 18:48	5.0		
042	met08_sn_6010	BSD	QC797842	Soil	225682	08/04/15 18:53	5.0		
043	met08_sn_6010	X	RINSE			08/04/15 18:58	1.0		
044	met08_sn_6010	BLANK	QC798020	Water	225732	08/04/15 19:03	1.0		
045	met08_sn_6010	BS	QC798021	Water	225732	08/04/15 19:08	1.0		
046	met08_sn_6010	BSD	QC798022	Water	225732	08/04/15 19:13	1.0		
047	met08_sn_6010	SAMPLE	268598-003	Water	225732	08/04/15 19:18	1000		
048	met08_sn_6010	CCV				08/04/15 19:23	1.0	10	
049	met08_sn_6010	CCB				08/04/15 19:31	1.0		
050	met08_sn_6010	SAMPLE	268598-004	Water	225732	08/04/15 19:36	1000		
051	met08_sn_6010	MSS	268602-001	Water	225732	08/04/15 19:41	1.0		
052	met08_sn_6010	CCV				08/04/15 19:46	1.0	10	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCB				08/04/15 19:54	1.0		

CRT 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 53.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85311893

Date : 08/04/15 Reference : met08_sn_6010
Sequence : MET08 08/04/15 Analyzed : 08/04/15 14:18

#	Type	Sample ID	Y A
		ICAL STD	3932246
		LOWER LIMIT	1179674
		UPPER LIMIT	4718696
010	ICB		3924187
011	ICSA		3218247
012	ICSAB		3244133
013	SAMPLE	268517-023	3169366
015	BLANK	QC797930	3855454
016	BLANK	QC797931	3908505
017	BS	QC797932	3811417
018	BSD	QC797933	3790355
019	MSS	268557-001	3785849
020	MSS	268557-001	2864702
022	MS	QC797934	2914238
023	CCV		3739314
025	CCB		3895030
026	MSD	QC797935	2917291
027	SER	QC797936	3300017
028	PDS	QC797937	2894907
033	MSS	268556-002	2800471
034	SAMPLE	268556-003	2798200
035	SAMPLE	268556-005	3991118
036	CCV		3696258
037	CCB		3875641
038	SAMPLE	268556-010	3959991
048	CCV		3717167
049	CCB		3850448

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85311893001
Units : ug/L

Date : 04-AUG-2015 14:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311893002	L1	04-AUG-2015 14:18	S27752
L2	met08_sn_6010	85311893003	L2	04-AUG-2015 14:23	S27753
L3	met08_sn_6010	85311893004	L3	04-AUG-2015 14:27	S27754
L4	met08_sn_6010	85311893005	L4	04-AUG-2015 14:32	S27755
L5	met08_sn_6010	85311893006	L5	04-AUG-2015 14:40	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	5.7600	7.6920	7.5803	7.8817		LOR0	0.00000	0.12693		7.2285	1.000	0.995	
Manganese	A	1036.8	1152.3	1107.8	1102.3		LOR0	0.00000	9.07E-4		1099.8	1.000	0.995	
Iron	R	1.7020		1.7049	1.5924	1.5554	LOR0	0.00000	0.64278		1.6387	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	**-27**	100.00	-2	1000.0	-4	10000	0		
Manganese	A	5.0000	-6	100.00	5	1000.0	0	10000	0		
Iron	R	100.00	9			1000.0	10	10000	2	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311893001 Cal Date : 04-AUG-2015

ICV 85311893007 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5012	ug/L	0	10	
Manganese	A	5000	4942	ug/L	-1	10	
Iron	R	20000	20670	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893009.1 File : met08_sn_6010 Time : 04-AUG-2015 15:05
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.513	ug/L	10	30	
Manganese	A	5.000	4.607	ug/L	-8	30	
Iron	R	100.0	107.9	ug/L	8	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875445	-1.44

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893010.1 File : met08_sn_6010 Time : 04-AUG-2015 15:13
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3924187	-0.20

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893011.1 File : met08_sn_6010 Time : 04-AUG-2015 15:22
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-3.129]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19320	ug/L	97
Copper	A	20000	20980	ug/L	105
Manganese	A	20000	18810	ug/L	94
Nickel	A	20000	17900	ug/L	89
Vanadium	A	20000	20090	ug/L	100
Aluminum	R	500000	564900	ug/L	113
Calcium	R	500000	531100	ug/L	106
Iron	R	200000	213000	ug/L	106
Magnesium	R	500000	535300	ug/L	107
Titanium	R	20000	21210	ug/L	106

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3218247	-18.16

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893012.1 File : met08_sn_6010 Time : 04-AUG-2015 15:47
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	509.5	ug/L	2	20	
Manganese	A	500.0	473.3	ug/L	-5	20	
Iron	R	200000	204300	ug/L	2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3244133	-17.50

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893023.1 File : met08_sn_6010 Time : 04-AUG-2015 16:50
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.5838	5000	4813	ug/L	-4	10	
Manganese	A	1099.8	1073.2	5000	4868	ug/L	-3	10	
Iron	R	1.6387	1.6260	20000	20900	ug/L	5	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3739314	-4.91

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893025.1 File : met08_sn_6010 Time : 04-AUG-2015 17:02
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3895030	-0.95

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893036.1 File : met08_sn_6010 Time : 04-AUG-2015 18:16
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.0665	5000	4485	ug/L	-10	10	
Manganese	A	1099.8	1065.1	5000	4831	ug/L	-3	10	
Iron	R	1.6387	1.6632	20000	21380	ug/L	7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3696258	-6.00

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893037.1 File : met08_sn_6010 Time : 04-AUG-2015 18:24
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875641	-1.44

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met09_sn_	ICALBLK				08/05/15 05:38	1.0		
002	met09_sn_	ICAL	L1			08/05/15 05:43	1.0	1	
003	met09_sn_	ICAL	L2			08/05/15 05:48	1.0	2	
004	met09_sn_	ICAL	L3			08/05/15 05:53	1.0	3	
005	met09_sn_	ICAL	L4			08/05/15 05:57	1.0	4	
006	met09_sn_	ICAL	L5			08/05/15 06:04	1.0	5	
007	met09_sn_	ICV				08/05/15 06:11	1.0	6	
008	met09_sn_	XCRI				08/05/15 06:18	1.0	7	
009	met09_sn_	CRI				08/05/15 06:36	1.0	7	
010	met09_sn_	ICB				08/05/15 06:41	1.0		
011	met09_sn_	ICSA				08/05/15 06:46	1.0	8	10:AL=510000
012	met09_sn_	ICSAB				08/05/15 08:02	1.0	9	5:AL=490000
013	met09_sn_	MSS	268662-001	Soil	225788	08/05/15 08:30	100.0		
014	met09_sn_	SAMPLE	268673-001	Miscell.	225788	08/05/15 08:34	100.0		
015	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 08:38	100.0		1:PB=12000
016	met09_sn_	X	RINSE			08/05/15 08:46	1.0		
017	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:51	1.0		6:FE=380000
018	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:59	1.0		6:FE=390000
019	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 09:07	1000		
020	met09_sn_	CCV				08/05/15 09:12	1.0	10	
021	met09_sn_	CCB				08/05/15 09:19	1.0		
022	met09_sn_	MSS	268613-004	Water	225732	08/05/15 09:29	1.0		
023	met09_sn_	CCV				08/05/15 09:34	1.0	10	
024	met09_sn_	CCB				08/05/15 09:41	1.0		
025	met09_sn_	BLANK	QC798252	TCLP Leachate	225793	08/05/15 09:52	10.0		1:NA=160000
026	met09_sn_	BLANK	QC798257	TCLP Leachate	225793	08/05/15 09:57	10.0		1:NA=150000
027	met09_sn_	BS	QC798253	TCLP Leachate	225793	08/05/15 10:03	1.0		
028	met09_sn_	BSD	QC798254	TCLP Leachate	225793	08/05/15 10:07	1.0		
029	met09_sn_	MSS	268597-001	TCLP Leachate	225793	08/05/15 10:11	10.0		1:NA=150000
030	met09_sn_	MS	QC798255	TCLP Leachate	225793	08/05/15 10:16	10.0		
031	met09_sn_	MSD	QC798256	TCLP Leachate	225793	08/05/15 10:21	10.0		
032	met09_sn_	SAMPLE	268369-001	TCLP Leachate	225793	08/05/15 10:25	10.0		1:NA=150000
033	met09_sn_	SAMPLE	268373-001	TCLP Leachate	225793	08/05/15 10:30	10.0		1:NA=190000
034	met09_sn_	SAMPLE	268655-001	TCLP Leachate	225793	08/05/15 10:36	10.0		1:NA=140000
035	met09_sn_	CCV				08/05/15 10:41	1.0	10	
036	met09_sn_	CCB				08/05/15 10:48	1.0		
037	met09_sn_	SAMPLE	268655-002	TCLP Leachate	225793	08/05/15 10:53	10.0		1:NA=150000
038	met09_sn_	CCV				08/05/15 10:58	1.0	10	
039	met09_sn_	CCB				08/05/15 11:05	1.0		
040	met09_sn_	SER	QC798239	Soil	225788	08/05/15 11:19	500.0		
041	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 11:24	100.0	11 12 13	
042	met09_sn_	SAMPLE	268669-001	Miscell.	225788	08/05/15 11:28	100.0		
043	met09_sn_	SAMPLE	268584-004	Miscell.	225788	08/05/15 11:33	1.0		1:CR=310000
044	met09_sn_	X	RINSE			08/05/15 11:38	1.0		
045	met09_sn_	X	RINSE			08/05/15 11:43	1.0		
046	met09_sn_	X	RINSE			08/05/15 11:48	1.0		
047	met09_sn_	X	RINSE			08/05/15 11:53	1.0		
048	met09_sn_	CCV				08/05/15 11:58	1.0	10	
049	met09_sn_	CCB				08/05/15 12:05	1.0		
050	met09_sn_	BLANK	QC798178	Water	225774	08/05/15 12:12	1.0		
051	met09_sn_	BS	QC798179	Water	225774	08/05/15 12:17	1.0		
052	met09_sn_	BSD	QC798180	Water	225774	08/05/15 12:21	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met09_sn_	MSS	268615-001	Water	225774	08/05/15 12:26	1.0		3:MG=380000
054	met09_sn_	MS	QC798181	Water	225774	08/05/15 12:33	1.0		3:MG=370000
055	met09_sn_	MSD	QC798182	Water	225774	08/05/15 12:41	1.0		3:MG=370000
056	met09_sn_	SAMPLE	268593-001	Water	225774	08/05/15 12:49	1.0		3:MG=130000
057	met09_sn_	SAMPLE	268593-002	Water	225774	08/05/15 12:57	1.0		2:MG=140000
058	met09_sn_	SAMPLE	268616-001	Water	225774	08/05/15 13:05	1.0		3:MG=290000
059	met09_sn_	SAMPLE	268668-001	Water	225774	08/05/15 13:14	1.0		
060	met09_sn_	CCV				08/05/15 13:22	1.0	10	
061	met09_sn_	CCB				08/05/15 13:29	1.0		
062	met09_sn_	BLANK	QC798293	Soil	225807	08/05/15 13:39	1.0		
063	met09_sn_	BS	QC798294	Soil	225807	08/05/15 13:44	5.0		
064	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 13:49	5.0		
065	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 13:53	10.0		
066	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 13:57	1.0	11 12 13	1:FE=1800000
067	met09_sn_	MS	QC798296	Soil	225807	08/05/15 14:05	5.0		1:FE=200000
068	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 14:13	5.0		
069	met09_sn_	SAMPLE	268707-001	Soil	225807	08/05/15 14:21	1.0		3:FE=210000
070	met09_sn_	BS	QC798294	Soil	225807	08/05/15 14:29	5.0		
071	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 14:34	5.0		
072	met09_sn_	CCV				08/05/15 14:38	1.0	10	
073	met09_sn_	CCB				08/05/15 14:45	1.0		
074	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 14:50	10.0		
075	met09_sn_	SAMPLE	268682-003	Soil	225807	08/05/15 14:54	10.0		
076	met09_sn_	SAMPLE	268682-004	Soil	225807	08/05/15 14:58	10.0		
077	met09_sn_	SAMPLE	268682-005	Soil	225807	08/05/15 15:03	10.0		
078	met09_sn_	SAMPLE	268682-006	Soil	225807	08/05/15 15:07	10.0		
079	met09_sn_	SAMPLE	268682-007	Soil	225807	08/05/15 15:11	10.0		
080	met09_sn_	BS	QC798294	Soil	225807	08/05/15 15:16	5.0		
081	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 15:20	5.0		
082	met09_sn_	SAMPLE	268682-008	Soil	225807	08/05/15 15:24	10.0		
083	met09_sn_	SAMPLE	268682-009	Soil	225807	08/05/15 15:28	10.0		
084	met09_sn_	CCV				08/05/15 15:33	1.0	10	
085	met09_sn_	CCB				08/05/15 15:40	1.0		
086	met09_sn_	BS	QC797932	Filtrate	225705	08/05/15 15:45	1.0		
087	met09_sn_	BSD	QC797933	Filtrate	225705	08/05/15 15:49	1.0		
088	met09_sn_	X	RINSE			08/05/15 15:53	1.0		
089	met09_sn_	SAMPLE	268682-010	Soil	225807	08/05/15 15:58	10.0		
090	met09_sn_	SAMPLE	268682-011	Soil	225807	08/05/15 16:03	10.0		
091	met09_sn_	SAMPLE	268682-012	Soil	225807	08/05/15 16:07	10.0		
092	met09_sn_	BS	QC798294	Soil	225807	08/05/15 16:11	5.0		
093	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 16:15	5.0		
094	met09_sn_	CCV				08/05/15 16:19	1.0	10	
095	met09_sn_	CCB				08/05/15 16:26	1.0		
096	met09_sn_	SAMPLE	268597-002	TCLP Leachate	225793	08/05/15 16:32	10.0		1:NA=190000
097	met09_sn_	X	RINSE			08/05/15 16:37	1.0		
098	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 16:42	5.0		1:FE=200000
099	met09_sn_	MS	QC798296	Soil	225807	08/05/15 16:49	5.0		
100	met09_sn_	SAMPLE	268682-013	Soil	225807	08/05/15 16:57	10.0		
101	met09_sn_	SAMPLE	268682-014	Soil	225807	08/05/15 17:01	10.0		
102	met09_sn_	SAMPLE	268682-015	Soil	225807	08/05/15 17:06	10.0		
103	met09_sn_	SAMPLE	268682-016	Soil	225807	08/05/15 17:10	10.0		
104	met09_sn_	SAMPLE	268682-017	Soil	225807	08/05/15 17:14	1.0		2:FE=250000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:22	1.0		1:FE=170000
106	met09_sn_	CCV				08/05/15 17:30	1.0	10	
107	met09_sn_	CCB				08/05/15 17:37	1.0		
108	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:42	1.0		1:FE=160000
109	met09_sn_	CCV				08/05/15 17:50	1.0	10	
110	met09_sn_	CCB				08/05/15 17:57	1.0		
111	met09_sn_	SAMPLE	268608-001	Soil	225747	08/05/15 18:07	1.0		4:FE=380000
112	met09_sn_	SAMPLE	268608-002	Soil	225747	08/05/15 18:15	1.0		3:FE=410000
113	met09_sn_	SAMPLE	268608-003	Soil	225747	08/05/15 18:22	1.0		3:FE=360000
114	met09_sn_	SAMPLE	268608-004	Soil	225747	08/05/15 18:30	1.0		3:FE=460000
115	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 18:40	1.0		1:FE=190000
116	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 18:48	10.0		
117	met09_sn_	CCV				08/05/15 19:02	1.0	10	
118	met09_sn_	CCB				08/05/15 19:09	1.0		
119	met09_sn_	SAMPLE	268464-002	Water	225649	08/05/15 19:15	100.0		
120	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 19:26	1.0		3:MG=610000
121	met09_sn_	X	RINSE			08/05/15 19:33	1.0		
122	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 19:38	5.0		
123	met09_sn_	X	RINSE			08/05/15 19:46	1.0		
124	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 19:51	1.0	11 12 13	3:MG=600000
125	met09_sn_	X	RINSE			08/05/15 19:59	1.0		
126	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 20:04	100.0		
127	met09_sn_	X	RINSE			08/05/15 20:10	1.0		
128	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 20:15	500.0		
129	met09_sn_	X	RINSE			08/05/15 20:20	1.0		
130	met09_sn_	CCV				08/05/15 20:25	1.0	10	
131	met09_sn_	CCB				08/05/15 20:32	1.0		
132	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 20:37	100.0	11 12 13	
133	met09_sn_	X	RINSE			08/05/15 20:41	1.0		
134	met09_sn_	SAMPLE	268464-003	Water	225649	08/05/15 20:47	1.0		
135	met09_sn_	X	RINSE			08/05/15 20:52	1.0		
136	met09_sn_	SAMPLE	268464-004	Water	225649	08/05/15 20:57	1.0		
137	met09_sn_	X	RINSE			08/05/15 21:02	1.0		
138	met09_sn_	MSS	268460-003	Filtrate	225672	08/05/15 21:07	1.0		1:NA=380000
139	met09_sn_	X	RINSE			08/05/15 21:11	1.0		
140	met09_sn_	X	RINSE			08/05/15 21:17	1.0		
141	met09_sn_	X	QC798374	Soil	225826	08/05/15 21:22	1.0		5:AL=440000
142	met09_sn_	CCV				08/05/15 21:30	1.0	10	
143	met09_sn_	CCB				08/05/15 21:36	1.0		
144	met09_sn_	X	QC798375	Soil	225826	08/05/15 21:42	5.0		4:AL=680000
145	met09_sn_	X	QC798376	Soil	225826	08/05/15 21:50	5.0		4:AL=680000
146	met09_sn_	X	268621-002	Soil	225826	08/05/15 21:57	1.0		4:AL=610000
147	met09_sn_	X	QC798377	Soil	225826	08/05/15 22:05	5.0		2:AL=420000
148	met09_sn_	X	QC798378	Soil	225826	08/05/15 22:13	5.0		1:AL=610000
149	met09_sn_	X	268621-004	Soil	225826	08/05/15 22:21	1.0		3:FE=400000
150	met09_sn_	X	268621-005	Soil	225826	08/05/15 22:29	1.0		2:FE=430000
151	met09_sn_	X	268621-006	Soil	225826	08/05/15 22:37	1.0		
152	met09_sn_	X	268621-007	Soil	225826	08/05/15 22:42	1.0		
153	met09_sn_	X	268621-008	Soil	225826	08/05/15 22:47	1.0		
154	met09_sn_	CCV				08/05/15 22:52	1.0	10	
155	met09_sn_	CCB				08/05/15 22:59	1.0		
156	met09_sn_	X	268621-009	Soil	225826	08/05/15 23:05	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	met09_sn_	X	268621-010	Soil	225826	08/05/15 23:10	1.0		1:FE=100000
158	met09_sn_	X	268621-011	Soil	225826	08/05/15 23:18	1.0		
159	met09_sn_	X	268621-012	Soil	225826	08/05/15 23:25	1.0		
160	met09_sn_	X	268621-013	Soil	225826	08/05/15 23:31	1.0		
161	met09_sn_	X	268621-014	Soil	225826	08/05/15 23:37	1.0		
162	met09_sn_	X	268621-015	Soil	225826	08/05/15 23:42	1.0		
163	met09_sn_	X	268684-001	Soil	225826	08/05/15 23:47	1.0		
164	met09_sn_	X	268685-001	Soil	225826	08/05/15 23:53	1.0		
165	met09_sn_	X	RINSE			08/05/15 23:58	1.0		
166	met09_sn_	CCV				08/06/15 00:03	1.0	10	
167	met09_sn_	CCB				08/06/15 00:10	1.0		
168	met09_sn_	?SAMPLE	268632-001		225747	08/06/15 00:15	1.0		
169	met09_sn_	SAMPLE	268642-001	Miscell.	225747	08/06/15 00:23	1.0		4:CA=1800000
170	met09_sn_	SAMPLE	268645-001	Soil	225747	08/06/15 00:31	1.0		5:FE=340000
171	met09_sn_	CCV				08/06/15 00:39	1.0	10	
172	met09_sn_	CCB				08/06/15 00:46	1.0		

NCD 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 49.

CRT 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 50 through 110.

NCD 08/06/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 111 through 172.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 95312818

Date : 08/05/15 Reference : met09_sn_
Sequence : MET09 08/05/15 Analyzed : 08/05/15 05:43

#	Type	Sample ID	Y A
		ICAL STD	3557812
		LOWER LIMIT	1067344
		UPPER LIMIT	4269374
010	ICB		3565668
011	ICSA		3034797
012	ICSAB		3025923
020	CCV		3461723
021	CCB		3657631
022	MSS	268613-004	3629724
023	CCV		3450916
024	CCB		3673839
084	CCV		3251276
085	CCB		3442233
086	BS	QC797932	3365220
087	BSD	QC797933	3345006
094	CCV		3223624
095	CCB		3417094
117	CCV		3186226
118	CCB		3365340
120	MSS	268556-002	2323413
122	SER	QC798414	2840598
124	PDS	QC798415	2307777
126	MSS	268556-002	3197452
128	SER	QC798414	3197825
130	CCV		3139318
131	CCB		3302005
132	PDS	QC798415	3193222
138	MSS	268460-003	3092471
142	CCV		3173923
143	CCB		3302427

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET09
Calnum : 95312818001
Units : ug/L

Date : 05-AUG-2015 05:38
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met09_sn_	95312818002	L1	05-AUG-2015 05:43	S27752
L2	met09_sn_	95312818003	L2	05-AUG-2015 05:48	S27753
L3	met09_sn_	95312818004	L3	05-AUG-2015 05:53	S27754
L4	met09_sn_	95312818005	L4	05-AUG-2015 05:57	S27755
L5	met09_sn_	95312818006	L5	05-AUG-2015 06:04	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	3.1800	3.8100	3.8194	3.8341		LOR0	0.00000	0.26083		3.6609	1.000	0.995	
Manganese	A	713.02	726.37	734.11	694.95		LOR0	0.00000	0.00144		717.11	1.000	0.995	
Iron	R	11.104		10.934	10.825	10.742	LOR0	0.00000	0.09308		10.901	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-17	100.00	-1	1000.0	0	10000	0		
Manganese	A	5.0000	3	100.00	4	1000.0	6	10000	0		
Iron	R	100.00	3			1000.0	2	10000	1	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09
Calnum : 95312818001 Cal Date : 05-AUG-2015

ICV 95312818007 (05-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	4898	ug/L	-2	10	
Manganese	A	5000	5040	ug/L	1	10	
Iron	R	20000	19930	ug/L	0	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818009.1 File : met09_sn_ Time : 05-AUG-2015 06:36
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.815	ug/L	16	30	
Manganese	A	5.000	5.441	ug/L	9	30	
Iron	R	100.0	103.6	ug/L	4	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3584548	0.75

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818010.1 File : met09_sn_ Time : 05-AUG-2015 06:41
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3565668	0.22

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818011.1 File : met09_sn_ Time : 05-AUG-2015 06:46
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[2.754]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	18930	ug/L	95
Copper	A	20000	21900	ug/L	110
Manganese	A	20000	18430	ug/L	92
Nickel	A	20000	18090	ug/L	90
Vanadium	A	20000	19620	ug/L	98
Aluminum	R	500000	513000	ug/L	103
Calcium	R	500000	486800	ug/L	97
Iron	R	200000	189200	ug/L	95
Magnesium	R	500000	504700	ug/L	101
Titanium	R	20000	20400	ug/L	102

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3034797	-14.70

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818012.1 File : met09_sn_ Time : 05-AUG-2015 08:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	541.3	ug/L	8	20	
Manganese	A	500.0	520.7	ug/L	4	20	
Iron	R	200000	179300	ug/L	-10		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3025923	-14.95

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818117.2 File : met09_sn_ Time : 05-AUG-2015 19:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6662	5000	4781	ug/L	-4	10	
Manganese	A	717.11	702.47	5000	5051	ug/L	1	10	
Iron	R	10.901	11.096	20000	20660	ug/L	3	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3186226	-10.44

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818118.2 File : met09_sn_ Time : 05-AUG-2015 19:09
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3365340	-5.41

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818130.1 File : met09_sn_ Time : 05-AUG-2015 20:25
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6162	5000	4716	ug/L	-6	10	
Manganese	A	717.11	707.18	5000	5085	ug/L	2	10	
Iron	R	10.901	11.123	20000	20710	ug/L	4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3139318	-11.76

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818131.1 File : met09_sn_ Time : 05-AUG-2015 20:32
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3302005	-7.19

SAMPLE PREPARATION SUMMARY

Batch # : 225705 Analysis : ICP-200
Started By : RFC Prep Date : 31-JUL-2015 17:11 Finished By : RFC
Method : METHOD Units : mL
Spike #1 ID : S27307 Spike #2 ID : S27308 Spike #3 ID : S27470

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
268464-001		Filtrate	50	50	1	1.0						200.7	
268464-002		Filtrate	50	50	1	1.0						200.7	
268464-003		Filtrate	50	50	1	1.0						200.7	
268464-004		Filtrate	50	50	1	1.0						200.7	
268464-005		Filtrate	50	50	1	1.0						200.7	Prepped 07-AUG-2015 10:20
268556-002		Filtrate	50	50	1	1.0						6010	
268556-003		Filtrate	50	50	1	1.0						6010	
268556-005		Filtrate	50	50	1	1.0						6010	
268556-010		Filtrate	50	50	1	1.0						6010	
268557-001		Filtrate	50	50	1	1.0						6010	
268558-001		Filtrate	50	50	1	1.0						6010	
QC797930	BLANK	Filtrate	50	50	1	1.0							7/27/15 QC797298
QC797931	BLANK	Filtrate	50	50	1	1.0							7/29/15 QC797931
QC797932	BS	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797933	BSD	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797934	MS	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797935	MSD	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797936	SER	Filtrate	50	50	1	1.0							
QC797937	PDS	Filtrate	50	50	1	1.0							
QC798414	SER	Filtrate	50	50	1	1.0							
QC798415	PDS	Filtrate	50	50	1	1.0							

Analyst: NCD Date: 08/03/15 Reviewer: JDB Date: 08/06/15

Water Digestion for ICP Curtis & Tompkins, Ltd.

LIMS Batch #: 225705
Digested by: RFC
Date Digested: 7/31/15

Digestion Method
☐ EPA 3010a for ICP
☐ EPA 200.7
☑ FILTRATE

BK3689
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Lvl.	Sample #	Container ID	Volume Sample(mL)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
	BLANK 7/27/15		☒ 50 ☐	☒ 50 ☐	N	✓	QC797298 & QC797930
	BS		☒ 50 ☐	☒ 50 ☐		✓	-932
	BSD		☒ 50 ☐	☒ 50 ☐		✓	-933
	MS		☒ 50 ☐	☒ 50 ☐		✓	-934
5	MSD		☒ 50 ☐	☒ 50 ☐		✓	-935
II	268464-001	K	☒ 50 ☐	☒ 50 ☐		✓	
	-002		☒ 50 ☐	☒ 50 ☐		✓	
	-003		☒ 50 ☐	☒ 50 ☐		✓	
	-004		☒ 50 ☐	☒ 50 ☐		✓	
III 10	268556-002	D	☒ 50 ☐	☒ 50 ☐		✓	
	-003		☒ 50 ☐	☒ 50 ☐		✓	
	-005		☒ 50 ☐	☒ 50 ☐		✓	
	-010		☒ 50 ☐	☒ 50 ☐		✓	
IV	268557-001	L	☒ 50 ☐	☒ 50 ☐		✓	MSS
III 15	268558-001	F	☒ 50 ☐	☒ 50 ☐		✓	
	BLANK 7/29/15		☒ 50 ☐	☒ 50 ☐		✓	QC797659 QC797931
II	268464-005	K	☒ 50 ☐	☒ 50 ☐	N	✓	
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
20			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			

	Reagent ID or LIMS #	Initials / Date
Digestion tubes, lot #	ACCUFLOW	RFC 7/31/15
0.50 mL of spike solution (Std1) was added to all spikes	S27307	
0.50 mL of spike solution (Std2) was added to all spikes	S27308	
0.50 mL of spike solution (Std3) was added to all spikes	S27470	
Digestion Temperature (°C), Block and Probe Location		
Digestion begun at (time)		
☑ Conc. HNO3 or ☐ 1:1 HNO3	JTB104117	
☑ Conc. HCl or ☐ 1:1 HCl	JTB97264	
digestion ended at (time)		
☐ filtered thru' Whatman # 541		
Relinquished to ICP group	ICP	

7/31/15
Prep Chemist / Date

Continued from page Ø.
Continued on page _____.

Reviewed Online / See LIMS

Dilutions for 268557 METALS Filtrate
Curtis & Tompkins Laboratories

Type	Sample ID	IDFs
SER	QC797936	5X
SER	QC798414	5X

ICP Raw Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/02/15 19:35	1.0		
002	met08_sn_6010	ICAL	L1			08/02/15 19:40	1.0	1	
003	met08_sn_6010	ICAL	L2			08/02/15 19:45	1.0	2	
004	met08_sn_6010	ICAL	L3			08/02/15 19:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/02/15 19:55	1.0	4	
006	met08_sn_6010	ICAL	L5			08/02/15 20:01	1.0	5	
007	met08_sn_6010	ICV				08/02/15 20:08	1.0	6	
008	met08_sn_6010	CRI				08/02/15 20:13	1.0	7	
009	met08_sn_6010	ICB				08/02/15 20:17	1.0		
010	met08_sn_6010	ICSA				08/02/15 20:22	1.0	8	10:MG=520000
011	met08_sn_6010	ICSAB				08/02/15 20:48	1.0	9	5:AL=520000
012	met08_sn_6010	SAMPLE	268559-006	Water	225651	08/02/15 20:53	1.0		1:NA=160000
013	met08_sn_6010	X	RINSE			08/02/15 21:02	1.0		
014	met08_sn_6010	BS	QC797259	Wipe	225531	08/02/15 21:08	5.0		
015	met08_sn_6010	BSD	QC797260	Wipe	225531	08/02/15 21:13	5.0		
016	met08_sn_6010	SAMPLE	268228-001	Wipe	225531	08/02/15 21:18	1.0		
017	met08_sn_6010	SAMPLE	268234-001	Wipe	225531	08/02/15 21:23	1.0		
018	met08_sn_6010	X	RINSE			08/02/15 21:28	1.0		
019	met08_sn_6010	BLANK	QC797261	Miscell.	225532	08/02/15 21:33	1.0		
020	met08_sn_6010	BS	QC797262	Miscell.	225532	08/02/15 21:38	5.0		
021	met08_sn_6010	BSD	QC797263	Miscell.	225532	08/02/15 21:44	5.0		
022	met08_sn_6010	CCV				08/02/15 21:49	1.0	10	
023	met08_sn_6010	CCB				08/02/15 21:56	1.0		
024	met08_sn_6010	SAMPLE	268228-001	Miscell.	225532	08/02/15 22:01	10.0		
025	met08_sn_6010	SAMPLE	268231-001	Miscell.	225532	08/02/15 22:07	10.0		
026	met08_sn_6010	SAMPLE	268233-001	Miscell.	225532	08/02/15 22:12	10.0		
027	met08_sn_6010	SAMPLE	268240-001	Miscell.	225532	08/02/15 22:17	10.0		
028	met08_sn_6010	SAMPLE	268247-001	Miscell.	225532	08/02/15 22:22	10.0		
029	met08_sn_6010	X	RINSE			08/02/15 22:27	1.0		
030	met08_sn_6010	BLANK	QC797528	Wipe	225605	08/02/15 22:32	1.0		
031	met08_sn_6010	BS	QC797529	Wipe	225605	08/02/15 22:37	5.0		
032	met08_sn_6010	BSD	QC797530	Wipe	225605	08/02/15 22:42	5.0		
033	met08_sn_6010	SAMPLE	268402-001	Wipe	225605	08/02/15 22:47	1.0		3:FE=120000
034	met08_sn_6010	CCV				08/02/15 22:55	1.0	10	
035	met08_sn_6010	XCCB				08/02/15 23:03	1.0		
036	met08_sn_6010	CCB				08/02/15 23:06	1.0		
037	met08_sn_6010	SAMPLE	268402-002	Wipe	225605	08/02/15 23:12	1.0		4:FE=290000
038	met08_sn_6010	SAMPLE	268402-003	Wipe	225605	08/02/15 23:19	1.0		
039	met08_sn_6010	X	RINSE			08/02/15 23:24	1.0		
040	met08_sn_6010	BLANK	QC797803	Filtrate	225672	08/02/15 23:29	1.0		
041	met08_sn_6010	BLANK	QC797804	Filtrate	225672	08/02/15 23:34	1.0		
042	met08_sn_6010	BS	QC797805	Filtrate	225672	08/02/15 23:39	1.0		
043	met08_sn_6010	BSD	QC797806	Filtrate	225672	08/02/15 23:44	1.0		
044	met08_sn_6010	MSS	268460-003	Filtrate	225672	08/02/15 23:48	1.0		1:NA=440000
045	met08_sn_6010	MS	QC797807	Filtrate	225672	08/02/15 23:53	1.0		1:NA=410000
046	met08_sn_6010	MSD	QC797808	Filtrate	225672	08/02/15 23:57	1.0		1:NA=440000
047	met08_sn_6010	CCV				08/03/15 00:01	1.0	10	
048	met08_sn_6010	CCB				08/03/15 00:09	1.0		
049	met08_sn_6010	SER	QC797809	Filtrate	225672	08/03/15 00:14	5.0		
050	met08_sn_6010	PDS	QC797810	Filtrate	225672	08/03/15 00:19	1.0	11 12 13	
051	met08_sn_6010	SAMPLE	268430-001	Filtrate	225672	08/03/15 00:23	1.0		1:NA=120000
052	met08_sn_6010	SAMPLE	268430-002	Filtrate	225672	08/03/15 00:28	1.0		1:NA=260000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	X	RINSE			08/03/15 00:34	1.0		
054	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/03/15 00:39	1.0		
055	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/03/15 00:44	1.0		
056	met08_sn_6010	BS	QC797932	Filtrate	225705	08/03/15 00:49	1.0		
057	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/03/15 00:53	1.0		
058	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/03/15 00:57	1.0		3:MG=560000
059	met08_sn_6010	CCV				08/03/15 01:06	1.0	10	
060	met08_sn_6010	XCCB				08/03/15 01:13	1.0		
061	met08_sn_6010	CCB				08/03/15 01:17	1.0		
062	met08_sn_6010	MS	QC797934	Filtrate	225705	08/03/15 01:22	1.0		3:MG=530000
063	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/03/15 01:30	1.0		3:MG=530000
064	met08_sn_6010	SER	QC797936	Filtrate	225705	08/03/15 01:38	5.0		2:NA=940000
065	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/03/15 01:46	1.0	11 12 13	3:MG=510000
066	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/03/15 01:54	1.0		
067	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/03/15 01:59	10.0		
068	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/03/15 02:04	1.0		
069	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/03/15 02:09	1.0		
070	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/03/15 02:14	1.0		4:MG=580000
071	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/03/15 02:23	1.0		4:MG=570000
072	met08_sn_6010	CCV				08/03/15 02:31	1.0	10	
073	met08_sn_6010	XCCB				08/03/15 02:39	1.0		
074	met08_sn_6010	CCB				08/03/15 02:43	1.0		
075	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/03/15 02:48	1.0		
076	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/03/15 02:53	1.0		
077	met08_sn_6010	SAMPLE	268558-001	Filtrate	225705	08/03/15 02:58	1.0		4:NA=1900000
078	met08_sn_6010	CCV				08/03/15 03:07	1.0	10	
079	met08_sn_6010	XCCB				08/03/15 03:15	1.0		
080	met08_sn_6010	CCB				08/03/15 03:19	1.0		

NCD 08/03/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 80.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS SAMPLE USER REPORT FOR EPA 6010C

Inst : MET08 Lab ID : 268557-001 Client ID : DIC85W07-072815
Seqnum : 85309335058.1 Matrix : Filtrate Acct : JMW (TLB)
File : met08_sn_6010 Batch : 225705 Time : 03-AUG-2015 00:57
Cal : 85309335001 Caldate : 02-AUG-2015
IDF : 1.0 Units : ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Ch	Result	RL	Blank	Flags
Arsenic	A	13	5.0		!<a+ u
Iron	R	330	100		u
Manganese	A	2000	5.0		!<cri+ u

ISTD (ICAL 002)	Ch	ICAL Abund	MSS Abund	%Drift
Yttrium	A	3792342	2915258	-23.13

!=warning +=high bias <=opening a=ICSA u=use

Sequence No.: 58
Sample ID: 268557-001,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 75
Date Collected: 8/3/2015 12:57:32 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: 268557-001,225705,1

Analyte	Back Pressure	Flow
All	138.0 kPa	0.60 L/min

Mean Data: 268557-001,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2915258.4	76.8723	%	0.35051				0.46%
Y	42576.5	97.1335	%	1.56031				1.61%
Ag 328.068†	4545.7	2.53968	ug/L	0.457360	2.53968	ug/L	0.457360	18.01%
Al 308.215 R†	-3.4	-7.91192	ug/L	13.915793	-7.91192	ug/L	13.915793	175.88%
As 188.979†	104.2	13.3128	ug/L	0.57607	13.3128	ug/L	0.57607	4.33%
B 249.677†	248034.8	2296.27	ug/L	1.351	2296.27	ug/L	1.351	0.06%
Ba 233.527†	70589.6	293.211	ug/L	1.3171	293.211	ug/L	1.3171	0.45%
Be 313.107†	-1622.5	-0.496655	ug/L	0.0361557	-0.496655	ug/L	0.0361557	7.28%
Ca 315.887 R†	527165.6	284318	ug/L	1237.49	284318	ug/L	1237.49	0.44%
Cd 214.440†	-332.2	-4.41918	ug/L	0.040352	-4.41918	ug/L	0.040352	0.91%
Co 228.616†	3.0	0.0540388	ug/L	1.14225916	0.0540388	ug/L	1.14225916	>999.9%
Cr 267.716†	435.1	21.0709	ug/L	0.42823	21.0709	ug/L	0.42823	2.03%
Cu 324.752†	622.1	1.86033	ug/L	0.154875	1.86033	ug/L	0.154875	8.33%
Fe 238.204 R†	612.4	328.404	ug/L	7.0253	328.404	ug/L	7.0253	2.14%
K 766.490 R†	283234.2	135277	ug/L	482.24	135277	ug/L	482.24	0.36%
Mg 279.077 R†	176282.1	556705	ug/L	6274.76	556705	ug/L	6274.76	1.13%
Mn 257.610†	1995434.5	1969.65	ug/L	8.595	1969.65	ug/L	8.595	0.44%
Mo 202.031†	168.1	11.2285	ug/L	0.20858	11.2285	ug/L	0.20858	1.86%
Na 589.592 R†	Saturated2							
Ni 231.604†	11.6	0.451991	ug/L	0.3046196	0.451991	ug/L	0.3046196	67.40%
Pb 220.353†	-383.9	-18.4535	ug/L	1.96157	-18.4535	ug/L	1.96157	10.63%
Sb 206.836†	44.9	3.88091	ug/L	0.586770	3.88091	ug/L	0.586770	15.12%
Se 196.026†	236.1	20.4763	ug/L	3.57345	20.4763	ug/L	3.57345	17.45%
Ti 334.940 R†	-85.6	-5.79026	ug/L	0.436340	-5.79026	ug/L	0.436340	7.54%
Tl 190.801†	-149.3	-18.1110	ug/L	2.96513	-18.1110	ug/L	2.96513	16.37%
V 292.402†	-14.3	-0.123221	ug/L	0.0927089	-0.123221	ug/L	0.0927089	75.24%
Zn 206.200†	88.5	3.44795	ug/L	0.314120	3.44795	ug/L	0.314120	9.11%
Sr 421.552 R†	567320.6	4575.83	ug/L	37.138	4575.83	ug/L	37.138	0.81%
Sn 189.927†	-58.3	-6.06070	ug/L	1.014125	-6.06070	ug/L	1.014125	16.73%

CURTIS & TOMPKINS BLANK USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 Lab ID : QC797930
Seqnum : 85309335054.4 Matrix : Filtrate
File : met08_sn_6010 Batch : 225705 Time : 03-AUG-2015 00:39
Cal : 85309335001 Caldate : 02-AUG-2015
IDF : 1.0 Units : ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Ch	Result	RL	Flags
Arsenic	A	ND	5.0	!<a+ u
Iron	R	ND	100	u
Manganese	A	ND	5.0	!<cri+ u

ISTD (ICAL 002)	Ch	ICAL Abund	BLANK Abund	%Drift
Yttrium	A	3792342	3808425	0.42

!=warning +=high bias <=opening a=ICSA u=use

Sequence No.: 54
Sample ID: qc797930,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 71
Date Collected: 8/3/2015 12:39:08 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797930,225705,1

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: qc797930,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3808425.0	100.424	%	1.3236				1.32%
Y	44674.0	101.919	%	2.4952				2.45%
Ag 328.068†	-1267.3	-0.708033	ug/L	0.3522613	-0.708033	ug/L	0.3522613	49.75%
Al 308.215 R†	0.5	1.08223	ug/L	2.684139	1.08223	ug/L	2.684139	248.02%
As 188.979†	-5.8	-0.737452	ug/L	0.9539847	-0.737452	ug/L	0.9539847	129.36%
B 249.677†	1513.8	14.0145	ug/L	0.95211	14.0145	ug/L	0.95211	6.79%
Ba 233.527†	-66.7	-0.276960	ug/L	0.0084997	-0.276960	ug/L	0.0084997	3.07%
Be 313.107†	-642.5	-0.196670	ug/L	0.0132270	-0.196670	ug/L	0.0132270	6.73%
Ca 315.887 R†	6.5	3.48573	ug/L	2.028551	3.48573	ug/L	2.028551	58.20%
Cd 214.440†	-26.4	-0.350699	ug/L	0.0226957	-0.350699	ug/L	0.0226957	6.47%
Co 228.616†	-12.9	-0.186691	ug/L	0.7032751	-0.186691	ug/L	0.7032751	376.71%
Cr 267.716†	-10.5	-0.509563	ug/L	0.3351025	-0.509563	ug/L	0.3351025	65.76%
Cu 324.752†	128.2	0.383487	ug/L	0.2269187	0.383487	ug/L	0.2269187	59.17%
Fe 238.204 R†	-9.1	-4.88456	ug/L	0.588613	-4.88456	ug/L	0.588613	12.05%
K 766.490 R†	-119.6	-57.1314	ug/L	29.35189	-57.1314	ug/L	29.35189	51.38%
Mg 279.077 R†	-2.3	-7.36394	ug/L	10.833622	-7.36394	ug/L	10.833622	147.12%
Mn 257.610†	-779.9	-0.769853	ug/L	0.0061625	-0.769853	ug/L	0.0061625	0.80%
Mo 202.031†	-4.1	-0.276591	ug/L	0.1081861	-0.276591	ug/L	0.1081861	39.11%
Na 589.592 R†	369.6	112.677	ug/L	10.2990	112.677	ug/L	10.2990	9.14%
Ni 231.604†	-2.6	-0.102331	ug/L	0.1827495	-0.102331	ug/L	0.1827495	178.59%
Pb 220.353†	-36.8	-1.76808	ug/L	0.267736	-1.76808	ug/L	0.267736	15.14%
Sb 206.836†	14.6	1.26424	ug/L	0.730795	1.26424	ug/L	0.730795	57.80%
Se 196.026†	-65.6	-5.68563	ug/L	4.550201	-5.68563	ug/L	4.550201	80.03%
Ti 334.940 R†	-14.4	-0.972328	ug/L	0.2299648	-0.972328	ug/L	0.2299648	23.65%
Tl 190.801†	-2.1	-0.260252	ug/L	1.5221372	-0.260252	ug/L	1.5221372	584.87%
V 292.402†	-54.7	-0.473139	ug/L	0.2235827	-0.473139	ug/L	0.2235827	47.26%
Zn 206.200†	50.8	1.97870	ug/L	0.106617	1.97870	ug/L	0.106617	5.39%
Sr 421.552 R†	-69.9	-0.563141	ug/L	0.3575309	-0.563141	ug/L	0.3575309	63.49%
Sn 189.927†	-21.1	-2.19268	ug/L	0.555306	-2.19268	ug/L	0.555306	25.33%

CURTIS & TOMPKINS BLANK USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 Lab ID : QC797931
Seqnum : 85309335055.4 Matrix : Filtrate
File : met08_sn_6010 Batch : 225705 Time : 03-AUG-2015 00:44
Cal : 85309335001 Caldate : 02-AUG-2015
IDF : 1.0 Units : ug/L

50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Ch	Result	RL	Flags
Arsenic	A	ND	5.0	!<a+ u
Iron	R	ND	100	u
Manganese	A	ND	5.0	!<cri+ u

ISTD (ICAL 002)	Ch	ICAL Abund	BLANK Abund	%Drift
Yttrium	A	3792342	3816516	0.64

!=warning +=high bias <=opening a=ICSA u=use

Sequence No.: 55
Sample ID: qc797931,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 72
Date Collected: 8/3/2015 12:44:12 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797931,225705,1

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: qc797931,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3816516.1	100.637	%	0.8133				0.81%
Y	44927.3	102.497	%	2.5832				2.52%
Ag 328.068†	-723.9	-0.404430	ug/L	0.0708732	-0.404430	ug/L	0.0708732	17.52%
Al 308.215 R†	-0.5	-1.18657	ug/L	7.009793	-1.18657	ug/L	7.009793	590.76%
As 188.979†	-5.9	-0.751887	ug/L	0.9215125	-0.751887	ug/L	0.9215125	122.56%
B 249.677†	528.1	4.88901	ug/L	0.644194	4.88901	ug/L	0.644194	13.18%
Ba 233.527†	-69.0	-0.286702	ug/L	0.0284344	-0.286702	ug/L	0.0284344	9.92%
Be 313.107†	-617.2	-0.188932	ug/L	0.0057307	-0.188932	ug/L	0.0057307	3.03%
Ca 315.887 R†	-8.5	-4.60528	ug/L	2.132819	-4.60528	ug/L	2.132819	46.31%
Cd 214.440†	-31.7	-0.421579	ug/L	0.0209293	-0.421579	ug/L	0.0209293	4.96%
Co 228.616†	-18.0	-0.263034	ug/L	0.8400555	-0.263034	ug/L	0.8400555	319.37%
Cr 267.716†	-6.0	-0.290404	ug/L	0.1937931	-0.290404	ug/L	0.1937931	66.73%
Cu 324.752†	-126.8	-0.379161	ug/L	0.0648347	-0.379161	ug/L	0.0648347	17.10%
Fe 238.204 R†	-12.6	-6.77159	ug/L	1.682714	-6.77159	ug/L	1.682714	24.85%
K 766.490 R†	85.3	40.7197	ug/L	110.96215	40.7197	ug/L	110.96215	272.50%
Mg 279.077 R†	-0.6	-1.98375	ug/L	8.670204	-1.98375	ug/L	8.670204	437.06%
Mn 257.610†	-752.0	-0.742254	ug/L	0.0478954	-0.742254	ug/L	0.0478954	6.45%
Mo 202.031†	-7.8	-0.519347	ug/L	0.3308314	-0.519347	ug/L	0.3308314	63.70%
Na 589.592 R†	534.2	162.845	ug/L	5.9718	162.845	ug/L	5.9718	3.67%
Ni 231.604†	-1.4	-0.0529644	ug/L	0.17138805	-0.0529644	ug/L	0.17138805	323.59%
Pb 220.353†	-45.4	-2.18369	ug/L	1.157772	-2.18369	ug/L	1.157772	53.02%
Sb 206.836†	-4.3	-0.370433	ug/L	1.2985038	-0.370433	ug/L	1.2985038	350.54%
Se 196.026†	-46.3	-4.01143	ug/L	0.427140	-4.01143	ug/L	0.427140	10.65%
Ti 334.940 R†	-8.9	-0.604940	ug/L	0.3860017	-0.604940	ug/L	0.3860017	63.81%
Tl 190.801†	-1.2	-0.149872	ug/L	1.5134843	-0.149872	ug/L	1.5134843	>999.9%
V 292.402†	-38.8	-0.335701	ug/L	0.2305123	-0.335701	ug/L	0.2305123	68.67%
Zn 206.200†	34.9	1.35916	ug/L	0.279190	1.35916	ug/L	0.279190	20.54%
Sr 421.552 R†	-89.6	-0.722072	ug/L	0.3828882	-0.722072	ug/L	0.3828882	53.03%
Sn 189.927†	-22.3	-2.31414	ug/L	0.489432	-2.31414	ug/L	0.489432	21.15%

CURTIS & TOMPKINS SPIKE USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Type : BS
Inst : MET08
Seqnum : 85309335056.4
File : met08_sn_6010
IDF : 1.0
Lab ID : QC797932
Matrix : Filtrate
Batch : 225705
Time : 03-AUG-2015 00:49
Cal : 85309335001
Units : ug/L

Type : BSD
Inst : MET08
Seqnum : 85309335057.4
File : met08_sn_6010
IDF : 1.0
Lab ID : QC797933
Matrix : Filtrate
Batch : 225705
Time : 03-AUG-2015 00:53
Cal : 85309335001

BS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
BSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	Spiked	BS	Ch	%Rec	BSD	Ch	%Rec	Limits	RPD	Lim	Flags
Arsenic	100.0	95.49	A	95	95.95	A	96	80-120	0	20	!<a+ u
Iron	10000	10350	R	104	10770	R	108	80-120	4	20	u
Manganese	100.0	99.81	A	100	98.70	A	99	80-120	1	20	!<cri+ u

ISTD (ICAL 002)	Ch	ICAL Abund	BS Abund	%Drift
Yttrium	A	3792342	3778177	-0.37

ISTD (ICAL 002)	Ch	ICAL Abund	BSD Abund	%Drift
Yttrium	A	3792342	3781025	-0.30

!=warning +=high bias <=opening a=ICSA u=use

Sequence No.: 56
Sample ID: qc797932,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 73
Date Collected: 8/3/2015 12:49:17 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797932,225705,1

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: qc797932,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3778176.8	99.6265	%	0.36280				0.36%
Y	44418.8	101.337	%	0.3449				0.34%
Ag 328.068†	180683.0	100.947	ug/L	2.4718	100.947	ug/L	2.4718	2.45%
Al 308.215 R†	4298.0	9944.57	ug/L	48.244	9944.57	ug/L	48.244	0.49%
As 188.979†	747.1	95.4894	ug/L	1.01719	95.4894	ug/L	1.01719	1.07%
B 249.677†	107578.8	995.947	ug/L	14.6409	995.947	ug/L	14.6409	1.47%
Ba 233.527†	24478.7	101.678	ug/L	1.5120	101.678	ug/L	1.5120	1.49%
Be 313.107†	335906.4	102.822	ug/L	0.3762	102.822	ug/L	0.3762	0.37%
Ca 315.887 R†	18985.1	10239.3	ug/L	29.36	10239.3	ug/L	29.36	0.29%
Cd 214.440†	7706.8	102.513	ug/L	1.4637	102.513	ug/L	1.4637	1.43%
Co 228.616†	6821.4	98.2696	ug/L	0.67263	98.2696	ug/L	0.67263	0.68%
Cr 267.716†	2099.0	101.646	ug/L	3.5998	101.646	ug/L	3.5998	3.54%
Cu 324.752†	33130.1	99.0697	ug/L	2.17661	99.0697	ug/L	2.17661	2.20%
Fe 238.204 R†	19307.6	10353.9	ug/L	8.16	10353.9	ug/L	8.16	0.08%
K 766.490 R†	20294.8	9693.06	ug/L	64.602	9693.06	ug/L	64.602	0.67%
Mg 279.077 R†	3219.8	10168.1	ug/L	59.95	10168.1	ug/L	59.95	0.59%
Mn 257.610†	101113.8	99.8073	ug/L	1.70837	99.8073	ug/L	1.70837	1.71%
Mo 202.031†	1509.0	100.809	ug/L	1.2321	100.809	ug/L	1.2321	1.22%
Na 589.592 R†	35016.2	10674.2	ug/L	46.26	10674.2	ug/L	46.26	0.43%
Ni 231.604†	2569.6	99.7645	ug/L	0.99794	99.7645	ug/L	0.99794	1.00%
Pb 220.353†	2013.3	96.7814	ug/L	0.77454	96.7814	ug/L	0.77454	0.80%
Sb 206.836†	1129.7	97.7285	ug/L	1.19997	97.7285	ug/L	1.19997	1.23%
Se 196.026†	1124.5	97.5094	ug/L	3.41830	97.5094	ug/L	3.41830	3.51%
Ti 334.940 R†	14054.3	950.587	ug/L	3.0980	950.587	ug/L	3.0980	0.33%
Tl 190.801†	362.6	43.9918	ug/L	2.54612	43.9918	ug/L	2.54612	5.79%
V 292.402†	11804.0	102.033	ug/L	2.9179	102.033	ug/L	2.9179	2.86%
Zn 206.200†	2905.0	113.183	ug/L	0.2814	113.183	ug/L	0.2814	0.25%
Sr 421.552 R†	11940.2	96.0192	ug/L	0.41273	96.0192	ug/L	0.41273	0.43%
Sn 189.927†	9824.9	1021.25	ug/L	4.453	1021.25	ug/L	4.453	0.44%

Sequence No.: 57
Sample ID: qc797933,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 74
Date Collected: 8/3/2015 12:53:24 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797933,225705,1

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: qc797933,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3781025.4	99.7016	%	2.41157				2.42%
Y	44722.0	102.028	%	1.5546				1.52%
Ag 328.068†	178169.4	99.5428	ug/L	0.48763	99.5428	ug/L	0.48763	0.49%
Al 308.215 R†	4463.6	10327.6	ug/L	37.90	10327.6	ug/L	37.90	0.37%
As 188.979†	750.8	95.9502	ug/L	2.19780	95.9502	ug/L	2.19780	2.29%
B 249.677†	106956.4	990.184	ug/L	20.0462	990.184	ug/L	20.0462	2.02%
Ba 233.527†	24158.7	100.349	ug/L	2.0272	100.349	ug/L	2.0272	2.02%
Be 313.107†	332608.0	101.813	ug/L	0.1481	101.813	ug/L	0.1481	0.15%
Ca 315.887 R†	19672.2	10609.9	ug/L	39.58	10609.9	ug/L	39.58	0.37%
Cd 214.440†	7680.9	102.168	ug/L	0.8614	102.168	ug/L	0.8614	0.84%
Co 228.616†	6816.2	98.1162	ug/L	2.23869	98.1162	ug/L	2.23869	2.28%
Cr 267.716†	2069.6	100.222	ug/L	7.2787	100.222	ug/L	7.2787	7.26%
Cu 324.752†	32913.7	98.4227	ug/L	1.88946	98.4227	ug/L	1.88946	1.92%
Fe 238.204 R†	20089.9	10773.4	ug/L	47.32	10773.4	ug/L	47.32	0.44%
K 766.490 R†	20512.1	9796.87	ug/L	128.806	9796.87	ug/L	128.806	1.31%
Mg 279.077 R†	3289.8	10389.3	ug/L	105.28	10389.3	ug/L	105.28	1.01%
Mn 257.610†	99987.2	98.6953	ug/L	1.73276	98.6953	ug/L	1.73276	1.76%
Mo 202.031†	1510.7	100.918	ug/L	2.0465	100.918	ug/L	2.0465	2.03%
Na 589.592 R†	39959.6	12181.1	ug/L	227.16	12181.1	ug/L	227.16	1.86%
Ni 231.604†	2562.8	99.5013	ug/L	1.06304	99.5013	ug/L	1.06304	1.07%
Pb 220.353†	2011.8	96.7106	ug/L	1.66314	96.7106	ug/L	1.66314	1.72%
Sb 206.836†	1140.7	98.6746	ug/L	0.16844	98.6746	ug/L	0.16844	0.17%
Se 196.026†	1108.9	96.1577	ug/L	5.56529	96.1577	ug/L	5.56529	5.79%
Ti 334.940 R†	14678.2	992.784	ug/L	1.7185	992.784	ug/L	1.7185	0.17%
Tl 190.801†	361.4	43.8452	ug/L	2.72896	43.8452	ug/L	2.72896	6.22%
V 292.402†	11773.0	101.765	ug/L	0.4566	101.765	ug/L	0.4566	0.45%
Zn 206.200†	2633.6	102.606	ug/L	2.3665	102.606	ug/L	2.3665	2.31%
Sr 421.552 R†	12130.6	97.5420	ug/L	0.43768	97.5420	ug/L	0.43768	0.45%
Sn 189.927†	9789.9	1017.61	ug/L	24.996	1017.61	ug/L	24.996	2.46%

CURTIS & TOMPKINS SPIKE USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Type : MSS	Type : MS	Type : MSD
Inst : MET08	Inst : MET08	Inst : MET08
Seqnum : 85309335058.1	Seqnum : 85309335062.5	Seqnum : 85309335063.5
File : met08_sn_6010	File : met08_sn_6010	File : met08_sn_6010
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 268557-001	Lab ID : QC797934	Lab ID : QC797935
Matrix : Filtrate	Matrix : Filtrate	Matrix : Filtrate
Batch : 225705	Batch : 225705	Batch : 225705
Time : 03-AUG-2015 00:57	Time : 03-AUG-2015 01:22	Time : 03-AUG-2015 01:30
Cal : 85309335001	Cal : 85309335001	Cal : 85309335001
Units : ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Ch	Spiked	MS	Ch	%Rec	MSD	Ch	%Rec	Limits	RPD	Lim	Flags
Arsenic	13.31	A	100.0	128.3	A	115	121.2	A	108	80-120	6	20	!<a+ u
Iron	328.4	R	10000	9071	R	87	9024	R	87	80-120	1	20	>c- **b***
Manganese	1970	A	100.0	1982	A	12	1992	A	22	80-120	0	20	!<cri+ : u

ISTD (ICAL 002)	Ch	ICAL Abund	MS Abund	%Drift
Yttrium	A	3792342	2972512	-21.62

ISTD (ICAL 002)	Ch	ICAL Abund	MSD Abund	%Drift
Yttrium	A	3792342	2953631	-22.12

!=warning +=high bias -=low bias :=recovery not meaningful <=opening >=closing a=ICSA b=noncompliant c=CCV u=use

Sequence No.: 62
Sample ID: qc797934,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 76
Date Collected: 8/3/2015 1:22:54 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797934,225705,1

Analyte	Back Pressure	Flow
All	138.0 kPa	0.60 L/min

Mean Data: qc797934,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2972512.1	78.3820	%	0.16085				0.21%
Y	41888.4	95.5637	%	0.95558				1.00%
Ag 328.068†	221388.5	123.689	ug/L	0.7992	123.689	ug/L	0.7992	0.65%
Al 308.215 R†	4076.2	9431.19	ug/L	62.290	9431.19	ug/L	62.290	0.66%
As 188.979†	1003.5	128.257	ug/L	2.0796	128.257	ug/L	2.0796	1.62%
B 249.677†	354153.2	3278.69	ug/L	22.551	3278.69	ug/L	22.551	0.69%
Ba 233.527†	90290.8	375.045	ug/L	0.6563	375.045	ug/L	0.6563	0.17%
Be 313.107†	323564.6	99.0445	ug/L	0.28557	99.0445	ug/L	0.28557	0.29%
Ca 315.887 R†	524389.8	282821	ug/L	6404.55	282821	ug/L	6404.55	2.26%
Cd 214.440†	6910.2	91.9175	ug/L	1.75452	91.9175	ug/L	1.75452	1.91%
Co 228.616†	6180.0	88.9438	ug/L	0.50502	88.9438	ug/L	0.50502	0.57%
Cr 267.716†	2408.3	116.628	ug/L	3.1474	116.628	ug/L	3.1474	2.70%
Cu 324.752†	37216.5	111.289	ug/L	0.6625	111.289	ug/L	0.6625	0.60%
Fe 238.204 R†	16915.9	9071.27	ug/L	24.474	9071.27	ug/L	24.474	0.27%
K 766.490 R†	293833.2	140339	ug/L	3306.28	140339	ug/L	3306.28	2.36%
Mg 279.077 R†	166988.4	527355	ug/L	10530.12	527355	ug/L	10530.12	2.00%
Mn 257.610†	2007574.1	1981.63	ug/L	9.280	1981.63	ug/L	9.280	0.47%
Mo 202.031†	1628.8	108.806	ug/L	0.5755	108.806	ug/L	0.5755	0.53%
Na 589.592 R†	Saturated2							
Ni 231.604†	2268.0	88.0566	ug/L	1.05205	88.0566	ug/L	1.05205	1.19%
Pb 220.353†	1500.2	72.1192	ug/L	1.72788	72.1192	ug/L	1.72788	2.40%
Sb 206.836†	1219.3	105.474	ug/L	0.2125	105.474	ug/L	0.2125	0.20%
Se 196.026†	1541.2	133.645	ug/L	7.9248	133.645	ug/L	7.9248	5.93%
Ti 334.940 R†	13436.2	908.781	ug/L	4.2562	908.781	ug/L	4.2562	0.47%
Tl 190.801†	172.7	20.9584	ug/L	6.40797	20.9584	ug/L	6.40797	30.57%
V 292.402†	11567.4	99.9878	ug/L	1.26872	99.9878	ug/L	1.26872	1.27%
Zn 206.200†	2497.2	97.2929	ug/L	0.32386	97.2929	ug/L	0.32386	0.33%
Sr 421.552 R†	559986.7	4516.38	ug/L	110.985	4516.38	ug/L	110.985	2.46%
Sn 189.927†	8534.4	887.109	ug/L	0.4004	887.109	ug/L	0.4004	0.05%

Sequence No.: 63
Sample ID: qc797935,225705,1
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 77
Date Collected: 8/3/2015 1:30:29 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797935,225705,1

Analyte	Back Pressure	Flow
All	139.0 kPa	0.60 L/min

Mean Data: qc797935,225705,1

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2953630.8	77.8841	%	0.78661				1.01%
Y	41608.8	94.9258	%	0.21032				0.22%
Ag 328.068†	211273.1	118.038	ug/L	2.1447	118.038	ug/L	2.1447	1.82%
Al 308.215 R†	4139.2	9577.07	ug/L	59.104	9577.07	ug/L	59.104	0.62%
As 188.979†	948.3	121.198	ug/L	2.0340	121.198	ug/L	2.0340	1.68%
B 249.677†	350373.0	3243.70	ug/L	12.364	3243.70	ug/L	12.364	0.38%
Ba 233.527†	90674.6	376.639	ug/L	1.3440	376.639	ug/L	1.3440	0.36%
Be 313.107†	321934.6	98.5456	ug/L	0.17005	98.5456	ug/L	0.17005	0.17%
Ca 315.887 R†	529683.1	285676	ug/L	5506.30	285676	ug/L	5506.30	1.93%
Cd 214.440†	6740.9	89.6650	ug/L	1.53082	89.6650	ug/L	1.53082	1.71%
Co 228.616†	6181.8	88.9376	ug/L	0.31311	88.9376	ug/L	0.31311	0.35%
Cr 267.716†	2434.5	117.894	ug/L	4.6101	117.894	ug/L	4.6101	3.91%
Cu 324.752†	37203.3	111.250	ug/L	1.0789	111.250	ug/L	1.0789	0.97%
Fe 238.204 R†	16828.2	9024.26	ug/L	17.475	9024.26	ug/L	17.475	0.19%
K 766.490 R†	302754.2	144600	ug/L	2711.49	144600	ug/L	2711.49	1.88%
Mg 279.077 R†	166879.3	527010	ug/L	9616.74	527010	ug/L	9616.74	1.82%
Mn 257.610†	2017600.2	1991.53	ug/L	6.677	1991.53	ug/L	6.677	0.34%
Mo 202.031†	1611.5	107.652	ug/L	0.6640	107.652	ug/L	0.6640	0.62%
Na 589.592 R†	Saturated2							
Ni 231.604†	2255.7	87.5805	ug/L	1.20168	87.5805	ug/L	1.20168	1.37%
Pb 220.353†	1493.9	71.8130	ug/L	1.65441	71.8130	ug/L	1.65441	2.30%
Sb 206.836†	1228.3	106.258	ug/L	0.5284	106.258	ug/L	0.5284	0.50%
Se 196.026†	1536.5	133.242	ug/L	9.7254	133.242	ug/L	9.7254	7.30%
Ti 334.940 R†	13700.7	926.668	ug/L	3.1990	926.668	ug/L	3.1990	0.35%
Tl 190.801†	166.8	20.2399	ug/L	3.91185	20.2399	ug/L	3.91185	19.33%
V 292.402†	11531.0	99.6733	ug/L	0.96295	99.6733	ug/L	0.96295	0.97%
Zn 206.200†	2476.0	96.4691	ug/L	0.72954	96.4691	ug/L	0.72954	0.76%
Sr 421.552 R†	569569.0	4593.65	ug/L	80.251	4593.65	ug/L	80.251	1.75%
Sn 189.927†	8393.7	872.487	ug/L	9.6759	872.487	ug/L	9.6759	1.11%

CURTIS & TOMPKINS SERIAL DILUTION FOR 268557 METALS Filtrate
EPA 6010C

Type	: MSS	Type	: SER
Inst	: MET08	Inst	: MET08
Seqnum	: 85309335058.1	Seqnum	: 85309335064.6
File	: met08_sn_6010	File	: met08_sn_6010
IDF	: 1.0	IDF	: 5.0
Lab ID	: 268557-001	Lab ID	: QC797936
Matrix	: Filtrate	Matrix	: Filtrate
Batch	: 225705	Batch	: 225705
Time	: 03-AUG-2015 00:57	Time	: 03-AUG-2015 01:38
Cal	: 85309335001	Cal	: 85309335001
Units	: ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
SER: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Ch	RL	SER	Ch	RL	%D	Lim	Flags
Arsenic	13.31	A	5.000	ND	A	25.00		10	!<a+ u
Iron	328.4	R	100.0	298.3 J	R	500.0		10	>c- **b***
Manganese	1970	A	5.000	1995	A	25.00	1	10	!<cri+ u

ISTD (ICAL 002)	Ch	ICAL Abund	SER Abund	%Drift
Yttrium	A	3792342	3352778	-11.59

!=warning +=high bias -=low bias <=opening >=closing a=ICSA b=noncompliant c=CCV u=use

Sequence No.: 64
Sample ID: qc797936,225705,5
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 78
Date Collected: 8/3/2015 1:38:06 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: qc797936,225705,5

Analyte	Back Pressure	Flow
All	138.0 kPa	0.60 L/min

Mean Data: qc797936,225705,5

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3352778.4	88.4092	%	0.90925				1.03%
Y	42931.2	97.9427	%	1.01066				1.03%
Ag 328.068†	2442.0	1.36436	ug/L	0.281772	1.36436	ug/L	0.281772	20.65%
Al 308.215 R†	7.9	18.2531	ug/L	8.74078	18.2531	ug/L	8.74078	47.89%
As 188.979†	-18.2	-2.32606	ug/L	0.241866	-2.32606	ug/L	0.241866	10.40%
B 249.677†	48530.7	449.290	ug/L	2.1479	449.290	ug/L	2.1479	0.48%
Ba 233.527†	13954.2	57.9623	ug/L	0.35611	57.9623	ug/L	0.35611	0.61%
Be 313.107†	-891.9	-0.273002	ug/L	0.0142840	-0.273002	ug/L	0.0142840	5.23%
Ca 315.887 R†	107879.9	58183.3	ug/L	98.46	58183.3	ug/L	98.46	0.17%
Cd 214.440†	-93.9	-1.24851	ug/L	0.015125	-1.24851	ug/L	0.015125	1.21%
Co 228.616†	-82.6	-1.20869	ug/L	0.333760	-1.20869	ug/L	0.333760	27.61%
Cr 267.716†	163.7	7.92868	ug/L	0.126976	7.92868	ug/L	0.126976	1.60%
Cu 324.752†	263.1	0.786693	ug/L	0.1514222	0.786693	ug/L	0.1514222	19.25%
Fe 238.204 R†	111.3	59.6691	ug/L	1.54660	59.6691	ug/L	1.54660	2.59%
K 766.490 R†	52367.1	25011.3	ug/L	303.04	25011.3	ug/L	303.04	1.21%
Mg 279.077 R†	34862.2	110096	ug/L	2482.55	110096	ug/L	2482.55	2.25%
Mn 257.610†	404204.3	398.982	ug/L	1.6289	398.982	ug/L	1.6289	0.41%
Mo 202.031†	83.5	5.58101	ug/L	0.158281	5.58101	ug/L	0.158281	2.84%
Na 589.592 R†	3068146.7	935278	ug/L	8008.46	935278	ug/L	8008.46	0.86%
Ni 231.604†	-1.3	-0.0518465	ug/L	0.02417474	-0.0518465	ug/L	0.02417474	46.63%
Pb 220.353†	-221.0	-10.6237	ug/L	1.31452	-10.6237	ug/L	1.31452	12.37%
Sb 206.836†	0.0	0.0003843	ug/L	0.19206762	0.0003843	ug/L	0.19206762	>999.9%
Se 196.026†	-35.0	-3.03763	ug/L	5.105648	-3.03763	ug/L	5.105648	168.08%
Ti 334.940 R†	-13.0	-0.877342	ug/L	0.3959993	-0.877342	ug/L	0.3959993	45.14%
Tl 190.801†	-35.7	-4.33692	ug/L	3.133945	-4.33692	ug/L	3.133945	72.26%
V 292.402†	41.2	0.356202	ug/L	0.3752140	0.356202	ug/L	0.3752140	105.34%
Zn 206.200†	128.0	4.98540	ug/L	0.089549	4.98540	ug/L	0.089549	1.80%
Sr 421.552 R†	114729.4	925.368	ug/L	10.9159	925.368	ug/L	10.9159	1.18%
Sn 189.927†	-48.7	-5.05883	ug/L	0.117507	-5.05883	ug/L	0.117507	2.32%

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85309335001
Units : ug/L

Date : 02-AUG-2015 19:35
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85309335002	L1	02-AUG-2015 19:40	S27752
L2	met08_sn_6010	85309335003	L2	02-AUG-2015 19:45	S27753
L3	met08_sn_6010	85309335004	L3	02-AUG-2015 19:49	S27754
L4	met08_sn_6010	85309335005	L4	02-AUG-2015 19:55	S27755
L5	met08_sn_6010	85309335006	L5	02-AUG-2015 20:01	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	7.1600	7.8180	7.6919	7.8257		LOR0	0.00000	0.12781		7.6239	1.000	0.995	
Manganese	A	1091.8	1067.2	1038.8	1012.8		LOR0	0.00000	9.87E-4		1052.7	1.000	0.995	
Iron	R	2.1420		2.0283	1.9703	1.8637	LOR0	0.00000	0.53626		2.0011	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-8	100.00	0	1000.0	-2	10000	0		
Manganese	A	5.0000	8	100.00	5	1000.0	3	10000	0		
Iron	R	100.00	15			1000.0	9	10000	6	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85309335001 Cal Date : 02-AUG-2015

ICV 85309335007 (02-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5028	ug/L	1	10	
Manganese	A	5000	4973	ug/L	-1	10	
Iron	R	20000	20580	ug/L	3	10	

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 1
Date Collected: 8/2/2015 7:35:54 PM
Data Type: Reprocessed on 8/2/2015 8:47:06 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICALBLK,

Analyte	Back Pressure	Flow
All	133.0 kPa	0.60 L/min

Mean Data: ICALBLK,

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Ag 328.068	978.2	522.74	53.44%	[0.00]	ug/L
Al 308.215 R	-12.1	6.99	57.96%	[0.00]	ug/L
As 188.979	13.7	4.75	34.82%	[0.00]	ug/L
B 249.677	1115.6	98.77	8.85%	[0.00]	ug/L
Ba 233.527	16.2	27.55	169.95%	[0.00]	ug/L
Be 313.107	394.9	91.63	23.20%	[0.00]	ug/L
Ca 315.887 R	-92.5	9.79	10.59%	[0.00]	ug/L
Cd 214.440	22.5	8.17	36.27%	[0.00]	ug/L
Co 228.616	-429.2	22.93	5.34%	[0.00]	ug/L
Cr 267.716	-30.5	8.53	27.97%	[0.00]	ug/L
Cu 324.752	2535.5	24.04	0.95%	[0.00]	ug/L
Fe 238.204 R	67.9	3.57	5.26%	[0.00]	ug/L
K 766.490 R	667.0	198.07	29.69%	[0.00]	ug/L
Mg 279.077 R	21.2	0.91	4.30%	[0.00]	ug/L
Mn 257.610	1717.3	146.47	8.53%	[0.00]	ug/L
Mo 202.031	9.8	5.25	53.63%	[0.00]	ug/L
Na 589.592 R	-225.4	36.02	15.98%	[0.00]	ug/L
Ni 231.604	-100.6	7.70	7.66%	[0.00]	ug/L
Pb 220.353	64.2	5.72	8.91%	[0.00]	ug/L
Sb 206.836	46.1	15.59	33.83%	[0.00]	ug/L
Se 196.026	80.0	21.86	27.33%	[0.00]	ug/L
Ti 334.940 R	5.7	2.32	40.45%	[0.00]	ug/L
Tl 190.801	-22.3	13.85	62.02%	[0.00]	ug/L
V 292.402	-35.0	39.57	113.11%	[0.00]	ug/L
Zn 206.200	18.2	2.55	14.01%	[0.00]	ug/L
Sr 421.552 R	32.2	46.11	143.38%	[0.00]	ug/L
Sn 189.927	22.5	5.97	26.54%	[0.00]	ug/L

Sequence No.: 2
Sample ID: ICAL,L1,S27752,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 2
Date Collected: 8/2/2015 7:40:54 PM
Data Type: Reprocessed on 8/2/2015 8:47:06 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L1,S27752,1

Analyte	Back Pressure	Flow
All	133.0 kPa	0.60 L/min

Mean Data: ICAL,L1,S27752,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3792341.5	47402.26	1.25%	100.000	%
Y	43832.9	824.14	1.88%	100.000	%
Ag 328.068†	7430.6	268.95	3.62%	[5]	ug/L
Al 308.215 R†	50.1	4.73	9.44%	[100]	ug/L
As 188.979†	35.8	6.04	16.89%	[5]	ug/L
B 249.677†	10395.2	209.93	2.02%	[100]	ug/L
Ba 233.527†	1264.3	53.29	4.22%	[5]	ug/L
Be 313.107†	6797.4	257.47	3.79%	[2]	ug/L
Ca 315.887 R†	397.9	5.80	1.46%	[200]	ug/L
Cd 214.440†	378.8	16.15	4.26%	[5]	ug/L
Co 228.616†	308.7	60.83	19.71%	[5]	ug/L
Cr 267.716†	115.9	5.11	4.41%	[5]	ug/L
Cu 324.752†	1761.2	89.23	5.07%	[5]	ug/L
Fe 238.204 R†	214.2	3.78	1.77%	[100]	ug/L
K 766.490 R†	823.0	128.02	15.55%	[500]	ug/L
Mg 279.077 R†	71.4	2.24	3.13%	[200]	ug/L
Mn 257.610†	5459.0	230.53	4.22%	[5]	ug/L
Mo 202.031†	77.6	1.45	1.87%	[5]	ug/L
Na 589.592 R†	1923.2	22.59	1.17%	[500]	ug/L
Ni 231.604†	122.1	3.16	2.59%	[5]	ug/L
Pb 220.353†	91.3	10.54	11.54%	[5]	ug/L
Sb 206.836†	115.4	34.54	29.93%	[10]	ug/L
Se 196.026†	62.4	6.33	10.15%	[10]	ug/L
Ti 334.940 R†	154.0	6.10	3.96%	[10]	ug/L
Tl 190.801†	83.1	8.74	10.51%	[10]	ug/L
V 292.402†	607.9	29.60	4.87%	[5]	ug/L
Zn 206.200†	522.5	9.24	1.77%	[20]	ug/L
Sr 421.552 R†	631.4	8.78	1.39%	[5]	ug/L
Sn 189.927†	380.5	5.97	1.57%	[40]	ug/L

Sequence No.: 3
Sample ID: ICAL,L2,S27753,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 3
Date Collected: 8/2/2015 7:45:56 PM
Data Type: Reprocessed on 8/2/2015 8:47:07 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L2,S27753,1

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: ICAL,L2,S27753,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3824754.6	37118.89	0.97%	100.855	%
Y	44510.8	837.00	1.88%	101.546	%
Ag 328.068†	35799.9	1141.47	3.19%	[20]	ug/L
As 188.979†	781.8	16.51	2.11%	[100]	ug/L
Ba 233.527†	25068.5	591.34	2.36%	[100]	ug/L
Be 313.107†	330871.5	1102.90	0.33%	[100]	ug/L
Cd 214.440†	7867.3	301.27	3.83%	[100]	ug/L
Co 228.616†	6689.5	236.43	3.53%	[100]	ug/L
Cr 267.716†	2264.6	101.22	4.47%	[100]	ug/L
Cu 324.752†	32575.9	793.92	2.44%	[100]	ug/L
Mn 257.610†	106723.2	2324.93	2.18%	[100]	ug/L
Mo 202.031†	1571.1	32.33	2.06%	[100]	ug/L
Ni 231.604†	2536.4	59.90	2.36%	[100]	ug/L
Pb 220.353†	2129.7	40.18	1.89%	[100]	ug/L
Sb 206.836†	1148.5	41.02	3.57%	[100]	ug/L
Se 196.026†	1129.1	10.69	0.95%	[100]	ug/L
Ti 334.940 R†	1517.5	32.61	2.15%	[100]	ug/L
Tl 190.801†	881.2	11.10	1.26%	[100]	ug/L
V 292.402†	11918.5	342.66	2.87%	[100]	ug/L
Zn 206.200†	2653.2	32.52	1.23%	[100]	ug/L
Sr 421.552 R†	12469.2	82.31	0.66%	[100]	ug/L
Sn 189.927†	1000.4	9.40	0.94%	[100]	ug/L

Sequence No.: 4
Sample ID: ICAL,L3,S27754,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 4
Date Collected: 8/2/2015 7:49:59 PM
Data Type: Reprocessed on 8/2/2015 8:47:08 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L3,S27754,1

Analyte	Back Pressure	Flow
All	133.0 kPa	0.60 L/min

Mean Data: ICAL,L3,S27754,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3763313.8	15926.17	0.42%	99.2346	%
Y	43437.6	231.83	0.53%	99.0981	%
Ag 328.068†	352322.8	6900.58	1.96%	[200]	ug/L
Al 308.215 R†	459.5	5.48	1.19%	[1000]	ug/L
As 188.979†	7691.9	81.73	1.06%	[1000]	ug/L
B 249.677†	106390.1	1995.22	1.88%	[1000]	ug/L
Ba 233.527†	242844.0	5099.18	2.10%	[1000]	ug/L
Be 313.107†	3266440.0	32739.48	1.00%	[1000]	ug/L
Ca 315.887 R†	2033.9	11.22	0.55%	[1000]	ug/L
Cd 214.440†	74495.8	2049.04	2.75%	[1000]	ug/L
Co 228.616†	69442.7	1194.80	1.72%	[1000]	ug/L
Cr 267.716†	23053.3	439.54	1.91%	[1000]	ug/L
Cu 324.752†	329160.2	3514.14	1.07%	[1000]	ug/L
Fe 238.204 R†	2028.3	7.93	0.39%	[1000]	ug/L
K 766.490 R†	1819.1	206.00	11.32%	[1000]	ug/L
Mg 279.077 R†	345.7	2.15	0.62%	[1000]	ug/L
Mn 257.610†	1038808.5	10841.32	1.04%	[1000]	ug/L
Mo 202.031†	14840.5	169.76	1.14%	[1000]	ug/L
Na 589.592 R†	3953.4	79.79	2.02%	[1000]	ug/L
Ni 231.604†	25468.6	637.91	2.50%	[1000]	ug/L
Pb 220.353†	20925.5	222.75	1.06%	[1000]	ug/L
Sb 206.836†	10848.1	138.85	1.28%	[1000]	ug/L
Se 196.026†	11447.6	122.35	1.07%	[1000]	ug/L
Ti 334.940 R†	14865.5	14.20	0.10%	[1000]	ug/L
Tl 190.801†	8930.4	76.31	0.85%	[1000]	ug/L
V 292.402†	112902.8	2712.13	2.40%	[1000]	ug/L
Zn 206.200†	26072.6	603.11	2.31%	[1000]	ug/L
Sr 421.552 R†	126294.1	1657.15	1.31%	[1000]	ug/L
Sn 189.927†	9721.5	100.20	1.03%	[1000]	ug/L

Sequence No.: 5
Sample ID: ICAL,L4,S27755,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 5
Date Collected: 8/2/2015 7:55:05 PM
Data Type: Reprocessed on 8/2/2015 8:47:09 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L4,S27755,1

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: ICAL,L4,S27755,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3753941.2	27406.90	0.73%	98.9874	%
Y	43502.2	1705.86	3.92%	99.2455	%
Ag 328.068†	3580323.4	14389.27	0.40%	[2000]	ug/L
Al 308.215 R†	4506.7	208.00	4.62%	[10000]	ug/L
As 188.979†	78257.4	1161.44	1.48%	[10000]	ug/L
B 249.677†	1080332.8	6982.41	0.65%	[10000]	ug/L
Ba 233.527†	2407245.4	19084.81	0.79%	[10000]	ug/L
Ca 315.887 R†	19836.0	928.82	4.68%	[10000]	ug/L
Cd 214.440†	751850.8	3533.20	0.47%	[10000]	ug/L
Co 228.616†	682155.5	5477.61	0.80%	[10000]	ug/L
Cr 267.716†	206254.1	3621.32	1.76%	[10000]	ug/L
Cu 324.752†	3344654.3	17891.98	0.53%	[10000]	ug/L
Fe 238.204 R†	19702.5	953.68	4.84%	[10000]	ug/L
K 766.490 R†	21071.3	1375.85	6.53%	[10000]	ug/L
Mg 279.077 R†	3301.0	162.72	4.93%	[10000]	ug/L
Mn 257.610†	10128276.6	52991.70	0.52%	[10000]	ug/L
Mo 202.031†	149705.6	759.96	0.51%	[10000]	ug/L
Na 589.592 R†	36954.8	2334.91	6.32%	[10000]	ug/L
Ni 231.604†	257591.0	1445.09	0.56%	[10000]	ug/L
Pb 220.353†	208008.0	2557.14	1.23%	[10000]	ug/L
Sb 206.836†	115670.7	1580.30	1.37%	[10000]	ug/L
Se 196.026†	115328.6	1462.32	1.27%	[10000]	ug/L
Ti 334.940 R†	147840.2	8797.00	5.95%	[10000]	ug/L
Tl 190.801†	82347.6	1870.75	2.27%	[10000]	ug/L
V 292.402†	1157155.6	1286.63	0.11%	[10000]	ug/L
Zn 206.200†	256624.6	2238.47	0.87%	[10000]	ug/L
Sr 421.552 R†	1239742.1	72389.71	5.84%	[10000]	ug/L
Sn 189.927†	96194.2	1156.72	1.20%	[10000]	ug/L

Sequence No.: 6
Sample ID: ICAL,L5,S27758,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 6
Date Collected: 8/2/2015 8:01:51 PM
Data Type: Reprocessed on 8/2/2015 8:47:09 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L5,S27758,1

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: ICAL,L5,S27758,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3546421.7	29877.62	0.84%	93.5154	%
Y	43838.2	528.09	1.20%	100.012	%
Al 308.215 R†	43201.2	28.60	0.07%	[100000]	ug/L
Ca 315.887 R†	185282.5	211.85	0.11%	[100000]	ug/L
Fe 238.204 R†	186370.7	209.91	0.11%	[100000]	ug/L
K 766.490 R†	209364.6	537.81	0.26%	[100000]	ug/L
Mg 279.077 R†	31651.5	123.66	0.39%	[100000]	ug/L
Na 589.592 R†	327623.4	7101.83	2.17%	[100000]	ug/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin Thru 0	0.0	1790	0.00000	0.999999	
Al 308.215 R	4	Lin Thru 0	0.0	0.4322	0.00000	0.999991	
As 188.979	4	Lin Thru 0	0.0	7.824	0.00000	0.999999	
B 249.677	3	Lin Thru 0	0.0	108.0	0.00000	0.999999	
Ba 233.527	4	Lin Thru 0	0.0	240.7	0.00000	1.000000	
Be 313.107	3	Lin Thru 0	0.0	3267	0.00000	0.999999	
Ca 315.887 R	4	Lin Thru 0	0.0	1.854	0.00000	0.999975	
Cd 214.440	4	Lin Thru 0	0.0	75.18	0.00000	0.999999	
Co 228.616	4	Lin Thru 0	0.0	68.23	0.00000	0.999998	
Cr 267.716	4	Lin Thru 0	0.0	20.65	0.00000	0.999932	
Cu 324.752	4	Lin Thru 0	0.0	334.4	0.00000	0.999999	
Fe 238.204 R	4	Lin Thru 0	0.0	1.865	0.00000	0.999984	
K 766.490 R	4	Lin Thru 0	0.0	2.094	0.00000	0.999998	
Mg 279.077 R	4	Lin Thru 0	0.0	0.3167	0.00000	0.999991	
Mn 257.610	4	Lin Thru 0	0.0	1013	0.00000	0.999997	
Mo 202.031	4	Lin Thru 0	0.0	14.97	0.00000	1.000000	
Na 589.592 R	4	Lin Thru 0	0.0	3.280	0.00000	0.999918	
Ni 231.604	4	Lin Thru 0	0.0	25.76	0.00000	0.999999	
Pb 220.353	4	Lin Thru 0	0.0	20.80	0.00000	1.000000	
Sb 206.836	4	Lin Thru 0	0.0	11.56	0.00000	0.999981	
Se 196.026	4	Lin Thru 0	0.0	11.53	0.00000	1.000000	
Ti 334.940 R	4	Lin Thru 0	0.0	14.78	0.00000	1.000000	
Tl 190.801	4	Lin Thru 0	0.0	8.242	0.00000	0.999965	
V 292.402	4	Lin Thru 0	0.0	115.7	0.00000	0.999997	
Zn 206.200	4	Lin Thru 0	0.0	25.67	0.00000	0.999999	
Sr 421.552 R	4	Lin Thru 0	0.0	124.0	0.00000	0.999998	
Sn 189.927	4	Lin Thru 0	0.0	9.620	0.00000	0.999999	

Sequence No.: 7
Sample ID: ICV,S27757
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 8
Date Collected: 8/2/2015 8:08:28 PM
Data Type: Reprocessed on 8/2/2015 8:47:10 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV,S27757

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: ICV,S27757

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3709924.5	97.8268	%	0.64672				0.66%
Y	44601.3	101.753	%	1.0659				1.05%
Ag 328.068†	1765444.5	986.350	ug/L	26.4739	986.350	ug/L	26.4739	2.68%
QC value within limits for Ag 328.068 Recovery = 98.63%								
Al 308.215 R†	8633.4	19975.5	ug/L	48.85	19975.5	ug/L	48.85	0.24%
QC value within limits for Al 308.215 R Recovery = 99.88%								
As 188.979†	39337.6	5027.54	ug/L	88.523	5027.54	ug/L	88.523	1.76%
QC value within limits for As 188.979 Recovery = 100.55%								
B 249.677†	544073.2	5036.94	ug/L	72.886	5036.94	ug/L	72.886	1.45%
QC value within limits for B 249.677 Recovery = 100.74%								
Ba 233.527†	1204681.3	5003.94	ug/L	15.198	5003.94	ug/L	15.198	0.30%
QC value within limits for Ba 233.527 Recovery = 100.08%								
Be 313.107†	1646235.3	503.920	ug/L	0.6771	503.920	ug/L	0.6771	0.13%
QC value within limits for Be 313.107 Recovery = 100.78%								
Ca 315.887 R†	37934.6	20459.4	ug/L	118.99	20459.4	ug/L	118.99	0.58%
QC value within limits for Ca 315.887 R Recovery = 102.30%								
Cd 214.440†	385206.2	5123.88	ug/L	204.206	5123.88	ug/L	204.206	3.99%
QC value within limits for Cd 214.440 Recovery = 102.48%								
Co 228.616†	340401.8	4980.70	ug/L	82.116	4980.70	ug/L	82.116	1.65%
QC value within limits for Co 228.616 Recovery = 99.61%								
Cr 267.716†	105631.1	5115.39	ug/L	216.931	5115.39	ug/L	216.931	4.24%
QC value within limits for Cr 267.716 Recovery = 102.31%								
Cu 324.752†	1644011.5	4916.13	ug/L	21.431	4916.13	ug/L	21.431	0.44%
QC value within limits for Cu 324.752 Recovery = 98.32%								
Fe 238.204 R†	38376.0	20579.4	ug/L	19.40	20579.4	ug/L	19.40	0.09%
QC value within limits for Fe 238.204 R Recovery = 102.90%								
K 766.490 R†	40587.4	19385.1	ug/L	38.54	19385.1	ug/L	38.54	0.20%
QC value within limits for K 766.490 R Recovery = 96.93%								
Mg 279.077 R†	6437.1	20328.5	ug/L	61.27	20328.5	ug/L	61.27	0.30%
QC value within limits for Mg 279.077 R Recovery = 101.64%								
Mn 257.610†	5038110.7	4973.01	ug/L	17.611	4973.01	ug/L	17.611	0.35%
QC value within limits for Mn 257.610 Recovery = 99.46%								
Mo 202.031†	75591.4	5049.75	ug/L	154.338	5049.75	ug/L	154.338	3.06%
QC value within limits for Mo 202.031 Recovery = 100.99%								
Na 589.592 R†	68781.4	20967.0	ug/L	482.22	20967.0	ug/L	482.22	2.30%
QC value within limits for Na 589.592 R Recovery = 104.83%								
Ni 231.604†	128296.3	4981.18	ug/L	173.086	4981.18	ug/L	173.086	3.47%
QC value within limits for Ni 231.604 Recovery = 99.62%								
Pb 220.353†	102508.3	4927.79	ug/L	74.183	4927.79	ug/L	74.183	1.51%
QC value within limits for Pb 220.353 Recovery = 98.56%								
Sb 206.836†	53109.0	4594.23	ug/L	124.519	4594.23	ug/L	124.519	2.71%
QC value less than the lower limit for Sb 206.836 Recovery = 91.88%								
Se 196.026†	57917.0	5022.29	ug/L	51.093	5022.29	ug/L	51.093	1.02%
QC value within limits for Se 196.026 Recovery = 100.45%								
Ti 334.940 R†	69947.0	4730.99	ug/L	5.423	4730.99	ug/L	5.423	0.11%
QC value less than the lower limit for Ti 334.940 R Recovery = 94.62%								
Tl 190.801†	42409.4	5145.71	ug/L	61.455	5145.71	ug/L	61.455	1.19%
QC value within limits for Tl 190.801 Recovery = 102.91%								
V 292.402†	576889.4	4986.59	ug/L	99.414	4986.59	ug/L	99.414	1.99%
QC value within limits for V 292.402 Recovery = 99.73%								
Zn 206.200†	132148.9	5148.67	ug/L	96.380	5148.67	ug/L	96.380	1.87%
QC value within limits for Zn 206.200 Recovery = 102.97%								
Sr 421.552 R†	59695.8	480.029	ug/L	1.2625	480.029	ug/L	1.2625	0.26%
QC value within limits for Sr 421.552 R Recovery = 96.01%								
Sn 189.927†	47451.3	4932.32	ug/L	56.510	4932.32	ug/L	56.510	1.15%
QC value within limits for Sn 189.927 Recovery = 98.65%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335008.1 File : met08_sn_6010 Time : 02-AUG-2015 20:13
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.893	ug/L	18	30	
Manganese	A	5.000	6.166	ug/L	**23**	30	!cri+
Iron	R	100.0	119.9	ug/L	20	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3813461	0.56

!=warning +=high bias

Sequence No.: 8
Sample ID: CRI,S27759
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 7
Date Collected: 8/2/2015 8:13:27 PM
Data Type: Reprocessed on 8/2/2015 8:47:11 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CRI,S27759

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: CRI,S27759

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3813461.3	100.557	%	0.8030				0.80%
Y	44684.5	101.943	%	0.4240				0.42%
Ag 328.068†	8494.5	4.74585	ug/L	0.183904	4.74585	ug/L	0.183904	3.88%
QC value within limits for Ag 328.068 Recovery = 94.92%								
Al 308.215 R†	56.2	130.017	ug/L	7.5282	130.017	ug/L	7.5282	5.79%
QC value greater than the upper limit for Al 308.215 R Recovery = 130.02%								
As 188.979†	46.1	5.89349	ug/L	1.543200	5.89349	ug/L	1.543200	26.18%
QC value within limits for As 188.979 Recovery = 117.87%								
B 249.677†	14392.6	133.244	ug/L	4.8493	133.244	ug/L	4.8493	3.64%
QC value greater than the upper limit for B 249.677 Recovery = 133.24%								
Ba 233.527†	1399.7	5.81397	ug/L	0.096553	5.81397	ug/L	0.096553	1.66%
QC value greater than the upper limit for Ba 233.527 Recovery = 116.28%								
Be 313.107†	8025.9	2.45677	ug/L	0.106022	2.45677	ug/L	0.106022	4.32%
QC value greater than the upper limit for Be 313.107 Recovery = 122.84%								
Ca 315.887 R†	416.0	224.382	ug/L	4.2428	224.382	ug/L	4.2428	1.89%
QC value within limits for Ca 315.887 R Recovery = 112.19%								
Cd 214.440†	419.8	5.58467	ug/L	0.188446	5.58467	ug/L	0.188446	3.37%
QC value within limits for Cd 214.440 Recovery = 111.69%								
Co 228.616†	372.1	5.43354	ug/L	0.748927	5.43354	ug/L	0.748927	13.78%
QC value within limits for Co 228.616 Recovery = 108.67%								
Cr 267.716†	131.2	6.35510	ug/L	0.171648	6.35510	ug/L	0.171648	2.70%
QC value greater than the upper limit for Cr 267.716 Recovery = 127.10%								
Cu 324.752†	3027.4	9.05289	ug/L	0.739681	9.05289	ug/L	0.739681	8.17%
QC value greater than the upper limit for Cu 324.752 Recovery = 181.06%								
Fe 238.204 R†	223.6	119.898	ug/L	0.7361	119.898	ug/L	0.7361	0.61%
QC value within limits for Fe 238.204 R Recovery = 119.90%								
K 766.490 R†	1398.1	667.775	ug/L	72.7810	667.775	ug/L	72.7810	10.90%
QC value greater than the upper limit for K 766.490 R Recovery = 133.56%								
Mg 279.077 R†	71.9	226.945	ug/L	15.1209	226.945	ug/L	15.1209	6.66%
QC value within limits for Mg 279.077 R Recovery = 113.47%								
Mn 257.610†	6246.5	6.16580	ug/L	0.190308	6.16580	ug/L	0.190308	3.09%
QC value greater than the upper limit for Mn 257.610 Recovery = 123.32%								
Mo 202.031†	89.9	6.00781	ug/L	0.094895	6.00781	ug/L	0.094895	1.58%
QC value greater than the upper limit for Mo 202.031 Recovery = 120.16%								
Na 589.592 R†	1898.4	578.710	ug/L	26.6294	578.710	ug/L	26.6294	4.60%
QC value within limits for Na 589.592 R Recovery = 115.74%								
Ni 231.604†	142.9	5.54767	ug/L	0.365094	5.54767	ug/L	0.365094	6.58%
QC value within limits for Ni 231.604 Recovery = 110.95%								
Pb 220.353†	97.6	4.68978	ug/L	0.977798	4.68978	ug/L	0.977798	20.85%
QC value within limits for Pb 220.353 Recovery = 93.80%								
Sb 206.836†	180.7	15.6282	ug/L	1.06719	15.6282	ug/L	1.06719	6.83%
QC value greater than the upper limit for Sb 206.836 Recovery = 156.28%								
Se 196.026†	70.4	6.10852	ug/L	1.874220	6.10852	ug/L	1.874220	30.68%
QC value less than the lower limit for Se 196.026 Recovery = 61.09%								
Ti 334.940 R†	164.1	11.1018	ug/L	0.28658	11.1018	ug/L	0.28658	2.58%
QC value within limits for Ti 334.940 R Recovery = 111.02%								
Tl 190.801†	99.5	12.0708	ug/L	2.67744	12.0708	ug/L	2.67744	22.18%
QC value greater than the upper limit for Tl 190.801 Recovery = 120.71%								
V 292.402†	656.2	5.67185	ug/L	0.832569	5.67185	ug/L	0.832569	14.68%
QC value within limits for V 292.402 Recovery = 113.44%								
Zn 206.200†	566.9	22.0854	ug/L	0.17667	22.0854	ug/L	0.17667	0.80%
QC value within limits for Zn 206.200 Recovery = 110.43%								
Sr 421.552 R†	719.2	5.79714	ug/L	0.352842	5.79714	ug/L	0.352842	6.09%
QC value within limits for Sr 421.552 R Recovery = 115.94%								
Sn 189.927†	442.9	46.0416	ug/L	0.81472	46.0416	ug/L	0.81472	1.77%
QC value within limits for Sn 189.927 Recovery = 115.10%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335009.1 File : met08_sn_6010 Time : 02-AUG-2015 20:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3818530	0.69

Sequence No.: 9
Sample ID: ICB
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 220
Date Collected: 8/2/2015 8:17:38 PM
Data Type: Reprocessed on 8/2/2015 8:47:11 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3818530.4	100.691	%	1.0568				1.05%
Y	44988.4	102.636	%	0.7382				0.72%
Ag 328.068†	-405.2	-0.226367	ug/L	0.4664301	-0.226367	ug/L	0.4664301	206.05%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	4.5	10.3597	ug/L	11.19204	10.3597	ug/L	11.19204	108.03%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	7.5	0.952196	ug/L	0.8733217	0.952196	ug/L	0.8733217	91.72%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	1540.6	14.2626	ug/L	2.90744	14.2626	ug/L	2.90744	20.39%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	102.8	0.426806	ug/L	0.1273228	0.426806	ug/L	0.1273228	29.83%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	717.7	0.219688	ug/L	0.0732987	0.219688	ug/L	0.0732987	33.36%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	6.3	3.38912	ug/L	2.892755	3.38912	ug/L	2.892755	85.35%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	28.9	0.384016	ug/L	0.1920426	0.384016	ug/L	0.1920426	50.01%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	20.1	0.293551	ug/L	1.3135934	0.293551	ug/L	1.3135934	447.48%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	11.0	0.533032	ug/L	0.5516068	0.533032	ug/L	0.5516068	103.48%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	664.2	1.98604	ug/L	0.081506	1.98604	ug/L	0.081506	4.10%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	12.8	6.84774	ug/L	3.344646	6.84774	ug/L	3.344646	48.84%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	-158.6	-75.7479	ug/L	157.99222	-75.7479	ug/L	157.99222	208.58%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	-1.1	-3.48006	ug/L	7.836212	-3.48006	ug/L	7.836212	225.17%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	677.8	0.669078	ug/L	0.1409663	0.669078	ug/L	0.1409663	21.07%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	7.3	0.485859	ug/L	0.1457245	0.485859	ug/L	0.1457245	29.99%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	28.6	8.73310	ug/L	10.406836	8.73310	ug/L	10.406836	119.17%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	11.5	0.445294	ug/L	0.1937230	0.445294	ug/L	0.1937230	43.50%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-22.1	-1.06056	ug/L	0.735531	-1.06056	ug/L	0.735531	69.35%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	24.9	2.15446	ug/L	1.135589	2.15446	ug/L	1.135589	52.71%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-19.3	-1.67192	ug/L	2.462296	-1.67192	ug/L	2.462296	147.27%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	10.9	0.736269	ug/L	0.6456220	0.736269	ug/L	0.6456220	87.69%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	20.1	2.43820	ug/L	0.780821	2.43820	ug/L	0.780821	32.02%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	42.9	0.371015	ug/L	0.1314548	0.371015	ug/L	0.1314548	35.43%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	4.2	0.163884	ug/L	0.1922320	0.163884	ug/L	0.1922320	117.30%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	118.2	0.953095	ug/L	0.1645073	0.953095	ug/L	0.1645073	17.26%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	38.1	3.95886	ug/L	0.627687	3.95886	ug/L	0.627687	15.86%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335010.1 File : met08_sn_6010 Time : 02-AUG-2015 20:22
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[4.618]	5.000	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20220	ug/L	101
Copper	A	20000	21170	ug/L	106
Manganese	A	20000	18960	ug/L	95
Nickel	A	20000	17860	ug/L	89
Vanadium	A	20000	20060	ug/L	100
Aluminum	R	500000	521200	ug/L	104
Calcium	R	500000	503600	ug/L	101
Iron	R	200000	197200	ug/L	99
Magnesium	R	500000	522800	ug/L	105
Titanium	R	20000	19550	ug/L	98

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3268174	-13.82

!=warning +=high bias a=ICSA

Sequence No.: 10
Sample ID: ICSA,S27611
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 9
Date Collected: 8/2/2015 8:22:45 PM
Data Type: Reprocessed on 8/2/2015 8:47:12 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSA,S27611

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: ICSA,S27611

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3268173.9	86.1783	%	0.26476				0.31%
Y	41219.1	94.0369	%	0.34046				0.36%
Ag 328.068†	714.8	0.399384	ug/L	0.4458508	0.399384	ug/L	0.4458508	111.63%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	225279.2	521239	ug/L	9216.09	521239	ug/L	9216.09	1.77%
QC value within limits for Al 308.215 R Recovery = 104.25%								
As 188.979†	36.1	4.61820	ug/L	2.150556	4.61820	ug/L	2.150556	46.57%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	-3187.1	-29.5053	ug/L	5.76037	-29.5053	ug/L	5.76037	19.52%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-610.7	-2.53664	ug/L	0.935688	-2.53664	ug/L	0.935688	36.89%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-1049.9	-0.321378	ug/L	0.3192075	-0.321378	ug/L	0.3192075	99.32%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	933750.2	503603	ug/L	9532.26	503603	ug/L	9532.26	1.89%
QC value within limits for Ca 315.887 R Recovery = 100.72%								
Cd 214.440†	-283.7	-3.77302	ug/L	0.027455	-3.77302	ug/L	0.027455	0.73%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	2422.0	0.315478	ug/L	2.0725693	0.315478	ug/L	2.0725693	656.96%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	417508.1	20218.7	ug/L	1275.30	20218.7	ug/L	1275.30	6.31%
QC value within limits for Cr 267.716 Recovery = 101.09%								
Cu 324.752†	7079645.6	21170.4	ug/L	270.34	21170.4	ug/L	270.34	1.28%
QC value within limits for Cu 324.752 Recovery = 105.85%								
Fe 238.204 R†	367774.2	197221	ug/L	3624.74	197221	ug/L	3624.74	1.84%
QC value within limits for Fe 238.204 R Recovery = 98.61%								
K 766.490 R†	96.7	46.1642	ug/L	19.99899	46.1642	ug/L	19.99899	43.32%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	165536.4	522770	ug/L	11530.64	522770	ug/L	11530.64	2.21%
QC value within limits for Mg 279.077 R Recovery = 104.55%								
Mn 257.610†	19208831.1	18960.6	ug/L	265.22	18960.6	ug/L	265.22	1.40%
QC value within limits for Mn 257.610 Recovery = 94.80%								
Mo 202.031†	16.0	1.07001	ug/L	0.315715	1.07001	ug/L	0.315715	29.51%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	248.2	75.6450	ug/L	6.01016	75.6450	ug/L	6.01016	7.95%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	459962.3	17858.3	ug/L	228.30	17858.3	ug/L	228.30	1.28%
QC value less than the lower limit for Ni 231.604 Recovery = 89.29%								
Pb 220.353†	65.9	3.16583	ug/L	1.021370	3.16583	ug/L	1.021370	32.26%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-93.4	-8.07871	ug/L	3.419021	-8.07871	ug/L	3.419021	42.32%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	10.1	0.875277	ug/L	2.0479659	0.875277	ug/L	2.0479659	233.98%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	288985.7	19546.0	ug/L	357.31	19546.0	ug/L	357.31	1.83%
QC value within limits for Ti 334.940 R Recovery = 97.73%								
Tl 190.801†	-5.7	-0.691106	ug/L	46.8832452	-0.691106	ug/L	46.8832452	>999.9%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	2321264.9	20064.9	ug/L	324.07	20064.9	ug/L	324.07	1.62%
QC value within limits for V 292.402 Recovery = 100.32%								
Zn 206.200†	-257.5	-10.0310	ug/L	2.29544	-10.0310	ug/L	2.29544	22.88%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	520.2	-1.14613	ug/L	0.809063	-1.14613	ug/L	0.809063	70.59%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	-276.2	-28.7148	ug/L	2.49939	-28.7148	ug/L	2.49939	8.70%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335011.1 File : met08_sn_6010 Time : 02-AUG-2015 20:48
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	529.3	ug/L	6	20	
Manganese	A	500.0	477.0	ug/L	-5	20	
Iron	R	200000	196500	ug/L	-2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3232405	-14.76

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Initial Sample Wt:
Dilution:
Wash Time:
User canceled analysis.

Autosampler Location: 1
Date Collected: 8/2/2015 8:48:25 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Sequence No.: 11
Sample ID: ICSAB,S27612
Analyst:
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 10
Date Collected: 8/2/2015 8:48:37 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSAB,S27612

Analyte	Back Pressure	Flow
All	134.0 kPa	0.60 L/min

Mean Data: ICSAB,S27612

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3232404.7	85.2351	%	0.38481				0.45%
Y	41263.9	94.1390	%	0.44695				0.47%
Ag 328.068†	1978693.9	1105.49	ug/L	18.254	1105.49	ug/L	18.254	1.65%
QC value within limits for Ag 328.068 Recovery = 110.55%								
Al 308.215 R†	225007.6	520610	ug/L	614.07	520610	ug/L	614.07	0.12%
QC value within limits for Al 308.215 R Recovery = 104.12%								
As 188.979†	4141.8	529.342	ug/L	8.7135	529.342	ug/L	8.7135	1.65%
QC value within limits for As 188.979 Recovery = 105.87%								
B 249.677†	-3212.3	-29.7394	ug/L	6.26505	-29.7394	ug/L	6.26505	21.07%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	128302.4	532.936	ug/L	3.2037	532.936	ug/L	3.2037	0.60%
QC value within limits for Ba 233.527 Recovery = 106.59%								
Be 313.107†	1737455.2	531.843	ug/L	1.7685	531.843	ug/L	1.7685	0.33%
QC value within limits for Be 313.107 Recovery = 106.37%								
Ca 315.887 R†	927879.1	500437	ug/L	6533.47	500437	ug/L	6533.47	1.31%
QC value within limits for Ca 315.887 R Recovery = 100.09%								
Cd 214.440†	74302.4	988.345	ug/L	22.8725	988.345	ug/L	22.8725	2.31%
QC value within limits for Cd 214.440 Recovery = 98.83%								
Co 228.616†	34613.9	472.540	ug/L	3.3739	472.540	ug/L	3.3739	0.71%
QC value within limits for Co 228.616 Recovery = 94.51%								
Cr 267.716†	10968.2	531.155	ug/L	23.5557	531.155	ug/L	23.5557	4.43%
QC value within limits for Cr 267.716 Recovery = 106.23%								
Cu 324.752†	183032.0	547.325	ug/L	2.9080	547.325	ug/L	2.9080	0.53%
QC value within limits for Cu 324.752 Recovery = 109.46%								
Fe 238.204 R†	366342.1	196453	ug/L	86.97	196453	ug/L	86.97	0.04%
QC value within limits for Fe 238.204 R Recovery = 98.23%								
K 766.490 R†	-292.7	-139.798	ug/L	51.4215	-139.798	ug/L	51.4215	36.78%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	164516.7	519549	ug/L	1045.39	519549	ug/L	1045.39	0.20%
QC value within limits for Mg 279.077 R Recovery = 103.91%								
Mn 257.610†	483264.0	477.020	ug/L	2.4014	477.020	ug/L	2.4014	0.50%
QC value within limits for Mn 257.610 Recovery = 95.40%								
Mo 202.031†	7801.6	521.173	ug/L	7.6002	521.173	ug/L	7.6002	1.46%
QC value within limits for Mo 202.031 Recovery = 104.23%								
Na 589.592 R†	111.0	33.8511	ug/L	11.01495	33.8511	ug/L	11.01495	32.54%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	23991.9	931.499	ug/L	18.0984	931.499	ug/L	18.0984	1.94%
QC value within limits for Ni 231.604 Recovery = 93.15%								
Pb 220.353†	20700.9	995.138	ug/L	10.1667	995.138	ug/L	10.1667	1.02%
QC value within limits for Pb 220.353 Recovery = 99.51%								
Sb 206.836†	6351.5	549.439	ug/L	3.6915	549.439	ug/L	3.6915	0.67%
QC value within limits for Sb 206.836 Recovery = 109.89%								
Se 196.026†	6086.6	527.800	ug/L	7.6778	527.800	ug/L	7.6778	1.45%
QC value within limits for Se 196.026 Recovery = 105.56%								
Ti 334.940 R†	285757.0	19327.7	ug/L	10.74	19327.7	ug/L	10.74	0.06%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	3661.0	444.205	ug/L	38.6582	444.205	ug/L	38.6582	8.70%
QC value within limits for Tl 190.801 Recovery = 88.84%								
V 292.402†	62993.0	544.507	ug/L	9.8005	544.507	ug/L	9.8005	1.80%
QC value within limits for V 292.402 Recovery = 108.90%								

Zn 206.200†	25708.4	1001.63	ug/L	7.972	1001.63	ug/L	7.972	0.80%
QC value within limits for Zn 206.200 Recovery = 100.16%								
Sr 421.552 R†	63730.1	508.685	ug/L	0.3256	508.685	ug/L	0.3256	0.06%
QC value within limits for Sr 421.552 R Recovery = 101.74%								
Sn 189.927†	-280.0	-29.1069	ug/L	1.17399	-29.1069	ug/L	1.17399	4.03%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335047.1 File : met08_sn_6010 Time : 03-AUG-2015 00:01
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	8.0330	5000	5133	ug/L	3	10	
Manganese	A	1052.7	1051.8	5000	5191	ug/L	4	10	
Iron	R	2.0011	2.0311	20000	21780	ug/L	9	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726955	-1.72

Sequence No.: 47
Sample ID: CCV,S27756
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 217
Date Collected: 8/3/2015 12:01:38 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3726955.4	98.2758	%	0.99926				1.02%
Y	44087.3	100.580	%	0.6479				0.64%
Ag 328.068†	1830584.5	1022.74	ug/L	21.616	1022.74	ug/L	21.616	2.11%
QC value within limits for Ag 328.068 Recovery = 102.27%								
Al 308.215 R†	9123.0	21108.2	ug/L	78.90	21108.2	ug/L	78.90	0.37%
QC value within limits for Al 308.215 R Recovery = 105.54%								
As 188.979†	40165.0	5133.30	ug/L	46.316	5133.30	ug/L	46.316	0.90%
QC value within limits for As 188.979 Recovery = 102.67%								
B 249.677†	554260.8	5131.25	ug/L	83.754	5131.25	ug/L	83.754	1.63%
QC value within limits for B 249.677 Recovery = 102.63%								
Ba 233.527†	1255868.9	5216.56	ug/L	13.843	5216.56	ug/L	13.843	0.27%
QC value within limits for Ba 233.527 Recovery = 104.33%								
Be 313.107†	1719295.6	526.284	ug/L	1.0129	526.284	ug/L	1.0129	0.19%
QC value within limits for Be 313.107 Recovery = 105.26%								
Ca 315.887 R†	40776.8	21992.3	ug/L	92.66	21992.3	ug/L	92.66	0.42%
QC value within limits for Ca 315.887 R Recovery = 109.96%								
Cd 214.440†	395808.5	5264.91	ug/L	134.346	5264.91	ug/L	134.346	2.55%
QC value within limits for Cd 214.440 Recovery = 105.30%								
Co 228.616†	350922.2	5134.33	ug/L	72.680	5134.33	ug/L	72.680	1.42%
QC value within limits for Co 228.616 Recovery = 102.69%								
Cr 267.716†	107875.7	5224.10	ug/L	282.766	5224.10	ug/L	282.766	5.41%
QC value within limits for Cr 267.716 Recovery = 104.48%								
Cu 324.752†	1716419.4	5132.65	ug/L	15.556	5132.65	ug/L	15.556	0.30%
QC value within limits for Cu 324.752 Recovery = 102.65%								
Fe 238.204 R†	40622.3	21784.0	ug/L	56.24	21784.0	ug/L	56.24	0.26%
QC value within limits for Fe 238.204 R Recovery = 108.92%								
K 766.490 R†	43223.5	20644.1	ug/L	131.42	20644.1	ug/L	131.42	0.64%
QC value within limits for K 766.490 R Recovery = 103.22%								
Mg 279.077 R†	6786.3	21431.5	ug/L	178.29	21431.5	ug/L	178.29	0.83%
QC value within limits for Mg 279.077 R Recovery = 107.16%								
Mn 257.610†	5258831.9	5190.88	ug/L	13.636	5190.88	ug/L	13.636	0.26%
QC value within limits for Mn 257.610 Recovery = 103.82%								
Mo 202.031†	76411.5	5104.53	ug/L	93.569	5104.53	ug/L	93.569	1.83%
QC value within limits for Mo 202.031 Recovery = 102.09%								
Na 589.592 R†	77383.2	23589.1	ug/L	47.80	23589.1	ug/L	47.80	0.20%
QC value greater than the upper limit for Na 589.592 R Recovery = 117.95%								
Ni 231.604†	133117.4	5168.37	ug/L	102.695	5168.37	ug/L	102.695	1.99%
QC value within limits for Ni 231.604 Recovery = 103.37%								
Pb 220.353†	104859.2	5040.80	ug/L	48.359	5040.80	ug/L	48.359	0.96%
QC value within limits for Pb 220.353 Recovery = 100.82%								
Sb 206.836†	57255.7	4952.94	ug/L	72.937	4952.94	ug/L	72.937	1.47%
QC value within limits for Sb 206.836 Recovery = 99.06%								
Se 196.026†	58646.8	5085.57	ug/L	35.991	5085.57	ug/L	35.991	0.71%
QC value within limits for Se 196.026 Recovery = 101.71%								
Ti 334.940 R†	74585.1	5044.69	ug/L	13.575	5044.69	ug/L	13.575	0.27%
QC value within limits for Ti 334.940 R Recovery = 100.89%								
Tl 190.801†	41882.1	5081.74	ug/L	98.058	5081.74	ug/L	98.058	1.93%
QC value within limits for Tl 190.801 Recovery = 101.63%								
V 292.402†	607465.1	5250.89	ug/L	85.106	5250.89	ug/L	85.106	1.62%
QC value within limits for V 292.402 Recovery = 105.02%								
Zn 206.200†	133451.2	5199.41	ug/L	81.644	5199.41	ug/L	81.644	1.57%
QC value within limits for Zn 206.200 Recovery = 103.99%								
Sr 421.552 R†	63322.4	509.184	ug/L	1.2067	509.184	ug/L	1.2067	0.24%
QC value within limits for Sr 421.552 R Recovery = 101.84%								
Sn 189.927†	48128.6	5002.72	ug/L	28.394	5002.72	ug/L	28.394	0.57%
QC value within limits for Sn 189.927 Recovery = 100.05%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335048.1 File : met08_sn_6010 Time : 03-AUG-2015 00:09
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3801776	0.25

Sequence No.: 48 | **Autosampler Location: 220**
Sample ID: CCB | **Date Collected: 8/3/2015 12:09:23 AM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**
Wash Time: 275 | **Auto Dilution Factor: 1**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	135.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3801775.8	100.249	%	0.4512				0.45%
Y	44330.3	101.135	%	2.1832				2.16%
Ag 328.068†	-887.8	-0.496022	ug/L	0.3201517	-0.496022	ug/L	0.3201517	64.54%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	5.7	13.2853	ug/L	14.46914	13.2853	ug/L	14.46914	108.91%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	-1.3	-0.171369	ug/L	1.1149873	-0.171369	ug/L	1.1149873	650.63%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	3216.4	29.7768	ug/L	1.64232	29.7768	ug/L	1.64232	5.52%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	26.1	0.108433	ug/L	0.1781975	0.108433	ug/L	0.1781975	164.34%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-306.1	-0.0937059	ug/L	0.03674001	-0.0937059	ug/L	0.03674001	39.21%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	3.6	1.93928	ug/L	2.054700	1.93928	ug/L	2.054700	105.95%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	6.6	0.0884501	ug/L	0.17425282	0.0884501	ug/L	0.17425282	197.01%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-40.6	-0.595719	ug/L	0.6444982	-0.595719	ug/L	0.6444982	108.19%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-4.1	-0.196713	ug/L	0.3935442	-0.196713	ug/L	0.3935442	200.06%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	1213.9	3.62995	ug/L	0.498290	3.62995	ug/L	0.498290	13.73%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	14.2	7.61432	ug/L	1.633433	7.61432	ug/L	1.633433	21.45%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	97.2	46.4386	ug/L	97.80550	46.4386	ug/L	97.80550	210.61%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	1.7	5.25065	ug/L	14.199109	5.25065	ug/L	14.199109	270.43%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	214.2	0.211469	ug/L	0.1849430	0.211469	ug/L	0.1849430	87.46%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-2.2	-0.148511	ug/L	0.0447070	-0.148511	ug/L	0.0447070	30.10%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	488.1	148.782	ug/L	19.2677	148.782	ug/L	19.2677	12.95%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	-0.2	-0.0073179	ug/L	0.34942377	-0.0073179	ug/L	0.34942377	>999.9%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-24.6	-1.18091	ug/L	0.659977	-1.18091	ug/L	0.659977	55.89%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	20.0	1.72704	ug/L	0.900946	1.72704	ug/L	0.900946	52.17%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-16.8	-1.45794	ug/L	2.528196	-1.45794	ug/L	2.528196	173.41%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	4.2	0.281814	ug/L	0.5734789	0.281814	ug/L	0.5734789	203.50%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	11.5	1.39990	ug/L	1.261195	1.39990	ug/L	1.261195	90.09%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	-10.0	-0.0867990	ug/L	0.12027758	-0.0867990	ug/L	0.12027758	138.57%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-1.7	-0.0681498	ug/L	0.22769374	-0.0681498	ug/L	0.22769374	334.11%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-37.5	-0.302519	ug/L	0.2682292	-0.302519	ug/L	0.2682292	88.67%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	12.8	1.32540	ug/L	0.279278	1.32540	ug/L	0.279278	21.07%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335059.1 File : met08_sn_6010 Time : 03-AUG-2015 01:06
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.8221	5000	4999	ug/L	0	10	
Manganese	A	1052.7	1033.4	5000	5100	ug/L	2	10	
Iron	R	2.0011	1.8795	20000	20160	ug/L	1	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3770247	-0.58

Sequence No.: 59
Sample ID: CCV,S27756
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 217
Date Collected: 8/3/2015 1:06:10 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	137.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3770247.4	99.4174	%	0.32541				0.33%
Y	44489.2	101.497	%	2.9748				2.93%
Ag 328.068†	1821077.7	1017.43	ug/L	18.801	1017.43	ug/L	18.801	1.85%
QC value within limits for Ag 328.068 Recovery = 101.74%								
Al 308.215 R†	8850.9	20478.7	ug/L	603.43	20478.7	ug/L	603.43	2.95%
QC value within limits for Al 308.215 R Recovery = 102.39%								
As 188.979†	39110.5	4998.52	ug/L	45.521	4998.52	ug/L	45.521	0.91%
QC value within limits for As 188.979 Recovery = 99.97%								
B 249.677†	545847.8	5053.37	ug/L	47.623	5053.37	ug/L	47.623	0.94%
QC value within limits for B 249.677 Recovery = 101.07%								
Ba 233.527†	1227247.1	5097.67	ug/L	43.597	5097.67	ug/L	43.597	0.86%
QC value within limits for Ba 233.527 Recovery = 101.95%								
Be 313.107†	1701681.3	520.892	ug/L	4.5591	520.892	ug/L	4.5591	0.88%
QC value within limits for Be 313.107 Recovery = 104.18%								
Ca 315.887 R†	39716.6	21420.5	ug/L	752.53	21420.5	ug/L	752.53	3.51%
QC value within limits for Ca 315.887 R Recovery = 107.10%								
Cd 214.440†	385201.2	5123.81	ug/L	147.827	5123.81	ug/L	147.827	2.89%
QC value within limits for Cd 214.440 Recovery = 102.48%								
Co 228.616†	341993.7	5003.58	ug/L	44.392	5003.58	ug/L	44.392	0.89%
QC value within limits for Co 228.616 Recovery = 100.07%								
Cr 267.716†	107286.2	5195.54	ug/L	276.683	5195.54	ug/L	276.683	5.33%
QC value within limits for Cr 267.716 Recovery = 103.91%								
Cu 324.752†	1695856.4	5071.16	ug/L	32.721	5071.16	ug/L	32.721	0.65%
QC value within limits for Cu 324.752 Recovery = 101.42%								
Fe 238.204 R†	37589.6	20157.7	ug/L	704.75	20157.7	ug/L	704.75	3.50%
QC value within limits for Fe 238.204 R Recovery = 100.79%								
K 766.490 R†	43609.7	20828.6	ug/L	784.93	20828.6	ug/L	784.93	3.77%
QC value within limits for K 766.490 R Recovery = 104.14%								
Mg 279.077 R†	6557.3	20708.0	ug/L	645.68	20708.0	ug/L	645.68	3.12%
QC value within limits for Mg 279.077 R Recovery = 103.54%								
Mn 257.610†	5167187.8	5100.42	ug/L	36.851	5100.42	ug/L	36.851	0.72%
QC value within limits for Mn 257.610 Recovery = 102.01%								
Mo 202.031†	74422.0	4971.63	ug/L	104.525	4971.63	ug/L	104.525	2.10%
QC value within limits for Mo 202.031 Recovery = 99.43%								
Na 589.592 R†	80288.0	24474.6	ug/L	1140.43	24474.6	ug/L	1140.43	4.66%
QC value greater than the upper limit for Na 589.592 R Recovery = 122.37%								
Ni 231.604†	131171.0	5092.80	ug/L	110.056	5092.80	ug/L	110.056	2.16%
QC value within limits for Ni 231.604 Recovery = 101.86%								
Pb 220.353†	102004.5	4903.57	ug/L	38.018	4903.57	ug/L	38.018	0.78%
QC value within limits for Pb 220.353 Recovery = 98.07%								
Sb 206.836†	55849.2	4831.27	ug/L	70.450	4831.27	ug/L	70.450	1.46%
QC value within limits for Sb 206.836 Recovery = 96.63%								
Se 196.026†	56960.8	4939.37	ug/L	30.031	4939.37	ug/L	30.031	0.61%
QC value within limits for Se 196.026 Recovery = 98.79%								
Ti 334.940 R†	73642.9	4980.96	ug/L	180.642	4980.96	ug/L	180.642	3.63%
QC value within limits for Ti 334.940 R Recovery = 99.62%								
Tl 190.801†	40364.3	4897.57	ug/L	115.990	4897.57	ug/L	115.990	2.37%
QC value within limits for Tl 190.801 Recovery = 97.95%								
V 292.402†	605308.0	5232.24	ug/L	39.867	5232.24	ug/L	39.867	0.76%
QC value within limits for V 292.402 Recovery = 104.64%								
Zn 206.200†	128815.5	5018.80	ug/L	58.725	5018.80	ug/L	58.725	1.17%
QC value within limits for Zn 206.200 Recovery = 100.38%								
Sr 421.552 R†	62794.7	504.946	ug/L	18.1495	504.946	ug/L	18.1495	3.59%
QC value within limits for Sr 421.552 R Recovery = 100.99%								
Sn 189.927†	46852.9	4870.12	ug/L	36.988	4870.12	ug/L	36.988	0.76%
QC value within limits for Sn 189.927 Recovery = 97.40%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335061.1 File : met08_sn_6010 Time : 03-AUG-2015 01:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3848822	1.49

Sequence No.: 61
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 220
Date Collected: 8/3/2015 1:17:50 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	136.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3848821.8	101.489	%	1.3205				1.30%
Y	43157.4	98.4589	%	1.64573				1.67%
Ag 328.068†	-688.6	-0.384707	ug/L	0.1394352	-0.384707	ug/L	0.1394352	36.24%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	5.0	11.4607	ug/L	6.17823	11.4607	ug/L	6.17823	53.91%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	-4.1	-0.520552	ug/L	1.8273063	-0.520552	ug/L	1.8273063	351.03%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	2673.2	24.7485	ug/L	1.09251	24.7485	ug/L	1.09251	4.41%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	84.9	0.352711	ug/L	0.1646517	0.352711	ug/L	0.1646517	46.68%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-204.6	-0.0626372	ug/L	0.02544026	-0.0626372	ug/L	0.02544026	40.62%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	32.3	17.4218	ug/L	5.45262	17.4218	ug/L	5.45262	31.30%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	20.8	0.276525	ug/L	0.1224074	0.276525	ug/L	0.1224074	44.27%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	21.7	0.317328	ug/L	0.3163031	0.317328	ug/L	0.3163031	99.68%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	13.3	0.641877	ug/L	0.2650714	0.641877	ug/L	0.2650714	41.30%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	425.5	1.27226	ug/L	0.217058	1.27226	ug/L	0.217058	17.06%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	6.5	3.49386	ug/L	0.505688	3.49386	ug/L	0.505688	14.47%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	182.6	87.2127	ug/L	94.22182	87.2127	ug/L	94.22182	108.04%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	13.3	42.1111	ug/L	12.38404	42.1111	ug/L	12.38404	29.41%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	629.6	0.621456	ug/L	0.2457008	0.621456	ug/L	0.2457008	39.54%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.9	0.125302	ug/L	0.0824838	0.125302	ug/L	0.0824838	65.83%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	2381.5	725.956	ug/L	137.8744	725.956	ug/L	137.8744	18.99%
QC value greater than the upper limit for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	12.4	0.479950	ug/L	0.2824089	0.479950	ug/L	0.2824089	58.84%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-32.7	-1.56997	ug/L	0.982621	-1.56997	ug/L	0.982621	62.59%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	29.6	2.55915	ug/L	0.723199	2.55915	ug/L	0.723199	28.26%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-19.3	-1.67360	ug/L	1.253718	-1.67360	ug/L	1.253718	74.91%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	6.7	0.453163	ug/L	0.1465920	0.453163	ug/L	0.1465920	32.35%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	7.1	0.859913	ug/L	0.7985803	0.859913	ug/L	0.7985803	92.87%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	41.9	0.362116	ug/L	0.1702374	0.362116	ug/L	0.1702374	47.01%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	0.8	0.0293313	ug/L	0.22201828	0.0293313	ug/L	0.22201828	756.93%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	33.7	0.271380	ug/L	0.6023412	0.271380	ug/L	0.6023412	221.96%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	8.5	0.883451	ug/L	0.4564851	0.883451	ug/L	0.4564851	51.67%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335072.1 File : met08_sn_6010 Time : 03-AUG-2015 02:31
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.3536	5000	4699	ug/L	-6	10	
Manganese	A	1052.7	1025.5	5000	5061	ug/L	1	10	
Iron	R	2.0011	1.4748	20000	15820	ug/L	**-21**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726068	-1.75

-=low bias c=CCV

Sequence No.: 72 | **Autosampler Location: 217**
Sample ID: CCV,S27756 | **Date Collected: 8/3/2015 2:31:49 AM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**
Wash Time: 275 | **Auto Dilution Factor: 1**

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	137.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3726067.8	98.2524	%	0.84908				0.86%
Y	39977.3	91.2038	%	0.50714				0.56%
Ag 328.068†	1789139.8	999.588	ug/L	12.7699	999.588	ug/L	12.7699	1.28%
QC value within limits for Ag 328.068 Recovery = 99.96%								
Al 308.215 R†	7658.1	17719.0	ug/L	64.90	17719.0	ug/L	64.90	0.37%
QC value less than the lower limit for Al 308.215 R Recovery = 88.59%								
As 188.979†	36768.1	4699.15	ug/L	14.892	4699.15	ug/L	14.892	0.32%
QC value within limits for As 188.979 Recovery = 93.98%								
B 249.677†	528770.2	4895.27	ug/L	105.292	4895.27	ug/L	105.292	2.15%
QC value within limits for B 249.677 Recovery = 97.91%								
Ba 233.527†	1189502.2	4940.89	ug/L	7.014	4940.89	ug/L	7.014	0.14%
QC value within limits for Ba 233.527 Recovery = 98.82%								
Be 313.107†	1705249.6	521.984	ug/L	0.3923	521.984	ug/L	0.3923	0.08%
QC value within limits for Be 313.107 Recovery = 104.40%								
Ca 315.887 R†	34926.2	18836.9	ug/L	103.86	18836.9	ug/L	103.86	0.55%
QC value within limits for Ca 315.887 R Recovery = 94.18%								
Cd 214.440†	350441.4	4661.45	ug/L	86.748	4661.45	ug/L	86.748	1.86%
QC value within limits for Cd 214.440 Recovery = 93.23%								
Co 228.616†	321489.5	4704.00	ug/L	109.902	4704.00	ug/L	109.902	2.34%
QC value within limits for Co 228.616 Recovery = 94.08%								
Cr 267.716†	104873.6	5078.71	ug/L	351.382	5078.71	ug/L	351.382	6.92%
QC value within limits for Cr 267.716 Recovery = 101.57%								
Cu 324.752†	1704101.5	5095.81	ug/L	8.541	5095.81	ug/L	8.541	0.17%
QC value within limits for Cu 324.752 Recovery = 101.92%								
Fe 238.204 R†	29495.4	15817.1	ug/L	13.27	15817.1	ug/L	13.27	0.08%
QC value less than the lower limit for Fe 238.204 R Recovery = 79.09%								
K 766.490 R†	48304.0	23070.7	ug/L	305.16	23070.7	ug/L	305.16	1.32%
QC value greater than the upper limit for K 766.490 R Recovery = 115.35%								
Mg 279.077 R†	5910.7	18666.3	ug/L	110.35	18666.3	ug/L	110.35	0.59%
QC value within limits for Mg 279.077 R Recovery = 93.33%								
Mn 257.610†	5127694.3	5061.44	ug/L	15.079	5061.44	ug/L	15.079	0.30%
QC value within limits for Mn 257.610 Recovery = 101.23%								
Mo 202.031†	67321.0	4497.26	ug/L	69.630	4497.26	ug/L	69.630	1.55%
QC value less than the lower limit for Mo 202.031 Recovery = 89.95%								
Na 589.592 R†	84640.7	25801.4	ug/L	102.89	25801.4	ug/L	102.89	0.40%
QC value greater than the upper limit for Na 589.592 R Recovery = 129.01%								
Ni 231.604†	122951.0	4773.65	ug/L	71.988	4773.65	ug/L	71.988	1.51%
QC value within limits for Ni 231.604 Recovery = 95.47%								
Pb 220.353†	94841.2	4559.21	ug/L	10.423	4559.21	ug/L	10.423	0.23%
QC value within limits for Pb 220.353 Recovery = 91.18%								
Sb 206.836†	51927.8	4492.04	ug/L	41.538	4492.04	ug/L	41.538	0.92%
QC value less than the lower limit for Sb 206.836 Recovery = 89.84%								
Se 196.026†	53139.3	4607.99	ug/L	23.601	4607.99	ug/L	23.601	0.51%
QC value within limits for Se 196.026 Recovery = 92.16%								
Ti 334.940 R†	65833.5	4452.76	ug/L	14.009	4452.76	ug/L	14.009	0.31%
QC value less than the lower limit for Ti 334.940 R Recovery = 89.06%								
Tl 190.801†	37909.9	4599.76	ug/L	114.133	4599.76	ug/L	114.133	2.48%
QC value within limits for Tl 190.801 Recovery = 92.00%								
V 292.402†	604714.3	5227.11	ug/L	58.992	5227.11	ug/L	58.992	1.13%
QC value within limits for V 292.402 Recovery = 104.54%								
Zn 206.200†	117170.0	4565.08	ug/L	91.327	4565.08	ug/L	91.327	2.00%
QC value within limits for Zn 206.200 Recovery = 91.30%								
Sr 421.552 R†	62189.4	500.222	ug/L	7.5421	500.222	ug/L	7.5421	1.51%
QC value within limits for Sr 421.552 R Recovery = 100.04%								
Sn 189.927†	43686.8	4541.02	ug/L	33.784	4541.02	ug/L	33.784	0.74%
QC value within limits for Sn 189.927 Recovery = 90.82%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335074.1 File : met08_sn_6010 Time : 03-AUG-2015 02:43
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3714635	-2.05

Sequence No.: 74
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 220
Date Collected: 8/3/2015 2:43:30 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	136.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3714635.2	97.9510	%	1.75150				1.79%
Y	41257.5	94.1244	%	2.95802				3.14%
Ag 328.068†	-363.8	-0.203274	ug/L	0.1120281	-0.203274	ug/L	0.1120281	55.11%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	6.2	14.2996	ug/L	15.43871	14.2996	ug/L	15.43871	107.97%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	3.4	0.436585	ug/L	2.3552307	0.436585	ug/L	2.3552307	539.47%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	3001.9	27.7914	ug/L	0.13008	27.7914	ug/L	0.13008	0.47%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	87.2	0.362168	ug/L	0.0967101	0.362168	ug/L	0.0967101	26.70%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-259.3	-0.0793872	ug/L	0.01212401	-0.0793872	ug/L	0.01212401	15.27%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	77.6	41.8532	ug/L	4.09451	41.8532	ug/L	4.09451	9.78%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	2.4	0.0322426	ug/L	0.05816452	0.0322426	ug/L	0.05816452	180.40%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	24.4	0.358477	ug/L	0.5285106	0.358477	ug/L	0.5285106	147.43%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-4.9	-0.239113	ug/L	0.1997230	-0.239113	ug/L	0.1997230	83.53%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	400.3	1.19693	ug/L	0.013024	1.19693	ug/L	0.013024	1.09%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	1.9	1.04231	ug/L	1.403327	1.04231	ug/L	1.403327	134.64%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	177.9	84.9716	ug/L	25.52652	84.9716	ug/L	25.52652	30.04%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	16.0	50.3969	ug/L	14.86283	50.3969	ug/L	14.86283	29.49%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	793.8	0.783505	ug/L	0.1187784	0.783505	ug/L	0.1187784	15.16%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-1.2	-0.0787950	ug/L	0.12098562	-0.0787950	ug/L	0.12098562	153.54%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	3502.7	1067.75	ug/L	45.705	1067.75	ug/L	45.705	4.28%
QC value greater than the upper limit for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	3.2	0.125215	ug/L	0.2449568	0.125215	ug/L	0.2449568	195.63%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-26.6	-1.27658	ug/L	0.744387	-1.27658	ug/L	0.744387	58.31%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	4.0	0.346830	ug/L	0.8152780	0.346830	ug/L	0.8152780	235.07%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-13.7	-1.18751	ug/L	3.413227	-1.18751	ug/L	3.413227	287.43%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	-1.6	-0.110311	ug/L	0.1994806	-0.110311	ug/L	0.1994806	180.83%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	4.2	0.509180	ug/L	0.4570344	0.509180	ug/L	0.4570344	89.76%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	42.2	0.364892	ug/L	0.3138580	0.364892	ug/L	0.3138580	86.01%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-7.9	-0.308196	ug/L	0.0581286	-0.308196	ug/L	0.0581286	18.86%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	80.2	0.646473	ug/L	0.2071588	0.646473	ug/L	0.2071588	32.04%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	1.1	0.114901	ug/L	0.6694580	0.114901	ug/L	0.6694580	582.64%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 05:34	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 05:39	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 05:44	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 05:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 05:54	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 06:00	1.0	5	
007	met08_sn_6010	XICV				08/04/15 06:07	1.0	6	
008	met08_sn_6010	ICV				08/04/15 06:15	1.0	6	
009	met08_sn_6010	XCRI				08/04/15 06:22	1.0	7	
010	met08_sn_6010	CRI				08/04/15 06:42	1.0	7	
011	met08_sn_6010	ICB				08/04/15 06:51	1.0		
012	met08_sn_6010	ICSA				08/04/15 06:56	1.0	8	10:AL=510000
013	met08_sn_6010	ICSAB				08/04/15 07:21	1.0	9	5:AL=500000
014	met08_sn_6010	MSS	268613-004	Water	225732	08/04/15 08:40	1.0		
015	met08_sn_6010	MS	QC798023	Water	225732	08/04/15 08:45	1.0		
016	met08_sn_6010	MSD	QC798024	Water	225732	08/04/15 08:49	1.0		
017	met08_sn_6010	SER	QC798025	Water	225732	08/04/15 08:53	5.0		
018	met08_sn_6010	PDS	QC798026	Water	225732	08/04/15 08:58	1.0	10 11 12	
019	met08_sn_6010	X	RINSE			08/04/15 09:02	1.0		
020	met08_sn_6010	BLANK	QC798085	Soil	225747	08/04/15 09:07	1.0		
021	met08_sn_6010	BS	QC798086	Soil	225747	08/04/15 09:12	5.0		
022	met08_sn_6010	BSD	QC798087	Soil	225747	08/04/15 09:17	5.0		
023	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 09:22	1.0		6:FE=530000
024	met08_sn_6010	CCV				08/04/15 09:29	1.0	13	
025	met08_sn_6010	CCB				08/04/15 09:37	1.0		
026	met08_sn_6010	MS	QC798088	Soil	225747	08/04/15 09:42	5.0		1:FE=150000
027	met08_sn_6010	MSD	QC798089	Soil	225747	08/04/15 09:49	5.0		2:FE=120000
028	met08_sn_6010	SAMPLE	268664-001	Soil	225747	08/04/15 09:57	10.0		
029	met08_sn_6010	SAMPLE	268664-002	Soil	225747	08/04/15 10:01	10.0		
030	met08_sn_6010	SAMPLE	268664-003	Soil	225747	08/04/15 10:06	10.0		
031	met08_sn_6010	SAMPLE	268664-004	Soil	225747	08/04/15 10:10	10.0		
032	met08_sn_6010	SAMPLE	268664-005	Soil	225747	08/04/15 10:18	10.0		
033	met08_sn_6010	SAMPLE	268664-006	Soil	225747	08/04/15 10:26	10.0		
034	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 10:30	100.0		
035	met08_sn_6010	CCV				08/04/15 10:35	1.0	13	
036	met08_sn_6010	CCB				08/04/15 10:42	1.0		
037	met08_sn_6010	X	RINSE			08/04/15 10:50	1.0		
038	met08_sn_6010	X	RINSE			08/04/15 10:55	1.0		
039	met08_sn_6010	X	RINSE			08/04/15 11:00	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 11:05	1.0		
041	met08_sn_6010	CCV				08/04/15 11:10	1.0	13	
042	met08_sn_6010	CCB				08/04/15 11:18	1.0		
043	met08_sn_6010	MSS	268334-001	Water	225471	08/04/15 11:39	10.0		
044	met08_sn_6010	SER	QC798098	Water	225471	08/04/15 11:43	50.0		
045	met08_sn_6010	PDS	QC798099	Water	225471	08/04/15 11:48	10.0	10 11 12	
046	met08_sn_6010	X	RINSE			08/04/15 11:55	1.0		
047	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 12:00	1.0		
048	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 12:05	1.0		
049	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 12:10	5.0		
050	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 12:16	5.0		
051	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 12:21	1.0		3:MG=540000
052	met08_sn_6010	X	RINSE			08/04/15 12:29	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCV				08/04/15 12:34	1.0	13	
054	met08_sn_6010	CCB				08/04/15 12:42	1.0		
055	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 12:47	5.0		2:NA=750000
056	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 12:56	5.0		2:NA=860000
057	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 13:04	5.0		2:NA=900000
058	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 13:13	1.0	10 11 12	3:MG=510000
059	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 13:21	1.0		
060	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 13:26	1.0		5:K=370000
061	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 13:33	1.0		
062	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 13:38	1.0		
063	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 13:43	1.0		4:CA=560000
064	met08_sn_6010	X	RINSE			08/04/15 13:52	1.0		
065	met08_sn_6010	CCV				08/04/15 13:57	1.0	13	
066	met08_sn_6010	CCB				08/04/15 14:05	1.0		
067	met08_sn_6010	CCB				08/04/15 14:09	1.0		

NCD 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 54.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S26229 11=S26230 12=S27470 13=S27756

CURTIS & TOMPKINS POST DIGEST SPIKE USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Type	: MSS	Type	: PDS
Inst	: MET08	Inst	: MET08
Seqnum	: 85309335058.1	Seqnum	: 85311374058.5
File	: met08_sn_6010	File	: met08_sn_6010
IDF	: 1.0	IDF	: 1.0
Lab ID	: 268557-001	Lab ID	: QC797937
Matrix	: Filtrate	Matrix	: Filtrate
Batch	: 225705	Batch	: 225705
Time	: 03-AUG-2015 00:57	Time	: 04-AUG-2015 13:13
Cal	: 85309335001	Cal	: 85311374001
Units	: ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
PDS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

PDS standards: S26229 (100X), S26230 (100X), S27470 (100X)

Analyte	MSS	Ch	Spiked	PDS	Ch	%Rec	Limits	Flags
Arsenic	13.31	A	100.0	123.2	A	110	75-125	u
Iron	328.4	R	10000	9215	R	89	75-125	>c- **b***
Manganese	1970	A	100.0	2056	A	86	75-125	!<cri+ : u

ISTD (ICAL 002)	Ch	ICAL Abund	PDS Abund	%Drift
Yttrium	A	3845807	2940760	-23.53

!=warning +=high bias -=low bias :=recovery not meaningful <=opening >=closing b=noncompliant c=CCV u=use

Sequence No.: 27
Sample ID: QC797937,225705,1,S26229
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 91
Date Collected: 8/4/2015 1:13:21 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: QC797937,225705,1,S26229

Analyte	Back Pressure	Flow
All	150.0 kPa	0.60 L/min

Mean Data: QC797937,225705,1,S26229

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2940760.2	76.4667	%	0.31499				0.41%
Y	40773.8	92.3119	%	0.30958				0.34%
Ag 328.068†	214107.2	115.074	ug/L	1.1035	115.074	ug/L	1.1035	0.96%
Al 308.215 R†	3960.4	9426.95	ug/L	79.717	9426.95	ug/L	79.717	0.85%
As 188.979†	1016.1	123.180	ug/L	0.3564	123.180	ug/L	0.3564	0.29%
B 249.677†	389647.3	3374.35	ug/L	26.738	3374.35	ug/L	26.738	0.79%
Ba 233.527†	97578.1	388.376	ug/L	0.6274	388.376	ug/L	0.6274	0.16%
Be 313.107†	375901.2	110.070	ug/L	0.2449	110.070	ug/L	0.2449	0.22%
Ca 315.887 R†	552170.9	283128	ug/L	4437.65	283128	ug/L	4437.65	1.57%
Cd 214.440†	8390.4	102.189	ug/L	1.8679	102.189	ug/L	1.8679	1.83%
Co 228.616†	7154.1	98.9156	ug/L	0.56385	98.9156	ug/L	0.56385	0.57%
Cr 267.716†	2741.8	120.209	ug/L	4.3183	120.209	ug/L	4.3183	3.59%
Cu 324.752†	39108.3	118.092	ug/L	0.1521	118.092	ug/L	0.1521	0.13%
Fe 238.204 R†	17412.7	9215.10	ug/L	28.588	9215.10	ug/L	28.588	0.31%
K 766.490 R†	364599.2	155176	ug/L	2565.08	155176	ug/L	2565.08	1.65%
Mg 279.077 R†	178648.1	512786	ug/L	7064.37	512786	ug/L	7064.37	1.38%
Mn 257.610†	2208623.5	2056.08	ug/L	0.934	2056.08	ug/L	0.934	0.05%
Mo 202.031†	1617.4	115.909	ug/L	1.7353	115.909	ug/L	1.7353	1.50%
Na 589.592 R†	Saturated2							
Ni 231.604†	2756.2	99.6073	ug/L	0.53859	99.6073	ug/L	0.53859	0.54%
Pb 220.353†	2037.9	93.2815	ug/L	0.35115	93.2815	ug/L	0.35115	0.38%
Sb 206.836†	1250.2	114.056	ug/L	1.8832	114.056	ug/L	1.8832	1.65%
Se 196.026†	1523.6	124.551	ug/L	8.0683	124.551	ug/L	8.0683	6.48%
Ti 334.940 R†	13111.9	964.568	ug/L	6.6770	964.568	ug/L	6.6770	0.69%
Tl 190.801†	376.5	46.9144	ug/L	4.23849	46.9144	ug/L	4.23849	9.03%
V 292.402†	13194.1	107.358	ug/L	1.0100	107.358	ug/L	1.0100	0.94%
Zn 206.200†	3102.3	109.517	ug/L	0.4928	109.517	ug/L	0.4928	0.45%
Sr 421.552 R†	557411.7	4738.98	ug/L	83.413	4738.98	ug/L	83.413	1.76%
Sn 189.927†	9556.4	944.987	ug/L	5.8511	944.987	ug/L	5.8511	0.62%

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET08 Reviewer : ---
Calnum : 85311374001 Date : 04-AUG-2015 05:34
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311374002	L1	04-AUG-2015 05:39	S27752
L2	met08_sn_6010	85311374003	L2	04-AUG-2015 05:44	S27753
L3	met08_sn_6010	85311374004	L3	04-AUG-2015 05:49	S27754
L4	met08_sn_6010	85311374005	L4	04-AUG-2015 05:54	S27755
L5	met08_sn_6010	85311374006	L5	04-AUG-2015 06:00	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	9.6800	7.9950	7.9413	8.2519		LOR0	0.00000	0.12123		8.4671	1.000	0.995	
Manganese	A	1174.5	1126.3	1089.9	1074.0		LOR0	0.00000	9.31E-4		1116.2	1.000	0.995	
Iron	R	2.1270		1.9293	1.8954	1.8895	LOR0	0.00000	0.52922		1.9603	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	17	100.00	-3	1000.0	-4	10000	0		
Manganese	A	5.0000	9	100.00	5	1000.0	1	10000	0		
Iron	R	100.00	13			1000.0	2	10000	0	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311374001 Cal Date : 04-AUG-2015

ICV 85311374008 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5046	ug/L	1	10	
Manganese	A	5000	5006	ug/L	0	10	
Iron	R	20000	20230	ug/L	1	10	

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 1
Date Collected: 8/4/2015 5:34:54 AM
Data Type: Reprocessed on 8/4/2015 7:19:58 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICALBLK,

Analyte	Back Pressure	Flow
All	139.0 kPa	0.60 L/min

Mean Data: ICALBLK,

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Ag 328.068	7555.9	353.44	4.68%	[0.00]	ug/L
Al 308.215 R	-7.9	8.34	105.89%	[0.00]	ug/L
As 188.979	13.6	18.83	138.18%	[0.00]	ug/L
B 249.677	32.1	16.42	51.09%	[0.00]	ug/L
Ba 233.527	9.4	5.98	63.31%	[0.00]	ug/L
Be 313.107	-189.0	35.83	18.96%	[0.00]	ug/L
Ca 315.887 R	-79.1	15.86	20.04%	[0.00]	ug/L
Cd 214.440	-10.7	1.71	15.94%	[0.00]	ug/L
Co 228.616	-459.8	45.92	9.99%	[0.00]	ug/L
Cr 267.716	-47.9	1.49	3.11%	[0.00]	ug/L
Cu 324.752	2167.8	86.40	3.99%	[0.00]	ug/L
Fe 238.204 R	60.2	3.53	5.87%	[0.00]	ug/L
K 766.490 R	1003.3	182.12	18.15%	[0.00]	ug/L
Mg 279.077 R	28.1	2.55	9.05%	[0.00]	ug/L
Mn 257.610	876.3	9.53	1.09%	[0.00]	ug/L
Mo 202.031	3.3	3.46	106.00%	[0.00]	ug/L
Na 589.592 R	-380.3	36.46	9.59%	[0.00]	ug/L
Ni 231.604	-101.1	4.94	4.88%	[0.00]	ug/L
Pb 220.353	32.9	9.06	27.55%	[0.00]	ug/L
Sb 206.836	10.3	28.00	271.55%	[0.00]	ug/L
Se 196.026	-39.0	11.88	30.45%	[0.00]	ug/L
Ti 334.940 R	-15.6	6.96	44.54%	[0.00]	ug/L
Tl 190.801	-5.7	7.01	121.90%	[0.00]	ug/L
V 292.402	-86.6	64.98	75.05%	[0.00]	ug/L
Zn 206.200	10.0	1.75	17.52%	[0.00]	ug/L
Sr 421.552 R	69.3	39.03	56.34%	[0.00]	ug/L
Sn 189.927	-14.0	4.97	35.40%	[0.00]	ug/L

Sequence No.: 2
Sample ID: ICAL,L1,S27752,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 2
Date Collected: 8/4/2015 5:39:53 AM
Data Type: Reprocessed on 8/4/2015 7:19:58 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L1,S27752,1

Analyte	Back Pressure	Flow
All	139.0 kPa	0.60 L/min

Mean Data: ICAL,L1,S27752,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3845807.2	50407.65	1.31%	100.000	%
Y	44169.6	812.73	1.84%	100.000	%
Ag 328.068†	9211.4	557.43	6.05%	[5]	ug/L
Al 308.215 R†	56.1	0.65	1.16%	[100]	ug/L
As 188.979†	48.4	13.10	27.08%	[5]	ug/L
B 249.677†	10893.1	220.17	2.02%	[100]	ug/L
Ba 233.527†	1325.8	26.28	1.98%	[5]	ug/L
Be 313.107†	7408.6	193.23	2.61%	[2]	ug/L
Ca 315.887 R†	420.8	14.35	3.41%	[200]	ug/L
Cd 214.440†	414.7	10.02	2.42%	[5]	ug/L
Co 228.616†	337.0	65.17	19.34%	[5]	ug/L
Cr 267.716†	135.9	6.38	4.70%	[5]	ug/L
Cu 324.752†	1765.3	17.29	0.98%	[5]	ug/L
Fe 238.204 R†	212.7	7.23	3.40%	[100]	ug/L
K 766.490 R†	1087.9	353.99	32.54%	[500]	ug/L
Mg 279.077 R†	83.6	4.91	5.88%	[200]	ug/L
Mn 257.610†	5872.3	196.87	3.35%	[5]	ug/L
Mo 202.031†	71.3	1.11	1.56%	[5]	ug/L
Na 589.592 R†	1777.3	63.39	3.57%	[500]	ug/L
Ni 231.604†	143.9	4.37	3.03%	[5]	ug/L
Pb 220.353†	126.3	17.07	13.52%	[5]	ug/L
Sb 206.836†	119.1	22.51	18.90%	[10]	ug/L
Se 196.026†	139.9	31.67	22.64%	[10]	ug/L
Ti 334.940 R†	146.2	12.27	8.39%	[10]	ug/L
Tl 190.801†	107.4	11.10	10.34%	[10]	ug/L
V 292.402†	647.9	59.71	9.22%	[5]	ug/L
Zn 206.200†	597.3	7.13	1.19%	[20]	ug/L
Sr 421.552 R†	648.5	83.80	12.92%	[5]	ug/L
Sn 189.927†	410.8	14.31	3.48%	[40]	ug/L

Sequence No.: 3
Sample ID: ICAL,L2,S27753,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 3
Date Collected: 8/4/2015 5:44:57 AM
Data Type: Reprocessed on 8/4/2015 7:20:00 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L2,S27753,1

Analyte	Back Pressure	Flow
All	139.0 kPa	0.60 L/min

Mean Data: ICAL,L2,S27753,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3852036.4	48173.25	1.25%	100.162	%
Y	43856.5	402.24	0.92%	99.2912	%
Ag 328.068†	36995.8	753.75	2.04%	[20]	ug/L
As 188.979†	799.5	5.06	0.63%	[100]	ug/L
Ba 233.527†	25784.9	328.41	1.27%	[100]	ug/L
Be 313.107†	342417.5	866.83	0.25%	[100]	ug/L
Cd 214.440†	8014.4	54.72	0.68%	[100]	ug/L
Co 228.616†	6799.3	64.79	0.95%	[100]	ug/L
Cr 267.716†	2368.8	148.84	6.28%	[100]	ug/L
Cu 324.752†	32155.6	694.28	2.16%	[100]	ug/L
Mn 257.610†	112632.5	1714.49	1.52%	[100]	ug/L
Mo 202.031†	1369.8	10.71	0.78%	[100]	ug/L
Ni 231.604†	2633.5	8.42	0.32%	[100]	ug/L
Pb 220.353†	2218.5	16.63	0.75%	[100]	ug/L
Sb 206.836†	1070.7	24.56	2.29%	[100]	ug/L
Se 196.026†	1152.5	70.57	6.12%	[100]	ug/L
Ti 334.940 R†	1363.5	21.46	1.57%	[100]	ug/L
Tl 190.801†	826.6	24.37	2.95%	[100]	ug/L
V 292.402†	12172.8	227.62	1.87%	[100]	ug/L
Zn 206.200†	2794.6	35.05	1.25%	[100]	ug/L
Sr 421.552 R†	11986.7	92.94	0.78%	[100]	ug/L
Sn 189.927†	1009.6	6.89	0.68%	[100]	ug/L

Sequence No.: 4
Sample ID: ICAL,L3,S27754,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 4
Date Collected: 8/4/2015 5:49:01 AM
Data Type: Reprocessed on 8/4/2015 7:20:00 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L3,S27754,1

Analyte	Back Pressure	Flow
All	139.0 kPa	0.60 L/min

Mean Data: ICAL,L3,S27754,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3893727.5	25727.65	0.66%	101.246	%
Y	43299.7	253.00	0.58%	98.0307	%
Ag 328.068†	357812.4	2442.84	0.68%	[200]	ug/L
Al 308.215 R†	433.8	0.68	0.16%	[1000]	ug/L
As 188.979†	7941.3	101.31	1.28%	[1000]	ug/L
B 249.677†	110951.3	869.85	0.78%	[1000]	ug/L
Ba 233.527†	248034.2	1585.68	0.64%	[1000]	ug/L
Be 313.107†	3415009.4	12028.47	0.35%	[1000]	ug/L
Ca 315.887 R†	1984.6	5.41	0.27%	[1000]	ug/L
Cd 214.440†	78878.6	869.97	1.10%	[1000]	ug/L
Co 228.616†	70698.3	644.22	0.91%	[1000]	ug/L
Cr 267.716†	25316.4	29.83	0.12%	[1000]	ug/L
Cu 324.752†	319769.3	359.39	0.11%	[1000]	ug/L
Fe 238.204 R†	1929.3	14.12	0.73%	[1000]	ug/L
K 766.490 R†	2216.0	153.78	6.94%	[1000]	ug/L
Mg 279.077 R†	375.6	7.51	2.00%	[1000]	ug/L
Mn 257.610†	1089889.1	2192.33	0.20%	[1000]	ug/L
Mo 202.031†	13338.7	169.70	1.27%	[1000]	ug/L
Na 589.592 R†	3535.3	155.35	4.39%	[1000]	ug/L
Ni 231.604†	26579.3	341.65	1.29%	[1000]	ug/L
Pb 220.353†	21635.5	239.90	1.11%	[1000]	ug/L
Sb 206.836†	10179.4	176.16	1.73%	[1000]	ug/L
Se 196.026†	11932.2	90.24	0.76%	[1000]	ug/L
Ti 334.940 R†	13528.1	19.44	0.14%	[1000]	ug/L
Tl 190.801†	8600.0	24.23	0.28%	[1000]	ug/L
V 292.402†	115680.1	887.31	0.77%	[1000]	ug/L
Zn 206.200†	27858.6	206.33	0.74%	[1000]	ug/L
Sr 421.552 R†	122851.4	885.11	0.72%	[1000]	ug/L
Sn 189.927†	10008.3	141.32	1.41%	[1000]	ug/L

Sequence No.: 5
Sample ID: ICAL,L4,S27755,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 5
Date Collected: 8/4/2015 5:54:10 AM
Data Type: Reprocessed on 8/4/2015 7:20:01 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L4,S27755,1

Analyte	Back Pressure	Flow
All	141.0 kPa	0.60 L/min

Mean Data: ICAL,L4,S27755,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3751353.8	49509.12	1.32%	97.5440	%
Y	43449.9	434.40	1.00%	98.3708	%
Ag 328.068†	3722658.0	11025.14	0.30%	[2000]	ug/L
Al 308.215 R†	4200.7	35.24	0.84%	[10000]	ug/L
As 188.979†	82519.0	1043.97	1.27%	[10000]	ug/L
B 249.677†	1155192.3	2557.50	0.22%	[10000]	ug/L
Ba 233.527†	2512783.5	4368.91	0.17%	[10000]	ug/L
Ca 315.887 R†	20009.9	70.90	0.35%	[10000]	ug/L
Cd 214.440†	821391.9	4921.71	0.60%	[10000]	ug/L
Co 228.616†	710819.2	934.71	0.13%	[10000]	ug/L
Cr 267.716†	227833.7	2033.03	0.89%	[10000]	ug/L
Cu 324.752†	3312842.9	84796.78	2.56%	[10000]	ug/L
Fe 238.204 R†	18953.9	45.13	0.24%	[10000]	ug/L
K 766.490 R†	23085.3	152.85	0.66%	[10000]	ug/L
Mg 279.077 R†	3575.4	17.78	0.50%	[10000]	ug/L
Mn 257.610†	10740265.9	286632.98	2.67%	[10000]	ug/L
Mo 202.031†	139601.1	762.64	0.55%	[10000]	ug/L
Na 589.592 R†	34402.1	252.01	0.73%	[10000]	ug/L
Ni 231.604†	276814.9	1061.82	0.38%	[10000]	ug/L
Pb 220.353†	218483.7	4116.89	1.88%	[10000]	ug/L
Sb 206.836†	109695.2	2112.22	1.93%	[10000]	ug/L
Se 196.026†	122361.2	2344.78	1.92%	[10000]	ug/L
Ti 334.940 R†	135942.1	1292.24	0.95%	[10000]	ug/L
Tl 190.801†	80194.7	681.77	0.85%	[10000]	ug/L
V 292.402†	1229714.5	1305.50	0.11%	[10000]	ug/L
Zn 206.200†	283320.2	413.03	0.15%	[10000]	ug/L
Sr 421.552 R†	1175758.2	13107.89	1.11%	[10000]	ug/L
Sn 189.927†	101137.7	1569.98	1.55%	[10000]	ug/L

Sequence No.: 6
Sample ID: ICAL,L5,S27758,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 6
Date Collected: 8/4/2015 6:00:56 AM
Data Type: Reprocessed on 8/4/2015 7:20:02 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L5,S27758,1

Analyte	Back Pressure	Flow
All	141.0 kPa	0.60 L/min

Mean Data: ICAL,L5,S27758,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3459171.3	16561.36	0.48%	89.9466	%
Y	42825.2	167.98	0.39%	96.9564	%
Al 308.215 R†	42011.1	161.57	0.38%	[100000]	ug/L
Ca 315.887 R†	194974.0	710.36	0.36%	[100000]	ug/L
Fe 238.204 R†	188951.8	631.11	0.33%	[100000]	ug/L
K 766.490 R†	235001.1	1026.47	0.44%	[100000]	ug/L
Mg 279.077 R†	34829.3	33.49	0.10%	[100000]	ug/L
Na 589.592 R†	340833.9	6685.62	1.96%	[100000]	ug/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin Thru 0	0.0	1861	0.00000	0.999993	
Al 308.215 R	4	Lin Thru 0	0.0	0.4201	0.00000	1.000000	
As 188.979	4	Lin Thru 0	0.0	8.249	0.00000	0.999993	
B 249.677	3	Lin Thru 0	0.0	115.5	0.00000	0.999992	
Ba 233.527	4	Lin Thru 0	0.0	251.2	0.00000	0.999999	
Be 313.107	3	Lin Thru 0	0.0	3415	0.00000	1.000000	
Ca 315.887 R	4	Lin Thru 0	0.0	1.950	0.00000	0.999997	
Cd 214.440	4	Lin Thru 0	0.0	82.11	0.00000	0.999992	
Co 228.616	4	Lin Thru 0	0.0	71.08	0.00000	1.000000	
Cr 267.716	4	Lin Thru 0	0.0	22.81	0.00000	0.999939	
Cu 324.752	4	Lin Thru 0	0.0	331.2	0.00000	0.999994	
Fe 238.204 R	4	Lin Thru 0	0.0	1.890	0.00000	1.000000	
K 766.490 R	4	Lin Thru 0	0.0	2.350	0.00000	0.999998	
Mg 279.077 R	4	Lin Thru 0	0.0	0.3484	0.00000	0.999996	
Mn 257.610	4	Lin Thru 0	0.0	1074	0.00000	0.999999	
Mo 202.031	4	Lin Thru 0	0.0	13.95	0.00000	0.999990	
Na 589.592 R	4	Lin Thru 0	0.0	3.409	0.00000	0.999999	
Ni 231.604	4	Lin Thru 0	0.0	27.67	0.00000	0.999992	
Pb 220.353	4	Lin Thru 0	0.0	21.85	0.00000	1.000000	
Sb 206.836	4	Lin Thru 0	0.0	10.96	0.00000	0.999975	
Se 196.026	4	Lin Thru 0	0.0	12.23	0.00000	0.999997	
Ti 334.940 R	4	Lin Thru 0	0.0	13.59	0.00000	1.000000	
Tl 190.801	4	Lin Thru 0	0.0	8.025	0.00000	0.999974	
V 292.402	4	Lin Thru 0	0.0	122.9	0.00000	0.999983	
Zn 206.200	4	Lin Thru 0	0.0	28.33	0.00000	0.999999	
Sr 421.552 R	4	Lin Thru 0	0.0	117.6	0.00000	0.999990	
Sn 189.927	4	Lin Thru 0	0.0	10.11	0.00000	0.999999	

Sequence No.: 7
Sample ID: ICV,S27757
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 8
Date Collected: 8/4/2015 6:15:03 AM
Data Type: Reprocessed on 8/4/2015 7:20:02 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV,S27757

Analyte	Back Pressure	Flow
All	142.0 kPa	0.60 L/min

Mean Data: ICV,S27757

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3683692.7	95.7846	%	0.42017				0.44%
Y	43161.5	97.7177	%	1.34495				1.38%
Ag 328.068†	1813758.0	974.818	ug/L	16.2567	974.818	ug/L	16.2567	1.67%
QC value within limits for Ag 328.068 Recovery = 97.48%								
Al 308.215 R†	8432.4	20071.8	ug/L	128.53	20071.8	ug/L	128.53	0.64%
QC value within limits for Al 308.215 R Recovery = 100.36%								
As 188.979†	41625.6	5046.27	ug/L	28.192	5046.27	ug/L	28.192	0.56%
QC value within limits for As 188.979 Recovery = 100.93%								
B 249.677†	589509.0	5105.15	ug/L	15.342	5105.15	ug/L	15.342	0.30%
QC value within limits for B 249.677 Recovery = 102.10%								
Ba 233.527†	1252503.4	4985.15	ug/L	18.818	4985.15	ug/L	18.818	0.38%
QC value within limits for Ba 233.527 Recovery = 99.70%								
Be 313.107†	1759556.6	515.228	ug/L	0.4247	515.228	ug/L	0.4247	0.08%
QC value within limits for Be 313.107 Recovery = 103.05%								
Ca 315.887 R†	39995.8	20508.0	ug/L	90.21	20508.0	ug/L	90.21	0.44%
QC value within limits for Ca 315.887 R Recovery = 102.54%								
Cd 214.440†	415983.0	5066.37	ug/L	118.971	5066.37	ug/L	118.971	2.35%
QC value within limits for Cd 214.440 Recovery = 101.33%								
Co 228.616†	353404.4	4963.09	ug/L	7.179	4963.09	ug/L	7.179	0.14%
QC value within limits for Co 228.616 Recovery = 99.26%								
Cr 267.716†	116987.7	5129.12	ug/L	238.071	5129.12	ug/L	238.071	4.64%
QC value within limits for Cr 267.716 Recovery = 102.58%								
Cu 324.752†	1623179.1	4901.36	ug/L	20.640	4901.36	ug/L	20.640	0.42%
QC value within limits for Cu 324.752 Recovery = 98.03%								
Fe 238.204 R†	38232.9	20233.5	ug/L	59.25	20233.5	ug/L	59.25	0.29%
QC value within limits for Fe 238.204 R Recovery = 101.17%								
K 766.490 R†	45157.8	19219.5	ug/L	604.90	19219.5	ug/L	604.90	3.15%
QC value within limits for K 766.490 R Recovery = 96.10%								
Mg 279.077 R†	7120.6	20438.6	ug/L	150.20	20438.6	ug/L	150.20	0.73%
QC value within limits for Mg 279.077 R Recovery = 102.19%								
Mn 257.610†	5377875.6	5006.45	ug/L	20.058	5006.45	ug/L	20.058	0.40%
QC value within limits for Mn 257.610 Recovery = 100.13%								
Mo 202.031†	69574.1	4985.98	ug/L	61.049	4985.98	ug/L	61.049	1.22%
QC value within limits for Mo 202.031 Recovery = 99.72%								
Na 589.592 R†	70008.1	20538.2	ug/L	636.72	20538.2	ug/L	636.72	3.10%
QC value within limits for Na 589.592 R Recovery = 102.69%								
Ni 231.604†	136078.1	4917.81	ug/L	83.409	4917.81	ug/L	83.409	1.70%
QC value within limits for Ni 231.604 Recovery = 98.36%								
Pb 220.353†	109127.9	4995.26	ug/L	68.313	4995.26	ug/L	68.313	1.37%
QC value within limits for Pb 220.353 Recovery = 99.91%								
Sb 206.836†	53685.7	4897.59	ug/L	70.621	4897.59	ug/L	70.621	1.44%
QC value within limits for Sb 206.836 Recovery = 97.95%								
Se 196.026†	61581.3	5034.01	ug/L	17.106	5034.01	ug/L	17.106	0.34%
QC value within limits for Se 196.026 Recovery = 100.68%								
Ti 334.940 R†	67852.1	4991.49	ug/L	8.161	4991.49	ug/L	8.161	0.16%
QC value within limits for Ti 334.940 R Recovery = 99.83%								
Tl 190.801†	41221.9	5136.52	ug/L	105.697	5136.52	ug/L	105.697	2.06%
QC value within limits for Tl 190.801 Recovery = 102.73%								
V 292.402†	606609.9	4935.83	ug/L	54.087	4935.83	ug/L	54.087	1.10%
QC value within limits for V 292.402 Recovery = 98.72%								
Zn 206.200†	144242.7	5092.00	ug/L	15.626	5092.00	ug/L	15.626	0.31%
QC value within limits for Zn 206.200 Recovery = 101.84%								
Sr 421.552 R†	58974.2	499.884	ug/L	0.6256	499.884	ug/L	0.6256	0.13%
QC value within limits for Sr 421.552 R Recovery = 99.98%								
Sn 189.927†	50123.3	4956.46	ug/L	15.087	4956.46	ug/L	15.087	0.30%
QC value within limits for Sn 189.927 Recovery = 99.13%								

All analyte(s) passed QC.

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374010.1 File : met08_sn_6010 Time : 04-AUG-2015 06:42
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.782	ug/L	16	30	
Manganese	A	5.000	6.242	ug/L	**25**	30	!cri+
Iron	R	100.0	118.6	ug/L	19	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3884369	1.00

!=warning +=high bias

Sequence No.: 8
Sample ID: CRI,S27759
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 7
Date Collected: 8/4/2015 6:42:19 AM
Data Type: Reprocessed on 8/4/2015 7:20:03 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CRI,S27759

Analyte	Back Pressure	Flow
All	141.0 kPa	0.60 L/min

Mean Data: CRI,S27759

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3884368.9	101.003	%	0.7781				0.77%
Y	44166.1	99.9922	%	1.06798				1.07%
Ag 328.068†	9220.3	4.95553	ug/L	0.310246	4.95553	ug/L	0.310246	6.26%
QC value within limits for Ag 328.068 Recovery = 99.11%								
Al 308.215 R†	60.0	142.930	ug/L	16.3207	142.930	ug/L	16.3207	11.42%
QC value greater than the upper limit for Al 308.215 R Recovery = 142.93%								
As 188.979†	47.7	5.78152	ug/L	2.107737	5.78152	ug/L	2.107737	36.46%
QC value within limits for As 188.979 Recovery = 115.63%								
B 249.677†	11893.0	102.993	ug/L	2.4484	102.993	ug/L	2.4484	2.38%
QC value within limits for B 249.677 Recovery = 102.99%								
Ba 233.527†	1487.9	5.92205	ug/L	0.155327	5.92205	ug/L	0.155327	2.62%
QC value greater than the upper limit for Ba 233.527 Recovery = 118.44%								
Be 313.107†	8462.2	2.47788	ug/L	0.037947	2.47788	ug/L	0.037947	1.53%
QC value greater than the upper limit for Be 313.107 Recovery = 123.89%								
Ca 315.887 R†	451.6	231.568	ug/L	9.1118	231.568	ug/L	9.1118	3.93%
QC value within limits for Ca 315.887 R Recovery = 115.78%								
Cd 214.440†	470.1	5.72517	ug/L	0.163324	5.72517	ug/L	0.163324	2.85%
QC value within limits for Cd 214.440 Recovery = 114.50%								
Co 228.616†	369.1	5.17125	ug/L	1.216743	5.17125	ug/L	1.216743	23.53%
QC value within limits for Co 228.616 Recovery = 103.43%								
Cr 267.716†	144.8	6.34919	ug/L	0.356011	6.34919	ug/L	0.356011	5.61%
QC value greater than the upper limit for Cr 267.716 Recovery = 126.98%								
Cu 324.752†	2108.3	6.36637	ug/L	0.238540	6.36637	ug/L	0.238540	3.75%
QC value greater than the upper limit for Cu 324.752 Recovery = 127.33%								
Fe 238.204 R†	224.1	118.617	ug/L	1.2704	118.617	ug/L	1.2704	1.07%
QC value within limits for Fe 238.204 R Recovery = 118.62%								
K 766.490 R†	1264.8	538.299	ug/L	78.2059	538.299	ug/L	78.2059	14.53%
QC value within limits for K 766.490 R Recovery = 107.66%								
Mg 279.077 R†	83.1	238.497	ug/L	7.9821	238.497	ug/L	7.9821	3.35%
QC value within limits for Mg 279.077 R Recovery = 119.25%								
Mn 257.610†	6704.6	6.24157	ug/L	0.063674	6.24157	ug/L	0.063674	1.02%
QC value greater than the upper limit for Mn 257.610 Recovery = 124.83%								
Mo 202.031†	84.0	6.01660	ug/L	0.191855	6.01660	ug/L	0.191855	3.19%
QC value greater than the upper limit for Mo 202.031 Recovery = 120.33%								
Na 589.592 R†	1789.2	524.910	ug/L	3.3749	524.910	ug/L	3.3749	0.64%
QC value within limits for Na 589.592 R Recovery = 104.98%								
Ni 231.604†	161.5	5.83618	ug/L	0.313749	5.83618	ug/L	0.313749	5.38%
QC value within limits for Ni 231.604 Recovery = 116.72%								
Pb 220.353†	149.1	6.82405	ug/L	0.742090	6.82405	ug/L	0.742090	10.87%
QC value greater than the upper limit for Pb 220.353 Recovery = 136.48%								
Sb 206.836†	151.2	13.7934	ug/L	2.69583	13.7934	ug/L	2.69583	19.54%
QC value greater than the upper limit for Sb 206.836 Recovery = 137.93%								
Se 196.026†	104.9	8.57530	ug/L	2.591991	8.57530	ug/L	2.591991	30.23%
QC value within limits for Se 196.026 Recovery = 85.75%								
Ti 334.940 R†	160.1	11.7771	ug/L	0.35076	11.7771	ug/L	0.35076	2.98%
QC value within limits for Ti 334.940 R Recovery = 117.77%								
Tl 190.801†	89.9	11.2066	ug/L	0.52689	11.2066	ug/L	0.52689	4.70%
QC value within limits for Tl 190.801 Recovery = 112.07%								
V 292.402†	743.3	6.04807	ug/L	0.103737	6.04807	ug/L	0.103737	1.72%
QC value greater than the upper limit for V 292.402 Recovery = 120.96%								
Zn 206.200†	678.9	23.9652	ug/L	0.39641	23.9652	ug/L	0.39641	1.65%
QC value within limits for Zn 206.200 Recovery = 119.83%								
Sr 421.552 R†	665.1	5.65108	ug/L	0.284990	5.65108	ug/L	0.284990	5.04%
QC value within limits for Sr 421.552 R Recovery = 113.02%								
Sn 189.927†	420.6	41.5932	ug/L	0.82675	41.5932	ug/L	0.82675	1.99%
QC value within limits for Sn 189.927 Recovery = 103.98%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374011.1 File : met08_sn_6010 Time : 04-AUG-2015 06:51
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3906415	1.58

Sequence No.: 9
Sample ID: ICB
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 220
Date Collected: 8/4/2015 6:51:46 AM
Data Type: Reprocessed on 8/4/2015 7:20:04 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	141.0 kPa	0.60 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3906414.7	101.576	%	1.0438				1.03%
Y	44417.6	100.562	%	1.0630				1.06%
Ag 328.068†	-261.5	-0.140566	ug/L	0.1648209	-0.140566	ug/L	0.1648209	117.26%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	1.5	3.47919	ug/L	9.079085	3.47919	ug/L	9.079085	260.95%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	8.3	1.01159	ug/L	1.681058	1.01159	ug/L	1.681058	166.18%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	665.6	5.76449	ug/L	0.329270	5.76449	ug/L	0.329270	5.71%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-0.1	-0.0002532	ug/L	0.04852044	-0.0002532	ug/L	0.04852044	>999.9%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	118.4	0.0346552	ug/L	0.01820193	0.0346552	ug/L	0.01820193	52.52%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-37.5	-19.2523	ug/L	2.38538	-19.2523	ug/L	2.38538	12.39%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	4.7	0.0571688	ug/L	0.01342839	0.0571688	ug/L	0.01342839	23.49%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-7.0	-0.0994839	ug/L	0.87543750	-0.0994839	ug/L	0.87543750	879.98%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-8.0	-0.349162	ug/L	0.2488693	-0.349162	ug/L	0.2488693	71.28%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	107.8	0.325532	ug/L	0.2411082	0.325532	ug/L	0.2411082	74.07%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	6.5	3.41899	ug/L	0.755167	3.41899	ug/L	0.755167	22.09%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	-83.0	-35.3282	ug/L	72.39392	-35.3282	ug/L	72.39392	204.92%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	1.2	3.31483	ug/L	2.205748	3.31483	ug/L	2.205748	66.54%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	123.8	0.115212	ug/L	0.0163690	0.115212	ug/L	0.0163690	14.21%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.8	0.132163	ug/L	0.2671956	0.132163	ug/L	0.2671956	202.17%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	14.7	4.30079	ug/L	21.470172	4.30079	ug/L	21.470172	499.21%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	9.6	0.346443	ug/L	0.1944505	0.346443	ug/L	0.1944505	56.13%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	6.2	0.282393	ug/L	1.0005782	0.282393	ug/L	1.0005782	354.32%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	25.5	2.32416	ug/L	2.351598	2.32416	ug/L	2.351598	101.18%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-16.5	-1.34916	ug/L	2.062349	-1.34916	ug/L	2.062349	152.86%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	11.6	0.850503	ug/L	0.2044898	0.850503	ug/L	0.2044898	24.04%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	12.3	1.52859	ug/L	3.068980	1.52859	ug/L	3.068980	200.77%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	34.4	0.280049	ug/L	0.0624986	0.280049	ug/L	0.0624986	22.32%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	0.2	0.0075974	ug/L	0.02160182	0.0075974	ug/L	0.02160182	284.33%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-33.3	-0.283729	ug/L	0.3124622	-0.283729	ug/L	0.3124622	110.13%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	8.8	0.867440	ug/L	0.7836333	0.867440	ug/L	0.7836333	90.34%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374012.1 File : met08_sn_6010 Time : 04-AUG-2015 06:56
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-1.425]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20010	ug/L	100
Copper	A	20000	21200	ug/L	106
Manganese	A	20000	19260	ug/L	96
Nickel	A	20000	18070	ug/L	90
Vanadium	A	20000	20150	ug/L	101
Aluminum	R	500000	506100	ug/L	101
Calcium	R	500000	492100	ug/L	98
Iron	R	200000	190200	ug/L	95
Magnesium	R	500000	502800	ug/L	101
Titanium	R	20000	20110	ug/L	101

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3208743	-16.57

Sequence No.: 10
Sample ID: ICSA,S27611
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 9
Date Collected: 8/4/2015 6:56:53 AM
Data Type: Reprocessed on 8/4/2015 7:20:04 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSA,S27611

Analyte	Back Pressure	Flow
All	141.0 kPa	0.60 L/min

Mean Data: ICSA,S27611

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3208742.9	83.4348	%	1.24410				1.49%
Y	39938.0	90.4198	%	0.85949				0.95%
Ag 328.068†	1360.8	0.731357	ug/L	1.2007590	0.731357	ug/L	1.2007590	164.18%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	212630.9	506130	ug/L	980.23	506130	ug/L	980.23	0.19%
QC value within limits for Al 308.215 R Recovery = 101.23%								
As 188.979†	-11.8	-1.42542	ug/L	4.207426	-1.42542	ug/L	4.207426	295.17%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	-248.9	-2.15510	ug/L	4.597769	-2.15510	ug/L	4.597769	213.34%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-669.8	-2.66572	ug/L	0.683701	-2.66572	ug/L	0.683701	25.65%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-643.0	-0.188281	ug/L	0.3220344	-0.188281	ug/L	0.3220344	171.04%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	959623.3	492051	ug/L	7246.39	492051	ug/L	7246.39	1.47%
QC value within limits for Ca 315.887 R Recovery = 98.41%								
Cd 214.440†	-165.0	-2.00928	ug/L	0.098961	-2.00928	ug/L	0.098961	4.93%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	2624.3	0.718082	ug/L	2.4497297	0.718082	ug/L	2.4497297	341.15%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	456350.6	20007.9	ug/L	1059.06	20007.9	ug/L	1059.06	5.29%
QC value within limits for Cr 267.716 Recovery = 100.04%								
Cu 324.752†	7020214.2	21198.3	ug/L	181.39	21198.3	ug/L	181.39	0.86%
QC value within limits for Cu 324.752 Recovery = 105.99%								
Fe 238.204 R†	359406.7	190204	ug/L	196.99	190204	ug/L	196.99	0.10%
QC value within limits for Fe 238.204 R Recovery = 95.10%								
K 766.490 R†	-315.8	-134.406	ug/L	67.6621	-134.406	ug/L	67.6621	50.34%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	175162.0	502780	ug/L	2979.92	502780	ug/L	2979.92	0.59%
QC value within limits for Mg 279.077 R Recovery = 100.56%								
Mn 257.610†	20688662.3	19259.8	ug/L	153.24	19259.8	ug/L	153.24	0.80%
QC value within limits for Mn 257.610 Recovery = 96.30%								
Mo 202.031†	62.8	4.50406	ug/L	0.400942	4.50406	ug/L	0.400942	8.90%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	426.5	125.132	ug/L	5.9729	125.132	ug/L	5.9729	4.77%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	499888.1	18065.8	ug/L	193.32	18065.8	ug/L	193.32	1.07%
QC value within limits for Ni 231.604 Recovery = 90.33%								
Pb 220.353†	33.7	1.54311	ug/L	0.729333	1.54311	ug/L	0.729333	47.26%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	44.6	4.07128	ug/L	2.028235	4.07128	ug/L	2.028235	49.82%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-70.0	-5.71884	ug/L	1.368767	-5.71884	ug/L	1.368767	23.93%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	273408.3	20113.1	ug/L	47.82	20113.1	ug/L	47.82	0.24%
QC value within limits for Ti 334.940 R Recovery = 100.57%								
Tl 190.801†	32.5	4.05038	ug/L	30.381878	4.05038	ug/L	30.381878	750.10%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	2476492.1	20150.6	ug/L	292.50	20150.6	ug/L	292.50	1.45%
QC value within limits for V 292.402 Recovery = 100.75%								
Zn 206.200†	-167.2	-5.90183	ug/L	0.605303	-5.90183	ug/L	0.605303	10.26%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	677.7	0.230466	ug/L	0.4459353	0.230466	ug/L	0.4459353	193.49%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	-278.8	-27.5702	ug/L	0.64623	-27.5702	ug/L	0.64623	2.34%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374013.1 File : met08_sn_6010 Time : 04-AUG-2015 07:21
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	519.6	ug/L	4	20	
Manganese	A	500.0	482.7	ug/L	-3	20	
Iron	R	200000	186800	ug/L	-7		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3241075	-15.72

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Initial Sample Wt:
Dilution:
Wash Time:
User canceled analysis.

Autosampler Location: 1
Date Collected: 8/4/2015 7:20:41 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Sequence No.: 11
Sample ID: ICSAB,S27612
Analyst:
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 10
Date Collected: 8/4/2015 7:21:09 AM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSAB,S27612

Analyte	Back Pressure	Flow
All	141.0 kPa	0.60 L/min

Mean Data: ICSAB,S27612

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3241075.4	84.2756	%	0.73892				0.88%
Y	39972.4	90.4976	%	1.43891				1.59%
Ag 328.068†	2051511.1	1102.60	ug/L	14.697	1102.60	ug/L	14.697	1.33%
QC value within limits for Ag 328.068 Recovery = 110.26%								
Al 308.215 R†	209963.4	499780	ug/L	2826.30	499780	ug/L	2826.30	0.57%
QC value within limits for Al 308.215 R Recovery = 99.96%								
As 188.979†	4286.0	519.594	ug/L	6.6907	519.594	ug/L	6.6907	1.29%
QC value within limits for As 188.979 Recovery = 103.92%								
B 249.677†	-296.5	-2.56804	ug/L	5.534624	-2.56804	ug/L	5.534624	215.52%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	134672.4	536.016	ug/L	0.7437	536.016	ug/L	0.7437	0.14%
QC value within limits for Ba 233.527 Recovery = 107.20%								
Be 313.107†	1863693.1	545.721	ug/L	1.5727	545.721	ug/L	1.5727	0.29%
QC value within limits for Be 313.107 Recovery = 109.14%								
Ca 315.887 R†	932829.7	478313	ug/L	5662.02	478313	ug/L	5662.02	1.18%
QC value within limits for Ca 315.887 R Recovery = 95.66%								
Cd 214.440†	82816.2	1008.64	ug/L	19.075	1008.64	ug/L	19.075	1.89%
QC value within limits for Cd 214.440 Recovery = 100.86%								
Co 228.616†	35797.9	467.706	ug/L	4.3429	467.706	ug/L	4.3429	0.93%
QC value within limits for Co 228.616 Recovery = 93.54%								
Cr 267.716†	11868.9	520.370	ug/L	26.7056	520.370	ug/L	26.7056	5.13%
QC value within limits for Cr 267.716 Recovery = 104.07%								
Cu 324.752†	180525.2	545.114	ug/L	1.9770	545.114	ug/L	1.9770	0.36%
QC value within limits for Cu 324.752 Recovery = 109.02%								
Fe 238.204 R†	352997.9	186813	ug/L	916.93	186813	ug/L	916.93	0.49%
QC value within limits for Fe 238.204 R Recovery = 93.41%								
K 766.490 R†	-281.3	-119.716	ug/L	88.5197	-119.716	ug/L	88.5197	73.94%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	172004.4	493716	ug/L	2467.17	493716	ug/L	2467.17	0.50%
QC value within limits for Mg 279.077 R Recovery = 98.74%								
Mn 257.610†	518524.1	482.712	ug/L	0.9446	482.712	ug/L	0.9446	0.20%
QC value within limits for Mn 257.610 Recovery = 96.54%								
Mo 202.031†	7241.1	518.932	ug/L	7.6564	518.932	ug/L	7.6564	1.48%
QC value within limits for Mo 202.031 Recovery = 103.79%								
Na 589.592 R†	326.3	95.7381	ug/L	30.63965	95.7381	ug/L	30.63965	32.00%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	26135.8	944.539	ug/L	8.7357	944.539	ug/L	8.7357	0.92%
QC value within limits for Ni 231.604 Recovery = 94.45%								
Pb 220.353†	21484.5	983.437	ug/L	14.0572	983.437	ug/L	14.0572	1.43%
QC value within limits for Pb 220.353 Recovery = 98.34%								
Sb 206.836†	6092.7	555.815	ug/L	9.0244	555.815	ug/L	9.0244	1.62%
QC value within limits for Sb 206.836 Recovery = 111.16%								
Se 196.026†	6356.3	519.597	ug/L	12.5573	519.597	ug/L	12.5573	2.42%
QC value within limits for Se 196.026 Recovery = 103.92%								
Ti 334.940 R†	271401.7	19965.5	ug/L	102.84	19965.5	ug/L	102.84	0.52%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	3941.2	491.098	ug/L	47.3577	491.098	ug/L	47.3577	9.64%
QC value within limits for Tl 190.801 Recovery = 98.22%								
V 292.402†	67384.0	548.287	ug/L	6.1779	548.287	ug/L	6.1779	1.13%
QC value within limits for V 292.402 Recovery = 109.66%								

```
Zn 206.200†            28180.8     994.830 ug/L       10.4452     994.830 ug/L       10.4452   1.05%
   QC value within limits for Zn 206.200  Recovery = 99.48%
Sr 421.552 R†          61400.0     516.488 ug/L        1.3514     516.488 ug/L        1.3514   0.26%
   QC value within limits for Sr 421.552 R  Recovery = 103.30%
Sn 189.927†             -230.1    -22.7497 ug/L       0.63177    -22.7497 ug/L       0.63177   2.78%
   QC value within limits for Sn 189.927  Recovery = Not calculated
All analyte(s) passed QC.
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CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374053.1 File : met08_sn_6010 Time : 04-AUG-2015 12:34
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.8965	5000	4786	ug/L	-4	10	
Manganese	A	1116.2	1049.1	5000	4883	ug/L	-2	10	
Iron	R	1.9603	1.7499	20000	18520	ug/L	-7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3786842	-1.53

Sequence No.: 22
Sample ID: CCV,S27756
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 217
Date Collected: 8/4/2015 12:34:44 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	145.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3786842.1	98.4668	%	1.44139				1.46%
Y	44330.5	100.364	%	2.6363				2.63%
Ag 328.068†	1780505.5	956.946	ug/L	34.8082	956.946	ug/L	34.8082	3.64%
QC value within limits for Ag 328.068 Recovery = 95.69%								
Al 308.215 R†	8048.0	19156.8	ug/L	118.67	19156.8	ug/L	118.67	0.62%
QC value within limits for Al 308.215 R Recovery = 95.78%								
As 188.979†	39482.4	4786.44	ug/L	76.929	4786.44	ug/L	76.929	1.61%
QC value within limits for As 188.979 Recovery = 95.73%								
B 249.677†	562651.5	4872.57	ug/L	114.616	4872.57	ug/L	114.616	2.35%
QC value within limits for B 249.677 Recovery = 97.45%								
Ba 233.527†	1214738.3	4834.84	ug/L	10.630	4834.84	ug/L	10.630	0.22%
QC value within limits for Ba 233.527 Recovery = 96.70%								
Be 313.107†	1710430.7	500.843	ug/L	1.0454	500.843	ug/L	1.0454	0.21%
QC value within limits for Be 313.107 Recovery = 100.17%								
Ca 315.887 R†	38711.6	19849.6	ug/L	84.66	19849.6	ug/L	84.66	0.43%
QC value within limits for Ca 315.887 R Recovery = 99.25%								
Cd 214.440†	402365.5	4900.52	ug/L	231.102	4900.52	ug/L	231.102	4.72%
QC value within limits for Cd 214.440 Recovery = 98.01%								
Co 228.616†	336450.3	4724.77	ug/L	117.987	4724.77	ug/L	117.987	2.50%
QC value within limits for Co 228.616 Recovery = 94.50%								
Cr 267.716†	104854.3	4597.15	ug/L	82.754	4597.15	ug/L	82.754	1.80%
QC value within limits for Cr 267.716 Recovery = 91.94%								
Cu 324.752†	1581042.2	4774.12	ug/L	1.131	4774.12	ug/L	1.131	0.02%
QC value within limits for Cu 324.752 Recovery = 95.48%								
Fe 238.204 R†	34998.4	18521.8	ug/L	60.10	18521.8	ug/L	60.10	0.32%
QC value within limits for Fe 238.204 R Recovery = 92.61%								
K 766.490 R†	44749.9	19045.9	ug/L	39.48	19045.9	ug/L	39.48	0.21%
QC value within limits for K 766.490 R Recovery = 95.23%								
Mg 279.077 R†	6570.6	18860.1	ug/L	101.54	18860.1	ug/L	101.54	0.54%
QC value within limits for Mg 279.077 R Recovery = 94.30%								
Mn 257.610†	5245343.9	4883.07	ug/L	6.085	4883.07	ug/L	6.085	0.12%
QC value within limits for Mn 257.610 Recovery = 97.66%								
Mo 202.031†	65816.1	4716.67	ug/L	172.789	4716.67	ug/L	172.789	3.66%
QC value within limits for Mo 202.031 Recovery = 94.33%								
Na 589.592 R†	74580.3	21879.6	ug/L	464.74	21879.6	ug/L	464.74	2.12%
QC value within limits for Na 589.592 R Recovery = 109.40%								
Ni 231.604†	132806.0	4799.56	ug/L	175.088	4799.56	ug/L	175.088	3.65%
QC value within limits for Ni 231.604 Recovery = 95.99%								
Pb 220.353†	103934.1	4757.52	ug/L	159.862	4757.52	ug/L	159.862	3.36%
QC value within limits for Pb 220.353 Recovery = 95.15%								
Sb 206.836†	51463.0	4694.81	ug/L	109.339	4694.81	ug/L	109.339	2.33%
QC value within limits for Sb 206.836 Recovery = 93.90%								
Se 196.026†	57338.4	4687.17	ug/L	41.274	4687.17	ug/L	41.274	0.88%
QC value within limits for Se 196.026 Recovery = 93.74%								
Ti 334.940 R†	66274.2	4875.41	ug/L	4.369	4875.41	ug/L	4.369	0.09%
QC value within limits for Ti 334.940 R Recovery = 97.51%								
Tl 190.801†	36647.2	4566.49	ug/L	67.668	4566.49	ug/L	67.668	1.48%
QC value within limits for Tl 190.801 Recovery = 91.33%								
V 292.402†	606699.7	4936.57	ug/L	45.982	4936.57	ug/L	45.982	0.93%
QC value within limits for V 292.402 Recovery = 98.73%								
Zn 206.200†	133981.9	4729.78	ug/L	133.328	4729.78	ug/L	133.328	2.82%
QC value within limits for Zn 206.200 Recovery = 94.60%								
Sr 421.552 R†	56342.6	477.545	ug/L	0.3415	477.545	ug/L	0.3415	0.07%
QC value within limits for Sr 421.552 R Recovery = 95.51%								
Sn 189.927†	47248.6	4672.19	ug/L	47.451	4672.19	ug/L	47.451	1.02%
QC value within limits for Sn 189.927 Recovery = 93.44%								

All analyte(s) passed QC.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374054.1 File : met08_sn_6010 Time : 04-AUG-2015 12:42
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3782945	-1.63

Sequence No.: 23 | **Autosampler Location: 220**
Sample ID: CCB | **Date Collected: 8/4/2015 12:42:27 PM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**
Wash Time: 275 | **Auto Dilution Factor: 1**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	145.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3782944.5	98.3654	%	3.41193				3.47%
Y	44388.3	100.495	%	2.0703				2.06%
Ag 328.068†	-446.3	-0.239875	ug/L	0.4431921	-0.239875	ug/L	0.4431921	184.76%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	13.4	31.9704	ug/L	10.67206	31.9704	ug/L	10.67206	33.38%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	9.7	1.17670	ug/L	0.625562	1.17670	ug/L	0.625562	53.16%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	1890.0	16.3672	ug/L	1.15060	16.3672	ug/L	1.15060	7.03%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	43.6	0.173574	ug/L	0.0316821	0.173574	ug/L	0.0316821	18.25%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	163.0	0.0477262	ug/L	0.02448096	0.0477262	ug/L	0.02448096	51.29%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-30.8	-15.7742	ug/L	0.80578	-15.7742	ug/L	0.80578	5.11%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	29.8	0.363385	ug/L	0.0298979	0.363385	ug/L	0.0298979	8.23%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-36.1	-0.509575	ug/L	0.4626689	-0.509575	ug/L	0.4626689	90.79%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	4.4	0.191832	ug/L	0.1300802	0.191832	ug/L	0.1300802	67.81%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	295.8	0.893176	ug/L	0.3738828	0.893176	ug/L	0.3738828	41.86%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	8.7	4.60421	ug/L	1.031414	4.60421	ug/L	1.031414	22.40%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	142.7	60.7270	ug/L	52.28477	60.7270	ug/L	52.28477	86.10%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	8.6	24.6812	ug/L	8.61103	24.6812	ug/L	8.61103	34.89%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	389.5	0.362598	ug/L	0.0601274	0.362598	ug/L	0.0601274	16.58%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	7.5	0.540420	ug/L	0.1531097	0.540420	ug/L	0.1531097	28.33%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	1607.2	471.496	ug/L	36.7141	471.496	ug/L	36.7141	7.79%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	6.0	0.217459	ug/L	0.3964158	0.217459	ug/L	0.3964158	182.29%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	21.8	0.999159	ug/L	0.5792145	0.999159	ug/L	0.5792145	57.97%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	53.0	4.83745	ug/L	2.065825	4.83745	ug/L	2.065825	42.70%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-79.3	-6.48564	ug/L	4.648633	-6.48564	ug/L	4.648633	71.68%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	16.5	1.21519	ug/L	0.570471	1.21519	ug/L	0.570471	46.94%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	19.9	2.48420	ug/L	2.630285	2.48420	ug/L	2.630285	105.88%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	23.5	0.191081	ug/L	0.5575445	0.191081	ug/L	0.5575445	291.78%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	7.7	0.271054	ug/L	0.1055863	0.271054	ug/L	0.1055863	38.95%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-25.5	-0.216922	ug/L	0.2720911	-0.216922	ug/L	0.2720911	125.43%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	28.6	2.82855	ug/L	0.547343	2.82855	ug/L	0.547343	19.35%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374065.1 File : met08_sn_6010 Time : 04-AUG-2015 13:57
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.5343	5000	4567	ug/L	-9	10	
Manganese	A	1116.2	1040.2	5000	4842	ug/L	-3	10	
Iron	R	1.9603	1.5271	20000	16160	ug/L	**-19**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3728529	-3.05

-=low bias c=CCV

Sequence No.: 34 | **Autosampler Location: 217**
Sample ID: CCV,S27756 | **Date Collected: 8/4/2015 1:57:31 PM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**
Wash Time: 65 | **Auto Dilution Factor: 1**

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	145.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3728529.2	96.9505	%	0.26844				0.28%
Y	42151.2	95.4304	%	0.20543				0.22%
Ag 328.068†	1781962.4	957.729	ug/L	14.7913	957.729	ug/L	14.7913	1.54%
QC value within limits for Ag 328.068 Recovery = 95.77%								
Al 308.215 R†	7269.6	17304.0	ug/L	89.13	17304.0	ug/L	89.13	0.52%
QC value less than the lower limit for Al 308.215 R Recovery = 86.52%								
As 188.979†	37671.4	4566.90	ug/L	27.865	4566.90	ug/L	27.865	0.61%
QC value within limits for As 188.979 Recovery = 91.34%								
B 249.677†	556950.8	4823.20	ug/L	7.546	4823.20	ug/L	7.546	0.16%
QC value within limits for B 249.677 Recovery = 96.46%								
Ba 233.527†	1189087.3	4732.74	ug/L	11.036	4732.74	ug/L	11.036	0.23%
QC value within limits for Ba 233.527 Recovery = 94.65%								
Be 313.107†	1707493.8	499.983	ug/L	0.5443	499.983	ug/L	0.5443	0.11%
QC value within limits for Be 313.107 Recovery = 100.00%								
Ca 315.887 R†	34665.9	17775.1	ug/L	70.28	17775.1	ug/L	70.28	0.40%
QC value less than the lower limit for Ca 315.887 R Recovery = 88.88%								
Cd 214.440†	380752.8	4637.29	ug/L	95.551	4637.29	ug/L	95.551	2.06%
QC value within limits for Cd 214.440 Recovery = 92.75%								
Co 228.616†	325677.7	4573.93	ug/L	21.924	4573.93	ug/L	21.924	0.48%
QC value within limits for Co 228.616 Recovery = 91.48%								
Cr 267.716†	103643.1	4544.05	ug/L	143.673	4544.05	ug/L	143.673	3.16%
QC value within limits for Cr 267.716 Recovery = 90.88%								
Cu 324.752†	1578927.3	4767.73	ug/L	6.667	4767.73	ug/L	6.667	0.14%
QC value within limits for Cu 324.752 Recovery = 95.35%								
Fe 238.204 R†	30542.9	16163.9	ug/L	30.02	16163.9	ug/L	30.02	0.19%
QC value less than the lower limit for Fe 238.204 R Recovery = 80.82%								
K 766.490 R†	46912.1	19966.1	ug/L	398.72	19966.1	ug/L	398.72	2.00%
QC value within limits for K 766.490 R Recovery = 99.83%								
Mg 279.077 R†	5850.4	16792.7	ug/L	81.79	16792.7	ug/L	81.79	0.49%
QC value less than the lower limit for Mg 279.077 R Recovery = 83.96%								
Mn 257.610†	5200868.3	4841.67	ug/L	18.989	4841.67	ug/L	18.989	0.39%
QC value within limits for Mn 257.610 Recovery = 96.83%								
Mo 202.031†	61570.8	4412.43	ug/L	51.604	4412.43	ug/L	51.604	1.17%
QC value less than the lower limit for Mo 202.031 Recovery = 88.25%								
Na 589.592 R†	72698.6	21327.5	ug/L	525.59	21327.5	ug/L	525.59	2.46%
QC value within limits for Na 589.592 R Recovery = 106.64%								
Ni 231.604†	129499.5	4680.07	ug/L	48.805	4680.07	ug/L	48.805	1.04%
QC value within limits for Ni 231.604 Recovery = 93.60%								
Pb 220.353†	97637.4	4469.29	ug/L	34.373	4469.29	ug/L	34.373	0.77%
QC value less than the lower limit for Pb 220.353 Recovery = 89.39%								
Sb 206.836†	48745.3	4446.88	ug/L	60.370	4446.88	ug/L	60.370	1.36%
QC value less than the lower limit for Sb 206.836 Recovery = 88.94%								
Se 196.026†	54548.3	4459.09	ug/L	25.008	4459.09	ug/L	25.008	0.56%
QC value less than the lower limit for Se 196.026 Recovery = 89.18%								
Ti 334.940 R†	60859.9	4477.12	ug/L	12.416	4477.12	ug/L	12.416	0.28%
QC value less than the lower limit for Ti 334.940 R Recovery = 89.54%								
Tl 190.801†	34520.9	4301.54	ug/L	98.556	4301.54	ug/L	98.556	2.29%
QC value less than the lower limit for Tl 190.801 Recovery = 86.03%								
V 292.402†	606470.2	4934.70	ug/L	40.477	4934.70	ug/L	40.477	0.82%
QC value within limits for V 292.402 Recovery = 98.69%								
Zn 206.200†	125597.9	4433.81	ug/L	19.077	4433.81	ug/L	19.077	0.43%
QC value less than the lower limit for Zn 206.200 Recovery = 88.68%								
Sr 421.552 R†	55725.8	472.419	ug/L	9.2660	472.419	ug/L	9.2660	1.96%
QC value within limits for Sr 421.552 R Recovery = 94.48%								
Sn 189.927†	44792.5	4429.32	ug/L	21.396	4429.32	ug/L	21.396	0.48%
QC value less than the lower limit for Sn 189.927 Recovery = 88.59%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374066.1 File : met08_sn_6010 Time : 04-AUG-2015 14:05
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3862989	0.45

Sequence No.: 35
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 220
Date Collected: 8/4/2015 2:05:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	145.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3862989.3	100.447	%	0.5043				0.50%
Y	44029.6	99.6831	%	1.57729				1.58%
Ag 328.068†	-150.7	-0.0809812	ug/L	0.28751314	-0.0809812	ug/L	0.28751314	355.04%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	7.2	17.1207	ug/L	3.42628	17.1207	ug/L	3.42628	20.01%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	5.4	0.652671	ug/L	1.0880548	0.652671	ug/L	1.0880548	166.71%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	2303.6	19.9489	ug/L	0.89307	19.9489	ug/L	0.89307	4.48%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	50.7	0.201622	ug/L	0.0243698	0.201622	ug/L	0.0243698	12.09%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	161.8	0.0473735	ug/L	0.01051980	0.0473735	ug/L	0.01051980	22.21%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-8.3	-4.25034	ug/L	1.146186	-4.25034	ug/L	1.146186	26.97%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	27.9	0.339467	ug/L	0.0116864	0.339467	ug/L	0.0116864	3.44%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-48.9	-0.690051	ug/L	0.7369461	-0.690051	ug/L	0.7369461	106.80%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	8.7	0.381465	ug/L	0.3410063	0.381465	ug/L	0.3410063	89.39%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	141.1	0.426148	ug/L	0.0403113	0.426148	ug/L	0.0403113	9.46%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	7.3	3.87286	ug/L	0.467440	3.87286	ug/L	0.467440	12.07%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	710.7	302.484	ug/L	88.6934	302.484	ug/L	88.6934	29.32%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	6.5	18.6384	ug/L	4.36667	18.6384	ug/L	4.36667	23.43%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	410.0	0.381641	ug/L	0.0545145	0.381641	ug/L	0.0545145	14.28%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	8.3	0.591281	ug/L	0.2429425	0.591281	ug/L	0.2429425	41.09%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	2237.1	656.287	ug/L	23.7212	656.287	ug/L	23.7212	3.61%
QC value greater than the upper limit for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	17.7	0.640262	ug/L	0.2056034	0.640262	ug/L	0.2056034	32.11%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	15.0	0.685035	ug/L	0.6057702	0.685035	ug/L	0.6057702	88.43%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	44.5	4.06398	ug/L	1.065501	4.06398	ug/L	1.065501	26.22%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-40.7	-3.32777	ug/L	1.667153	-3.32777	ug/L	1.667153	50.10%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	16.6	1.22118	ug/L	0.691909	1.22118	ug/L	0.691909	56.66%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	8.7	1.08523	ug/L	1.782911	1.08523	ug/L	1.782911	164.29%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	31.8	0.258917	ug/L	0.2575430	0.258917	ug/L	0.2575430	99.47%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	6.0	0.210885	ug/L	0.0980975	0.210885	ug/L	0.0980975	46.52%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-24.2	-0.205965	ug/L	0.4119945	-0.205965	ug/L	0.4119945	200.03%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	24.8	2.44936	ug/L	0.943586	2.44936	ug/L	0.943586	38.52%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Retry.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 14:13	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 14:18	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 14:23	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 14:27	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 14:32	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 14:40	1.0	5	
007	met08_sn_6010	ICV				08/04/15 14:47	1.0	6	
008	met08_sn_6010	XCRI				08/04/15 14:54	1.0	7	
009	met08_sn_6010	CRI				08/04/15 15:05	1.0	7	
010	met08_sn_6010	ICB				08/04/15 15:13	1.0		
011	met08_sn_6010	ICSA				08/04/15 15:22	1.0	8	10:AL=560000
012	met08_sn_6010	ICSAB				08/04/15 15:47	1.0	9	5:AL=530000
013	met08_sn_6010	SAMPLE	268517-023	Miscell.	225698	08/04/15 15:54	1.0		6:CA=3500000
014	met08_sn_6010	X	RINSE			08/04/15 16:01	1.0		
015	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 16:06	1.0		
016	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 16:11	1.0		
017	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 16:16	1.0		
018	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 16:20	1.0		
019	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:24	100.0		
020	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:29	1.0		3:MG=590000
021	met08_sn_6010	X	RINSE			08/04/15 16:38	1.0		
022	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 16:43	1.0		3:MG=560000
023	met08_sn_6010	CCV				08/04/15 16:50	1.0	10	
024	met08_sn_6010	XCCB				08/04/15 16:58	1.0		
025	met08_sn_6010	CCB				08/04/15 17:02	1.0		
026	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 17:07	1.0		3:MG=560000
027	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 17:15	5.0		2:NA=890000
028	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 17:23	1.0	11 12 13	3:MG=600000
029	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 17:31	1.0		
030	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 17:36	1.0		5:K=380000
031	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 17:44	1.0		
032	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 17:49	1.0		
033	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 17:54	1.0		4:MG=660000
034	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/04/15 18:02	1.0		4:MG=670000
035	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/04/15 18:11	1.0		
036	met08_sn_6010	CCV				08/04/15 18:16	1.0	10	
037	met08_sn_6010	CCB				08/04/15 18:24	1.0		
038	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/04/15 18:29	1.0		
039	met08_sn_6010	?SAMPLE	269558-001		225705	08/04/15 18:34	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 18:43	1.0		
041	met08_sn_6010	BS	QC797841	Soil	225682	08/04/15 18:48	5.0		
042	met08_sn_6010	BSD	QC797842	Soil	225682	08/04/15 18:53	5.0		
043	met08_sn_6010	X	RINSE			08/04/15 18:58	1.0		
044	met08_sn_6010	BLANK	QC798020	Water	225732	08/04/15 19:03	1.0		
045	met08_sn_6010	BS	QC798021	Water	225732	08/04/15 19:08	1.0		
046	met08_sn_6010	BSD	QC798022	Water	225732	08/04/15 19:13	1.0		
047	met08_sn_6010	SAMPLE	268598-003	Water	225732	08/04/15 19:18	1000		
048	met08_sn_6010	CCV				08/04/15 19:23	1.0	10	
049	met08_sn_6010	CCB				08/04/15 19:31	1.0		
050	met08_sn_6010	SAMPLE	268598-004	Water	225732	08/04/15 19:36	1000		
051	met08_sn_6010	MSS	268602-001	Water	225732	08/04/15 19:41	1.0		
052	met08_sn_6010	CCV				08/04/15 19:46	1.0	10	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCB				08/04/15 19:54	1.0		

CRT 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 53.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS SPIKE USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Type : MSS	Type : MS	Type : MSD
Inst : MET08	Inst : MET08	Inst : MET08
Seqnum : 85309335058.1	Seqnum : 85311893022.3	Seqnum : 85311893026.1
File : met08_sn_6010	File : met08_sn_6010	File : met08_sn_6010
IDF : 1.0	IDF : 1.0	IDF : 1.0
Lab ID : 268557-001	Lab ID : QC797934	Lab ID : QC797935
Matrix : Filtrate	Matrix : Filtrate	Matrix : Filtrate
Batch : 225705	Batch : 225705	Batch : 225705
Time : 03-AUG-2015 00:57	Time : 04-AUG-2015 16:43	Time : 04-AUG-2015 17:07
Cal : 85309335001	Cal : 85311893001	Cal : 85311893001
Units : ug/L		

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
MSD: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Ch	Spiked	MS	Ch	%Rec	MSD	Ch	%Rec	Limits	RPD	Lim	Flags
Arsenic	13.31	A	100.0	112.1	A	99	112.6	A	99	80-120	0	20	
Iron	328.4	R	10000	10540	R	102	10200	R	99	80-120	3	20	u
Manganese	1970	A	100.0	1987	A	17	1980	A	10	80-120	0	20	:

ISTD (ICAL 002)	Ch	ICAL Abund	MS Abund	%Drift
Yttrium	A	3932246	2914238	-25.89

ISTD (ICAL 002)	Ch	ICAL Abund	MSD Abund	%Drift
Yttrium	A	3932246	2917291	-25.81

:=recovery not meaningful u=use

Sequence No.: 21
Sample ID: QC797934,225705,5
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 88
Date Collected: 8/4/2015 4:43:13 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: QC797934,225705,5

Analyte	Back Pressure	Flow
All	150.0 kPa	0.60 L/min

Mean Data: QC797934,225705,5

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2914237.5	74.1113	%	0.55160				0.74%
Y	38937.0	86.3649	%	0.43983				0.51%
Ag 328.068†	217860.3	114.584	ug/L	0.5941	114.584	ug/L	0.5941	0.52%
Al 308.215 R†	3658.3	9939.11	ug/L	91.570	9939.11	ug/L	91.570	0.92%
As 188.979†	882.9	112.059	ug/L	2.5012	112.059	ug/L	2.5012	2.23%
B 249.677†	380436.7	3275.75	ug/L	27.952	3275.75	ug/L	27.952	0.85%
Ba 233.527†	94038.9	378.145	ug/L	2.0810	378.145	ug/L	2.0810	0.55%
Be 313.107†	356835.6	102.874	ug/L	0.1368	102.874	ug/L	0.1368	0.13%
Ca 315.887 R†	503602.5	286597	ug/L	4082.99	286597	ug/L	4082.99	1.42%
Cd 214.440†	7384.0	93.4871	ug/L	1.81254	93.4871	ug/L	1.81254	1.94%
Co 228.616†	6403.0	91.1123	ug/L	0.46149	91.1123	ug/L	0.46149	0.51%
Cr 267.716†	2690.3	120.747	ug/L	3.7209	120.747	ug/L	3.7209	3.08%
Cu 324.752†	37290.6	109.663	ug/L	0.2516	109.663	ug/L	0.2516	0.23%
Fe 238.204 R†	16398.1	10540.4	ug/L	30.46	10540.4	ug/L	30.46	0.29%
K 766.490 R†	376117.1	148826	ug/L	2163.84	148826	ug/L	2163.84	1.45%
Mg 279.077 R†	165565.1	560334	ug/L	9532.87	560334	ug/L	9532.87	1.70%
Mn 257.610†	2190257.2	1986.86	ug/L	4.676	1986.86	ug/L	4.676	0.24%
Mo 202.031†	1476.1	113.956	ug/L	0.7238	113.956	ug/L	0.7238	0.64%
Na 589.592 R†	Saturated2							
Ni 231.604†	2500.0	91.0695	ug/L	1.17932	91.0695	ug/L	1.17932	1.29%
Pb 220.353†	1813.1	85.8701	ug/L	1.84115	85.8701	ug/L	1.84115	2.14%
Sb 206.836†	1138.9	108.942	ug/L	3.2355	108.942	ug/L	3.2355	2.97%
Se 196.026†	1473.8	128.154	ug/L	8.6745	128.154	ug/L	8.6745	6.77%
Ti 334.940 R†	12325.0	938.710	ug/L	6.7467	938.710	ug/L	6.7467	0.72%
Tl 190.801†	278.4	38.5255	ug/L	2.67231	38.5255	ug/L	2.67231	6.94%
V 292.402†	12471.2	98.8461	ug/L	1.45068	98.8461	ug/L	1.45068	1.47%
Zn 206.200†	2685.7	102.211	ug/L	0.8597	102.211	ug/L	0.8597	0.84%
Sr 421.552 R†	557535.9	4684.74	ug/L	70.350	4684.74	ug/L	70.350	1.50%
Sn 189.927†	8833.8	918.414	ug/L	1.2596	918.414	ug/L	1.2596	0.14%

Sequence No.: 25
Sample ID: QC797935,225705,5
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 89
Date Collected: 8/4/2015 5:07:35 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: QC797935,225705,5

Analyte	Back Pressure	Flow
All	149.0 kPa	0.60 L/min

Mean Data: QC797935,225705,5

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2917290.8	74.1889	%	0.07878				0.11%
Y	37741.1	83.7123	%	0.86481				1.03%
Ag 328.068†	218190.6	114.758	ug/L	1.3775	114.758	ug/L	1.3775	1.20%
Al 308.215 R†	3471.3	9431.01	ug/L	83.869	9431.01	ug/L	83.869	0.89%
As 188.979†	886.8	112.553	ug/L	3.7184	112.553	ug/L	3.7184	3.30%
B 249.677†	380743.3	3278.39	ug/L	23.203	3278.39	ug/L	23.203	0.71%
Ba 233.527†	93380.6	375.497	ug/L	0.7477	375.497	ug/L	0.7477	0.20%
Be 313.107†	351509.2	101.338	ug/L	0.1585	101.338	ug/L	0.1585	0.16%
Ca 315.887 R†	498035.1	283429	ug/L	5564.89	283429	ug/L	5564.89	1.96%
Cd 214.440†	7277.8	92.1416	ug/L	2.21420	92.1416	ug/L	2.21420	2.40%
Co 228.616†	6400.1	91.1334	ug/L	0.91160	91.1334	ug/L	0.91160	1.00%
Cr 267.716†	2654.5	119.138	ug/L	3.2291	119.138	ug/L	3.2291	2.71%
Cu 324.752†	36900.1	108.514	ug/L	0.2823	108.514	ug/L	0.2823	0.26%
Fe 238.204 R†	15871.9	10202.2	ug/L	26.28	10202.2	ug/L	26.28	0.26%
K 766.490 R†	386584.3	152968	ug/L	2990.87	152968	ug/L	2990.87	1.96%
Mg 279.077 R†	165393.3	559753	ug/L	9411.95	559753	ug/L	9411.95	1.68%
Mn 257.610†	2182284.1	1979.63	ug/L	2.276	1979.63	ug/L	2.276	0.11%
Mo 202.031†	1455.6	112.373	ug/L	0.8953	112.373	ug/L	0.8953	0.80%
Na 589.592 R†	Saturated2							
Ni 231.604†	2462.7	89.7102	ug/L	1.75693	89.7102	ug/L	1.75693	1.96%
Pb 220.353†	1772.8	83.9606	ug/L	1.18374	83.9606	ug/L	1.18374	1.41%
Sb 206.836†	1111.5	106.314	ug/L	3.0746	106.314	ug/L	3.0746	2.89%
Se 196.026†	1353.5	117.694	ug/L	2.7511	117.694	ug/L	2.7511	2.34%
Ti 334.940 R†	11865.4	903.706	ug/L	2.9646	903.706	ug/L	2.9646	0.33%
Tl 190.801†	280.0	38.7519	ug/L	1.69363	38.7519	ug/L	1.69363	4.37%
V 292.402†	12338.9	97.7976	ug/L	1.83595	97.7976	ug/L	1.83595	1.88%
Zn 206.200†	2638.4	100.412	ug/L	1.2282	100.412	ug/L	1.2282	1.22%
Sr 421.552 R†	560774.0	4711.95	ug/L	92.562	4711.95	ug/L	92.562	1.96%
Sn 189.927†	8683.7	902.805	ug/L	4.7730	902.805	ug/L	4.7730	0.53%

CURTIS & TOMPKINS SERIAL DILUTION FOR 268557 METALS Filtrate
EPA 6010C

Type : MSS
Inst : MET08
Seqnum : 85309335058.1
File : met08_sn_6010
IDF : 1.0
Lab ID : 268557-001
Matrix : Filtrate
Batch : 225705
Time : 03-AUG-2015 00:57
Cal : 85309335001
Units : ug/L

Type : SER
Inst : MET08
Seqnum : 85311893027.5
File : met08_sn_6010
IDF : 5.0
Lab ID : QC797936
Matrix : Filtrate
Batch : 225705
Time : 04-AUG-2015 17:15
Cal : 85311893001

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
SER: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS	Ch	RL	SER	Ch	RL	%D	Lim	Flags
Arsenic	13.31	A	5.000	ND	A	25.00		10	
Iron	328.4	R	100.0	481.0 J	R	500.0		10	u
Manganese	1970	A	5.000	1966	A	25.00	0	10	

ISTD (ICAL 002)	Ch	ICAL Abund	SER Abund	%Drift
Yttrium	A	3932246	3300017	-16.08

u=use

Sequence No.: 26
Sample ID: QC797936,225705,5
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 90
Date Collected: 8/4/2015 5:15:12 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: QC797936,225705,5

Analyte	Back Pressure	Flow
All	151.0 kPa	0.60 L/min

Mean Data: QC797936,225705,5

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3300016.7	83.9219	%	0.98644				1.18%
Y	39538.3	87.6985	%	0.14569				0.17%
Ag 328.068†	3716.3	1.95458	ug/L	0.656195	1.95458	ug/L	0.656195	33.57%
Al 308.215 R†	-5.0	-13.4715	ug/L	29.89536	-13.4715	ug/L	29.89536	221.92%
As 188.979†	-53.9	-6.84528	ug/L	1.907480	-6.84528	ug/L	1.907480	27.87%
B 249.677†	52874.0	455.271	ug/L	5.0410	455.271	ug/L	5.0410	1.11%
Ba 233.527†	14614.8	58.7685	ug/L	0.99211	58.7685	ug/L	0.99211	1.69%
Be 313.107†	-586.3	-0.169017	ug/L	0.0300394	-0.169017	ug/L	0.0300394	17.77%
Ca 315.887 R†	106796.4	60777.2	ug/L	772.01	60777.2	ug/L	772.01	1.27%
Cd 214.440†	-94.8	-1.20056	ug/L	0.056015	-1.20056	ug/L	0.056015	4.67%
Co 228.616†	-271.3	-3.93275	ug/L	0.493621	-3.93275	ug/L	0.493621	12.55%
Cr 267.716†	159.0	7.13666	ug/L	0.681511	7.13666	ug/L	0.681511	9.55%
Cu 324.752†	485.8	1.42864	ug/L	0.509802	1.42864	ug/L	0.509802	35.68%
Fe 238.204 R†	149.7	96.2022	ug/L	1.75912	96.2022	ug/L	1.75912	1.83%
K 766.490 R†	64468.5	25509.7	ug/L	406.83	25509.7	ug/L	406.83	1.59%
Mg 279.077 R†	36015.3	121889	ug/L	3819.88	121889	ug/L	3819.88	3.13%
Mn 257.610†	433406.3	393.158	ug/L	2.5214	393.158	ug/L	2.5214	0.64%
Mo 202.031†	77.1	5.94855	ug/L	0.406782	5.94855	ug/L	0.406782	6.84%
Na 589.592 R†	3255402.4	886542	ug/L	10761.30	886542	ug/L	10761.30	1.21%
Ni 231.604†	-23.3	-0.848287	ug/L	0.4375592	-0.848287	ug/L	0.4375592	51.58%
Pb 220.353†	-64.2	-3.03988	ug/L	0.657191	-3.03988	ug/L	0.657191	21.62%
Sb 206.836†	-9.9	-0.948939	ug/L	3.1797173	-0.948939	ug/L	3.1797173	335.08%
Se 196.026†	-74.0	-6.43689	ug/L	3.482728	-6.43689	ug/L	3.482728	54.11%
Ti 334.940 R†	6.1	0.463711	ug/L	1.0698185	0.463711	ug/L	1.0698185	230.71%
Tl 190.801†	-26.5	-3.66698	ug/L	2.617722	-3.66698	ug/L	2.617722	71.39%
V 292.402†	-73.2	-0.579873	ug/L	0.1138309	-0.579873	ug/L	0.1138309	19.63%
Zn 206.200†	19.5	0.740860	ug/L	0.0635876	0.740860	ug/L	0.0635876	8.58%
Sr 421.552 R†	113126.8	950.621	ug/L	14.7516	950.621	ug/L	14.7516	1.55%
Sn 189.927†	-57.2	-5.94680	ug/L	0.120377	-5.94680	ug/L	0.120377	2.02%

CURTIS & TOMPKINS POST DIGEST SPIKE USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Type : MSS
Inst : MET08
Seqnum : 85309335058.1
File : met08_sn_6010
IDF : 1.0
Lab ID : 268557-001
Matrix : Filtrate
Batch : 225705
Time : 03-AUG-2015 00:57
Cal : 85309335001
Units : ug/L

Type : PDS
Inst : MET08
Seqnum : 85311893028.5
File : met08_sn_6010
IDF : 1.0
Lab ID : QC797937
Matrix : Filtrate
Batch : 225705
Time : 04-AUG-2015 17:23
Cal : 85311893001

MSS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF
PDS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

PDS standards: S26229 (100X), S26230 (100X), S27470 (100X)

Analyte	MSS	Ch	Spiked	PDS	Ch	%Rec	Limits	Flags
Arsenic	13.31	A	100.0	116.9	A	104	75-125	
Iron	328.4	R	10000	12130	R	118	75-125	u
Manganese	1970	A	100.0	1987	A	17	75-125	:

ISTD (ICAL 002)	Ch	ICAL Abund	PDS Abund	%Drift
Yttrium	A	3932246	2894907	-26.38

:=recovery not meaningful u=use

Sequence No.: 27
Sample ID: QC797937,225705,1,S26229
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 91
Date Collected: 8/4/2015 5:23:48 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: QC797937,225705,1,S26229

Analyte	Back Pressure	Flow
All	150.0 kPa	0.60 L/min

Mean Data: QC797937,225705,1,S26229

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2894906.7	73.6197	%	1.57944				2.15%
Y	37287.6	82.7064	%	0.88769				1.07%
Ag 328.068†	218355.4	114.844	ug/L	0.7151	114.844	ug/L	0.7151	0.62%
Al 308.215 R†	4130.2	11221.1	ug/L	27.81	11221.1	ug/L	27.81	0.25%
As 188.979†	921.3	116.936	ug/L	1.4919	116.936	ug/L	1.4919	1.28%
B 249.677†	385587.7	3320.10	ug/L	29.287	3320.10	ug/L	29.287	0.88%
Ba 233.527†	94661.3	380.648	ug/L	2.1335	380.648	ug/L	2.1335	0.56%
Be 313.107†	376127.7	108.436	ug/L	0.4020	108.436	ug/L	0.4020	0.37%
Ca 315.887 R†	547759.6	311727	ug/L	3358.02	311727	ug/L	3358.02	1.08%
Cd 214.440†	7555.5	95.6578	ug/L	0.23034	95.6578	ug/L	0.23034	0.24%
Co 228.616†	6717.2	95.4985	ug/L	0.88641	95.4985	ug/L	0.88641	0.93%
Cr 267.716†	2757.6	123.765	ug/L	5.5696	123.765	ug/L	5.5696	4.50%
Cu 324.752†	39450.3	116.014	ug/L	0.3725	116.014	ug/L	0.3725	0.32%
Fe 238.204 R†	18878.0	12134.4	ug/L	20.88	12134.4	ug/L	20.88	0.17%
K 766.490 R†	402649.5	159325	ug/L	2118.40	159325	ug/L	2118.40	1.33%
Mg 279.077 R†	176940.6	598834	ug/L	6251.94	598834	ug/L	6251.94	1.04%
Mn 257.610†	2190508.6	1987.09	ug/L	5.904	1987.09	ug/L	5.904	0.30%
Mo 202.031†	1431.0	110.480	ug/L	0.8454	110.480	ug/L	0.8454	0.77%
Na 589.592 R†	Saturated2							
Ni 231.604†	2588.5	94.2920	ug/L	0.35638	94.2920	ug/L	0.35638	0.38%
Pb 220.353†	1834.6	86.8908	ug/L	2.70898	86.8908	ug/L	2.70898	3.12%
Sb 206.836†	1127.4	107.835	ug/L	2.2912	107.835	ug/L	2.2912	2.12%
Se 196.026†	1308.6	113.789	ug/L	0.7277	113.789	ug/L	0.7277	0.64%
Ti 334.940 R†	13548.3	1031.88	ug/L	5.720	1031.88	ug/L	5.720	0.55%
Tl 190.801†	303.7	42.0292	ug/L	0.58943	42.0292	ug/L	0.58943	1.40%
V 292.402†	13155.3	104.268	ug/L	0.7155	104.268	ug/L	0.7155	0.69%
Zn 206.200†	2759.8	105.029	ug/L	1.1040	105.029	ug/L	1.1040	1.05%
Sr 421.552 R†	591628.0	4971.19	ug/L	60.704	4971.19	ug/L	60.704	1.22%
Sn 189.927†	8710.7	905.615	ug/L	15.5132	905.615	ug/L	15.5132	1.71%

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85311893001
Units : ug/L

Date : 04-AUG-2015 14:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311893002	L1	04-AUG-2015 14:18	S27752
L2	met08_sn_6010	85311893003	L2	04-AUG-2015 14:23	S27753
L3	met08_sn_6010	85311893004	L3	04-AUG-2015 14:27	S27754
L4	met08_sn_6010	85311893005	L4	04-AUG-2015 14:32	S27755
L5	met08_sn_6010	85311893006	L5	04-AUG-2015 14:40	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	5.7600	7.6920	7.5803	7.8817		LOR0	0.00000	0.12693		7.2285	1.000	0.995	
Manganese	A	1036.8	1152.3	1107.8	1102.3		LOR0	0.00000	9.07E-4		1099.8	1.000	0.995	
Iron	R	1.7020		1.7049	1.5924	1.5554	LOR0	0.00000	0.64278		1.6387	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	**-27**	100.00	-2	1000.0	-4	10000	0		
Manganese	A	5.0000	-6	100.00	5	1000.0	0	10000	0		
Iron	R	100.00	9			1000.0	10	10000	2	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311893001 Cal Date : 04-AUG-2015

ICV 85311893007 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5012	ug/L	0	10	
Manganese	A	5000	4942	ug/L	-1	10	
Iron	R	20000	20670	ug/L	3	10	

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 1
Date Collected: 8/4/2015 2:13:32 PM
Data Type: Reprocessed on 8/4/2015 3:45:54 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICALBLK,

Analyte	Back Pressure	Flow
All	145.0 kPa	0.60 L/min

Mean Data: ICALBLK,

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Ag 328.068	7570.6	573.61	7.58%	[0.00]	ug/L
Al 308.215 R	9.5	4.18	43.86%	[0.00]	ug/L
As 188.979	28.9	2.93	10.15%	[0.00]	ug/L
B 249.677	1303.6	16.78	1.29%	[0.00]	ug/L
Ba 233.527	97.7	6.77	6.93%	[0.00]	ug/L
Be 313.107	244.7	14.97	6.12%	[0.00]	ug/L
Ca 315.887 R	-66.5	4.00	6.02%	[0.00]	ug/L
Cd 214.440	19.0	4.10	21.58%	[0.00]	ug/L
Co 228.616	-374.1	17.22	4.60%	[0.00]	ug/L
Cr 267.716	-30.0	2.75	9.17%	[0.00]	ug/L
Cu 324.752	2549.2	111.37	4.37%	[0.00]	ug/L
Fe 238.204 R	77.5	1.69	2.19%	[0.00]	ug/L
K 766.490 R	1601.7	185.21	11.56%	[0.00]	ug/L
Mg 279.077 R	38.1	4.41	11.57%	[0.00]	ug/L
Mn 257.610	1875.4	23.78	1.27%	[0.00]	ug/L
Mo 202.031	14.1	3.86	27.35%	[0.00]	ug/L
Na 589.592 R	1282.8	12.64	0.99%	[0.00]	ug/L
Ni 231.604	-70.1	4.01	5.72%	[0.00]	ug/L
Pb 220.353	42.5	21.38	50.33%	[0.00]	ug/L
Sb 206.836	51.0	23.07	45.28%	[0.00]	ug/L
Se 196.026	-50.2	38.47	76.66%	[0.00]	ug/L
Ti 334.940 R	-2.8	3.49	124.13%	[0.00]	ug/L
Tl 190.801	18.7	17.43	92.95%	[0.00]	ug/L
V 292.402	31.4	71.16	226.42%	[0.00]	ug/L
Zn 206.200	16.0	1.48	9.22%	[0.00]	ug/L
Sr 421.552 R	62.5	40.84	65.32%	[0.00]	ug/L
Sn 189.927	-0.3	1.48	547.50%	[0.00]	ug/L

Sequence No.: 2
Sample ID: ICAL,L1,S27752,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 2
Date Collected: 8/4/2015 2:18:31 PM
Data Type: Reprocessed on 8/4/2015 3:45:55 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L1,S27752,1

Analyte	Back Pressure	Flow
All	145.0 kPa	0.60 L/min

Mean Data: ICAL,L1,S27752,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3932246.3	53089.67	1.35%	100.000	%
Y	45084.3	310.05	0.69%	100.000	%
Ag 328.068†	8750.1	693.67	7.93%	[5]	ug/L
Al 308.215 R†	48.7	8.61	17.67%	[100]	ug/L
As 188.979†	28.8	22.45	77.94%	[5]	ug/L
B 249.677†	11020.3	226.97	2.06%	[100]	ug/L
Ba 233.527†	1263.3	25.00	1.98%	[5]	ug/L
Be 313.107†	7222.8	168.77	2.34%	[2]	ug/L
Ca 315.887 R†	378.1	9.33	2.47%	[200]	ug/L
Cd 214.440†	389.5	5.76	1.48%	[5]	ug/L
Co 228.616†	229.9	40.25	17.51%	[5]	ug/L
Cr 267.716†	109.6	1.79	1.63%	[5]	ug/L
Cu 324.752†	1489.6	83.78	5.62%	[5]	ug/L
Fe 238.204 R†	170.2	2.16	1.27%	[100]	ug/L
K 766.490 R†	1064.1	343.94	32.32%	[500]	ug/L
Mg 279.077 R†	61.7	1.58	2.57%	[200]	ug/L
Mn 257.610†	5184.1	110.56	2.13%	[5]	ug/L
Mo 202.031†	63.8	5.41	8.48%	[5]	ug/L
Na 589.592 R†	2108.5	116.58	5.53%	[500]	ug/L
Ni 231.604†	123.4	3.39	2.75%	[5]	ug/L
Pb 220.353†	111.5	13.76	12.34%	[5]	ug/L
Sb 206.836†	92.0	24.54	26.69%	[10]	ug/L
Se 196.026†	80.7	40.68	50.42%	[10]	ug/L
Ti 334.940 R†	133.0	1.11	0.83%	[10]	ug/L
Tl 190.801†	66.5	10.78	16.21%	[10]	ug/L
V 292.402†	562.4	45.45	8.08%	[5]	ug/L
Zn 206.200†	553.7	10.24	1.85%	[20]	ug/L
Sr 421.552 R†	566.8	43.61	7.69%	[5]	ug/L
Sn 189.927†	381.2	12.74	3.34%	[40]	ug/L

Sequence No.: 3
Sample ID: ICAL,L2,S27753,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 3
Date Collected: 8/4/2015 2:23:34 PM
Data Type: Reprocessed on 8/4/2015 3:45:56 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L2,S27753,1

Analyte	Back Pressure	Flow
All	144.0 kPa	0.60 L/min

Mean Data: ICAL,L2,S27753,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3907773.5	58407.85	1.49%	99.3776	%
Y	44047.4	220.13	0.50%	97.7001	%
Ag 328.068†	38259.1	1447.51	3.78%	[20]	ug/L
As 188.979†	769.2	10.54	1.37%	[100]	ug/L
Ba 233.527†	25843.2	56.80	0.22%	[100]	ug/L
Be 313.107†	352516.7	1695.23	0.48%	[100]	ug/L
Cd 214.440†	7976.7	123.52	1.55%	[100]	ug/L
Co 228.616†	6765.6	50.66	0.75%	[100]	ug/L
Cr 267.716†	2210.1	140.26	6.35%	[100]	ug/L
Cu 324.752†	32631.3	157.75	0.48%	[100]	ug/L
Mn 257.610†	115230.4	437.37	0.38%	[100]	ug/L
Mo 202.031†	1281.8	16.57	1.29%	[100]	ug/L
Ni 231.604†	2675.5	26.90	1.01%	[100]	ug/L
Pb 220.353†	2137.7	30.84	1.44%	[100]	ug/L
Sb 206.836†	1024.4	35.13	3.43%	[100]	ug/L
Se 196.026†	1079.2	27.41	2.54%	[100]	ug/L
Ti 334.940 R†	1250.6	37.89	3.03%	[100]	ug/L
Tl 190.801†	726.9	17.79	2.45%	[100]	ug/L
V 292.402†	12617.0	122.91	0.97%	[100]	ug/L
Zn 206.200†	2636.1	39.58	1.50%	[100]	ug/L
Sr 421.552 R†	11671.0	93.12	0.80%	[100]	ug/L
Sn 189.927†	954.0	14.40	1.51%	[100]	ug/L

Sequence No.: 4
Sample ID: ICAL,L3,S27754,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 4
Date Collected: 8/4/2015 2:27:38 PM
Data Type: Reprocessed on 8/4/2015 3:45:56 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L3,S27754,1

Analyte	Back Pressure	Flow
All	143.0 kPa	0.60 L/min

Mean Data: ICAL,L3,S27754,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3922460.3	20887.95	0.53%	99.7511	%
Y	44307.6	371.30	0.84%	98.2771	%
Ag 328.068†	373595.3	3208.69	0.86%	[200]	ug/L
Al 308.215 R†	407.6	0.56	0.14%	[1000]	ug/L
As 188.979†	7580.3	53.98	0.71%	[1000]	ug/L
B 249.677†	112256.9	1554.51	1.38%	[1000]	ug/L
Ba 233.527†	249356.7	2913.01	1.17%	[1000]	ug/L
Be 313.107†	3468105.5	6337.40	0.18%	[1000]	ug/L
Ca 315.887 R†	1901.9	5.79	0.30%	[1000]	ug/L
Cd 214.440†	77500.1	546.96	0.71%	[1000]	ug/L
Co 228.616†	69069.6	683.66	0.99%	[1000]	ug/L
Cr 267.716†	23393.6	597.10	2.55%	[1000]	ug/L
Cu 324.752†	328296.5	536.56	0.16%	[1000]	ug/L
Fe 238.204 R†	1704.9	14.40	0.84%	[1000]	ug/L
K 766.490 R†	1687.2	214.70	12.72%	[1000]	ug/L
Mg 279.077 R†	322.0	6.26	1.94%	[1000]	ug/L
Mn 257.610†	1107795.8	3675.21	0.33%	[1000]	ug/L
Mo 202.031†	12492.6	83.49	0.67%	[1000]	ug/L
Na 589.592 R†	4555.6	662.83	14.55%	[1000]	ug/L
Ni 231.604†	27127.6	116.20	0.43%	[1000]	ug/L
Pb 220.353†	20604.2	132.19	0.64%	[1000]	ug/L
Sb 206.836†	9888.1	57.34	0.58%	[1000]	ug/L
Se 196.026†	11048.6	115.00	1.04%	[1000]	ug/L
Ti 334.940 R†	13489.4	74.05	0.55%	[1000]	ug/L
Tl 190.801†	7197.9	39.58	0.55%	[1000]	ug/L
V 292.402†	122082.8	1346.73	1.10%	[1000]	ug/L
Zn 206.200†	25839.8	278.95	1.08%	[1000]	ug/L
Sr 421.552 R†	121594.2	1240.27	1.02%	[1000]	ug/L
Sn 189.927†	9384.7	68.90	0.73%	[1000]	ug/L

Sequence No.: 5
Sample ID: ICAL,L4,S27755,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 5
Date Collected: 8/4/2015 2:32:45 PM
Data Type: Reprocessed on 8/4/2015 3:45:57 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L4,S27755,1

Analyte	Back Pressure	Flow
All	144.0 kPa	0.60 L/min

Mean Data: ICAL,L4,S27755,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3724685.4	13458.62	0.36%	94.7216	%
Y	41949.3	257.40	0.61%	93.0463	%
Ag 328.068†	3803294.6	26387.73	0.69%	[2000]	ug/L
Al 308.215 R†	3815.1	23.92	0.63%	[10000]	ug/L
As 188.979†	78816.7	921.74	1.17%	[10000]	ug/L
B 249.677†	1161767.4	5048.28	0.43%	[10000]	ug/L
Ba 233.527†	2486773.1	7973.23	0.32%	[10000]	ug/L
Ca 315.887 R†	18347.8	72.63	0.40%	[10000]	ug/L
Cd 214.440†	789991.8	15257.48	1.93%	[10000]	ug/L
Co 228.616†	689961.5	2032.86	0.29%	[10000]	ug/L
Cr 267.716†	222697.1	9682.29	4.35%	[10000]	ug/L
Cu 324.752†	3401674.9	70366.16	2.07%	[10000]	ug/L
Fe 238.204 R†	15924.2	83.20	0.52%	[10000]	ug/L
K 766.490 R†	24602.5	278.50	1.13%	[10000]	ug/L
Mg 279.077 R†	3066.2	40.77	1.33%	[10000]	ug/L
Mn 257.610†	11023115.6	266458.90	2.42%	[10000]	ug/L
Mo 202.031†	129575.4	1187.56	0.92%	[10000]	ug/L
Na 589.592 R†	38192.6	332.48	0.87%	[10000]	ug/L
Ni 231.604†	274552.1	2665.15	0.97%	[10000]	ug/L
Pb 220.353†	211191.6	1275.66	0.60%	[10000]	ug/L
Sb 206.836†	104601.4	2272.61	2.17%	[10000]	ug/L
Se 196.026†	115049.6	562.28	0.49%	[10000]	ug/L
Ti 334.940 R†	131262.0	772.58	0.59%	[10000]	ug/L
Tl 190.801†	72267.2	452.44	0.63%	[10000]	ug/L
V 292.402†	1262085.6	16886.95	1.34%	[10000]	ug/L
Zn 206.200†	262806.4	572.11	0.22%	[10000]	ug/L
Sr 421.552 R†	1189927.2	11146.79	0.94%	[10000]	ug/L
Sn 189.927†	96209.0	265.00	0.28%	[10000]	ug/L

Sequence No.: 6
Sample ID: ICAL,L5,S27758,1
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 6
Date Collected: 8/4/2015 2:40:29 PM
Data Type: Reprocessed on 8/4/2015 3:45:58 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L5,S27758,1

Analyte	Back Pressure	Flow
All	144.0 kPa	0.60 L/min

Mean Data: ICAL,L5,S27758,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3493734.7	8554.25	0.24%	88.8483	%
Y	40910.9	518.47	1.27%	90.7430	%
Al 308.215 R†	36793.5	144.63	0.39%	[100000]	ug/L
Ca 315.887 R†	175638.8	540.97	0.31%	[100000]	ug/L
Fe 238.204 R†	155535.5	184.14	0.12%	[100000]	ug/L
K 766.490 R†	252798.4	1682.66	0.67%	[100000]	ug/L
Mg 279.077 R†	29536.1	138.35	0.47%	[100000]	ug/L
Na 589.592 R†	367044.7	4547.01	1.24%	[100000]	ug/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 328.068	4	Lin Thru 0	0.0	1901	0.00000	0.999998	
Al 308.215 R	4	Lin Thru 0	0.0	0.3681	0.00000	0.999993	
As 188.979	4	Lin Thru 0	0.0	7.879	0.00000	0.999993	
B 249.677	3	Lin Thru 0	0.0	116.1	0.00000	0.999994	
Ba 233.527	4	Lin Thru 0	0.0	248.7	0.00000	1.000000	
Be 313.107	3	Lin Thru 0	0.0	3469	0.00000	0.999999	
Ca 315.887 R	4	Lin Thru 0	0.0	1.757	0.00000	0.999990	
Cd 214.440	4	Lin Thru 0	0.0	78.98	0.00000	0.999998	
Co 228.616	4	Lin Thru 0	0.0	69.00	0.00000	1.000000	
Cr 267.716	4	Lin Thru 0	0.0	22.28	0.00000	0.999988	
Cu 324.752	4	Lin Thru 0	0.0	340.0	0.00000	0.999994	
Fe 238.204 R	4	Lin Thru 0	0.0	1.556	0.00000	0.999997	
K 766.490 R	4	Lin Thru 0	0.0	2.527	0.00000	0.999991	
Mg 279.077 R	4	Lin Thru 0	0.0	0.2955	0.00000	0.999992	
Mn 257.610	4	Lin Thru 0	0.0	1102	0.00000	1.000000	
Mo 202.031	4	Lin Thru 0	0.0	12.95	0.00000	0.999994	
Na 589.592 R	4	Lin Thru 0	0.0	3.672	0.00000	0.999989	
Ni 231.604	4	Lin Thru 0	0.0	27.45	0.00000	0.999999	
Pb 220.353	4	Lin Thru 0	0.0	21.11	0.00000	0.999997	
Sb 206.836	4	Lin Thru 0	0.0	10.45	0.00000	0.999985	
Se 196.026	4	Lin Thru 0	0.0	11.50	0.00000	0.999992	
Ti 334.940 R	4	Lin Thru 0	0.0	13.13	0.00000	0.999996	
Tl 190.801	4	Lin Thru 0	0.0	7.226	0.00000	1.000000	
V 292.402	4	Lin Thru 0	0.0	126.2	0.00000	0.999995	
Zn 206.200	4	Lin Thru 0	0.0	26.28	0.00000	0.999999	
Sr 421.552 R	4	Lin Thru 0	0.0	119.0	0.00000	0.999998	
Sn 189.927	4	Lin Thru 0	0.0	9.619	0.00000	0.999997	

Sequence No.: 7
Sample ID: ICV,S27757
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 8
Date Collected: 8/4/2015 2:47:06 PM
Data Type: Reprocessed on 8/4/2015 3:45:58 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICV,S27757

Analyte	Back Pressure	Flow
All	144.0 kPa	0.60 L/min

Mean Data: ICV,S27757

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3745605.9	95.2536	%	0.82771				0.87%
Y	42766.6	94.8592	%	0.50623				0.53%
Ag 328.068†	1860964.4	978.778	ug/L	32.4246	978.778	ug/L	32.4246	3.31%
QC value within limits for Ag 328.068 Recovery = 97.88%								
Al 308.215 R†	7561.1	20542.4	ug/L	62.53	20542.4	ug/L	62.53	0.30%
QC value within limits for Al 308.215 R Recovery = 102.71%								
As 188.979†	39488.8	5012.11	ug/L	73.409	5012.11	ug/L	73.409	1.46%
QC value within limits for As 188.979 Recovery = 100.24%								
B 249.677†	587060.9	5054.88	ug/L	138.353	5054.88	ug/L	138.353	2.74%
QC value within limits for B 249.677 Recovery = 101.10%								
Ba 233.527†	1240148.5	4986.82	ug/L	4.167	4986.82	ug/L	4.167	0.08%
QC value within limits for Ba 233.527 Recovery = 99.74%								
Be 313.107†	1787801.5	515.414	ug/L	1.1830	515.414	ug/L	1.1830	0.23%
QC value within limits for Be 313.107 Recovery = 103.08%								
Ca 315.887 R†	36567.0	20810.0	ug/L	39.16	20810.0	ug/L	39.16	0.19%
QC value within limits for Ca 315.887 R Recovery = 104.05%								
Cd 214.440†	404564.0	5122.07	ug/L	209.295	5122.07	ug/L	209.295	4.09%
QC value within limits for Cd 214.440 Recovery = 102.44%								
Co 228.616†	342365.4	4953.27	ug/L	127.271	4953.27	ug/L	127.271	2.57%
QC value within limits for Co 228.616 Recovery = 99.07%								
Cr 267.716†	108039.9	4849.01	ug/L	173.229	4849.01	ug/L	173.229	3.57%
QC value within limits for Cr 267.716 Recovery = 96.98%								
Cu 324.752†	1652172.2	4858.64	ug/L	3.835	4858.64	ug/L	3.835	0.08%
QC value within limits for Cu 324.752 Recovery = 97.17%								
Fe 238.204 R†	32162.7	20673.6	ug/L	37.07	20673.6	ug/L	37.07	0.18%
QC value within limits for Fe 238.204 R Recovery = 103.37%								
K 766.490 R†	48161.8	19057.2	ug/L	100.49	19057.2	ug/L	100.49	0.53%
QC value within limits for K 766.490 R Recovery = 95.29%								
Mg 279.077 R†	6173.2	20892.5	ug/L	169.45	20892.5	ug/L	169.45	0.81%
QC value within limits for Mg 279.077 R Recovery = 104.46%								
Mn 257.610†	5447746.4	4941.85	ug/L	13.007	4941.85	ug/L	13.007	0.26%
QC value within limits for Mn 257.610 Recovery = 98.84%								
Mo 202.031†	65085.3	5024.76	ug/L	151.128	5024.76	ug/L	151.128	3.01%
QC value within limits for Mo 202.031 Recovery = 100.50%								
Na 589.592 R†	75168.8	20470.7	ug/L	55.06	20470.7	ug/L	55.06	0.27%
QC value within limits for Na 589.592 R Recovery = 102.35%								
Ni 231.604†	136049.7	4955.93	ug/L	168.757	4955.93	ug/L	168.757	3.41%
QC value within limits for Ni 231.604 Recovery = 99.12%								
Pb 220.353†	104015.9	4926.37	ug/L	137.804	4926.37	ug/L	137.804	2.80%
QC value within limits for Pb 220.353 Recovery = 98.53%								
Sb 206.836†	51654.4	4940.89	ug/L	120.436	4940.89	ug/L	120.436	2.44%
QC value within limits for Sb 206.836 Recovery = 98.82%								
Se 196.026†	57109.1	4965.85	ug/L	42.091	4965.85	ug/L	42.091	0.85%
QC value within limits for Se 196.026 Recovery = 99.32%								
Ti 334.940 R†	64088.0	4881.13	ug/L	6.415	4881.13	ug/L	6.415	0.13%
QC value within limits for Ti 334.940 R Recovery = 97.62%								
Tl 190.801†	35862.5	4962.69	ug/L	57.565	4962.69	ug/L	57.565	1.16%
QC value within limits for Tl 190.801 Recovery = 99.25%								
V 292.402†	629173.4	4986.80	ug/L	56.156	4986.80	ug/L	56.156	1.13%
QC value within limits for V 292.402 Recovery = 99.74%								
Zn 206.200†	133563.4	5083.04	ug/L	139.978	5083.04	ug/L	139.978	2.75%
QC value within limits for Zn 206.200 Recovery = 101.66%								
Sr 421.552 R†	58588.2	490.819	ug/L	2.0416	490.819	ug/L	2.0416	0.42%
QC value within limits for Sr 421.552 R Recovery = 98.16%								
Sn 189.927†	46784.3	4863.97	ug/L	50.579	4863.97	ug/L	50.579	1.04%
QC value within limits for Sn 189.927 Recovery = 97.28%								

All analyte(s) passed QC.

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893009.1 File : met08_sn_6010 Time : 04-AUG-2015 15:05
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.513	ug/L	10	30	
Manganese	A	5.000	4.607	ug/L	-8	30	
Iron	R	100.0	107.9	ug/L	8	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875445	-1.44

Sequence No.: 8
Sample ID: CRI,S27759
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 7
Date Collected: 8/4/2015 3:05:53 PM
Data Type: Reprocessed on 8/4/2015 3:45:59 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CRI,S27759

Analyte	Back Pressure	Flow
All	144.0 kPa	0.60 L/min

Mean Data: CRI,S27759

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3875445.4	98.5555	%	1.36858				1.39%
Y	44482.2	98.6646	%	1.78400				1.81%
Ag 328.068†	8888.9	4.67516	ug/L	0.501892	4.67516	ug/L	0.501892	10.74%
QC value within limits for Ag 328.068 Recovery = 93.50%								
Al 308.215 R†	37.0	100.560	ug/L	4.0996	100.560	ug/L	4.0996	4.08%
QC value within limits for Al 308.215 R Recovery = 100.56%								
As 188.979†	43.4	5.51259	ug/L	1.234083	5.51259	ug/L	1.234083	22.39%
QC value within limits for As 188.979 Recovery = 110.25%								
B 249.677†	11436.8	98.4763	ug/L	1.23935	98.4763	ug/L	1.23935	1.26%
QC value within limits for B 249.677 Recovery = 98.48%								
Ba 233.527†	1258.8	5.06173	ug/L	0.095671	5.06173	ug/L	0.095671	1.89%
QC value within limits for Ba 233.527 Recovery = 101.23%								
Be 313.107†	7286.2	2.10056	ug/L	0.012547	2.10056	ug/L	0.012547	0.60%
QC value within limits for Be 313.107 Recovery = 105.03%								
Ca 315.887 R†	345.6	196.651	ug/L	1.9802	196.651	ug/L	1.9802	1.01%
QC value within limits for Ca 315.887 R Recovery = 98.33%								
Cd 214.440†	389.1	4.92623	ug/L	0.122374	4.92623	ug/L	0.122374	2.48%
QC value within limits for Cd 214.440 Recovery = 98.52%								
Co 228.616†	286.9	4.13923	ug/L	1.313896	4.13923	ug/L	1.313896	31.74%
QC value within limits for Co 228.616 Recovery = 82.78%								
Cr 267.716†	103.9	4.66344	ug/L	0.219071	4.66344	ug/L	0.219071	4.70%
QC value within limits for Cr 267.716 Recovery = 93.27%								
Cu 324.752†	1502.8	4.41951	ug/L	0.241387	4.41951	ug/L	0.241387	5.46%
QC value within limits for Cu 324.752 Recovery = 88.39%								
Fe 238.204 R†	167.9	107.931	ug/L	3.8777	107.931	ug/L	3.8777	3.59%
QC value within limits for Fe 238.204 R Recovery = 107.93%								
K 766.490 R†	1197.1	473.692	ug/L	94.8239	473.692	ug/L	94.8239	20.02%
QC value within limits for K 766.490 R Recovery = 94.74%								
Mg 279.077 R†	58.7	198.655	ug/L	6.1083	198.655	ug/L	6.1083	3.07%
QC value within limits for Mg 279.077 R Recovery = 99.33%								
Mn 257.610†	5078.1	4.60651	ug/L	0.083246	4.60651	ug/L	0.083246	1.81%
QC value within limits for Mn 257.610 Recovery = 92.13%								
Mo 202.031†	62.7	4.84418	ug/L	0.365719	4.84418	ug/L	0.365719	7.55%
QC value within limits for Mo 202.031 Recovery = 96.88%								
Na 589.592 R†	1479.2	402.829	ug/L	13.3917	402.829	ug/L	13.3917	3.32%
QC value within limits for Na 589.592 R Recovery = 80.57%								
Ni 231.604†	113.3	4.12548	ug/L	0.195038	4.12548	ug/L	0.195038	4.73%
QC value within limits for Ni 231.604 Recovery = 82.51%								
Pb 220.353†	120.5	5.70707	ug/L	0.602989	5.70707	ug/L	0.602989	10.57%
QC value within limits for Pb 220.353 Recovery = 114.14%								
Sb 206.836†	101.7	9.73141	ug/L	1.498051	9.73141	ug/L	1.498051	15.39%
QC value within limits for Sb 206.836 Recovery = 97.31%								
Se 196.026†	136.7	11.8885	ug/L	4.22133	11.8885	ug/L	4.22133	35.51%
QC value within limits for Se 196.026 Recovery = 118.89%								
Ti 334.940 R†	134.3	10.2255	ug/L	0.09143	10.2255	ug/L	0.09143	0.89%
QC value within limits for Ti 334.940 R Recovery = 102.26%								
Tl 190.801†	75.5	10.4478	ug/L	1.12303	10.4478	ug/L	1.12303	10.75%
QC value within limits for Tl 190.801 Recovery = 104.48%								
V 292.402†	533.0	4.22445	ug/L	0.268310	4.22445	ug/L	0.268310	6.35%
QC value within limits for V 292.402 Recovery = 84.49%								
Zn 206.200†	534.5	20.3418	ug/L	0.30781	20.3418	ug/L	0.30781	1.51%
QC value within limits for Zn 206.200 Recovery = 101.71%								
Sr 421.552 R†	580.2	4.87189	ug/L	0.294409	4.87189	ug/L	0.294409	6.04%
QC value within limits for Sr 421.552 R Recovery = 97.44%								
Sn 189.927†	394.4	41.0019	ug/L	0.04926	41.0019	ug/L	0.04926	0.12%
QC value within limits for Sn 189.927 Recovery = 102.50%								

All analyte(s) passed QC.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893010.1 File : met08_sn_6010 Time : 04-AUG-2015 15:13
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3924187	-0.20

Sequence No.: 9
Sample ID: ICB
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 220
Date Collected: 8/4/2015 3:13:39 PM
Data Type: Reprocessed on 8/4/2015 3:46:00 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	143.0 kPa	0.60 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3924186.5	99.7950	%	1.29430				1.30%
Y	43996.5	97.5871	%	0.97388				1.00%
Ag 328.068†	-67.7	-0.0356098	ug/L	0.06786792	-0.0356098	ug/L	0.06786792	190.59%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	-4.6	-12.5789	ug/L	0.43506	-12.5789	ug/L	0.43506	3.46%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	6.5	0.819870	ug/L	1.0550766	0.819870	ug/L	1.0550766	128.69%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	-86.1	-0.741769	ug/L	0.1080798	-0.741769	ug/L	0.1080798	14.57%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	14.7	0.0591613	ug/L	0.06687839	0.0591613	ug/L	0.06687839	113.04%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	421.7	0.121576	ug/L	0.0252847	0.121576	ug/L	0.0252847	20.80%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-31.1	-17.6887	ug/L	3.28908	-17.6887	ug/L	3.28908	18.59%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	3.9	0.0491271	ug/L	0.02915424	0.0491271	ug/L	0.02915424	59.34%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-54.3	-0.789296	ug/L	0.6831238	-0.789296	ug/L	0.6831238	86.55%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-10.0	-0.446922	ug/L	0.2487880	-0.446922	ug/L	0.2487880	55.67%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	-106.8	-0.314107	ug/L	0.4384730	-0.314107	ug/L	0.4384730	139.59%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	-5.3	-3.38238	ug/L	1.251089	-3.38238	ug/L	1.251089	36.99%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	-45.3	-17.9422	ug/L	102.93223	-17.9422	ug/L	102.93223	573.69%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	-5.6	-19.0452	ug/L	11.26793	-19.0452	ug/L	11.26793	59.16%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	-455.9	-0.413588	ug/L	0.0506684	-0.413588	ug/L	0.0506684	12.25%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-4.7	-0.366601	ug/L	0.5043860	-0.366601	ug/L	0.5043860	137.58%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	-904.9	-246.436	ug/L	10.6503	-246.436	ug/L	10.6503	4.32%
QC value less than the lower limit for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	-15.0	-0.545793	ug/L	0.0238470	-0.545793	ug/L	0.0238470	4.37%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	10.8	0.509628	ug/L	0.2162798	0.509628	ug/L	0.2162798	42.44%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-5.6	-0.535401	ug/L	0.8416271	-0.535401	ug/L	0.8416271	157.20%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	-16.2	-1.41222	ug/L	5.062966	-1.41222	ug/L	5.062966	358.51%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	11.7	0.890778	ug/L	0.9738180	0.890778	ug/L	0.9738180	109.32%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	-2.6	-0.363914	ug/L	1.0978604	-0.363914	ug/L	1.0978604	301.68%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	-65.7	-0.520708	ug/L	0.2637632	-0.520708	ug/L	0.2637632	50.65%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	0.8	0.0312663	ug/L	0.05782618	0.0312663	ug/L	0.05782618	184.95%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	4.6	0.0387172	ug/L	0.55008688	0.0387172	ug/L	0.55008688	>999.9%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	1.7	0.176326	ug/L	0.8221428	0.176326	ug/L	0.8221428	466.26%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893011.1 File : met08_sn_6010 Time : 04-AUG-2015 15:22
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-3.129]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19320	ug/L	97
Copper	A	20000	20980	ug/L	105
Manganese	A	20000	18810	ug/L	94
Nickel	A	20000	17900	ug/L	89
Vanadium	A	20000	20090	ug/L	100
Aluminum	R	500000	564900	ug/L	113
Calcium	R	500000	531100	ug/L	106
Iron	R	200000	213000	ug/L	106
Magnesium	R	500000	535300	ug/L	107
Titanium	R	20000	21210	ug/L	106

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3218247	-18.16

Sequence No.: 10
Sample ID: ICSA,S27611
Analyst:
Logged In Analyst (Original) : met08
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 9
Date Collected: 8/4/2015 3:22:23 PM
Data Type: Reprocessed on 8/4/2015 3:46:01 PM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSA,S27611

Analyte	Back Pressure	Flow
All	142.0 kPa	0.60 L/min

Mean Data: ICSA,S27611

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3218246.8	81.8425	%	0.81096				0.99%
Y	39630.5	87.9031	%	1.21205				1.38%
Ag 328.068†	-3249.5	-1.70907	ug/L	0.737269	-1.70907	ug/L	0.737269	43.14%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	207938.4	564937	ug/L	2202.24	564937	ug/L	2202.24	0.39%
QC value greater than the upper limit for Al 308.215 R Recovery = 112.99%								
As 188.979†	-24.7	-3.12909	ug/L	6.349497	-3.12909	ug/L	6.349497	202.92%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	-2186.2	-18.8241	ug/L	4.27627	-18.8241	ug/L	4.27627	22.72%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-334.2	-1.34398	ug/L	0.841502	-1.34398	ug/L	0.841502	62.61%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-1774.9	-0.511698	ug/L	0.3266989	-0.511698	ug/L	0.3266989	63.85%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	933195.9	531076	ug/L	4759.26	531076	ug/L	4759.26	0.90%
QC value within limits for Ca 315.887 R Recovery = 106.22%								
Cd 214.440†	-125.6	-1.59077	ug/L	0.055371	-1.59077	ug/L	0.055371	3.48%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	2559.6	-1.07982	ug/L	1.744872	-1.07982	ug/L	1.744872	161.59%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	430525.1	19322.7	ug/L	1065.91	19322.7	ug/L	1065.91	5.52%
QC value within limits for Cr 267.716 Recovery = 96.61%								
Cu 324.752†	7134005.5	20979.4	ug/L	360.40	20979.4	ug/L	360.40	1.72%
QC value within limits for Cu 324.752 Recovery = 104.90%								
Fe 238.204 R†	331309.3	212960	ug/L	717.67	212960	ug/L	717.67	0.34%
QC value within limits for Fe 238.204 R Recovery = 106.48%								
K 766.490 R†	-332.4	-131.543	ug/L	70.8901	-131.543	ug/L	70.8901	53.89%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	158153.4	535250	ug/L	2256.36	535250	ug/L	2256.36	0.42%
QC value within limits for Mg 279.077 R Recovery = 107.05%								
Mn 257.610†	20734709.4	18809.2	ug/L	320.33	18809.2	ug/L	320.33	1.70%
QC value within limits for Mn 257.610 Recovery = 94.05%								
Mo 202.031†	53.2	4.11024	ug/L	0.478621	4.11024	ug/L	0.478621	11.64%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	277.4	75.5314	ug/L	7.33129	75.5314	ug/L	7.33129	9.71%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	491276.4	17895.9	ug/L	92.24	17895.9	ug/L	92.24	0.52%
QC value less than the lower limit for Ni 231.604 Recovery = 89.48%								
Pb 220.353†	3.5	0.163866	ug/L	1.6312044	0.163866	ug/L	1.6312044	995.45%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-14.1	-1.34773	ug/L	7.112928	-1.34773	ug/L	7.112928	527.77%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	5.2	0.455539	ug/L	4.8597920	0.455539	ug/L	4.8597920	>999.9%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	278472.1	21209.3	ug/L	64.05	21209.3	ug/L	64.05	0.30%
QC value within limits for Ti 334.940 R Recovery = 106.05%								
Tl 190.801†	63.9	8.83789	ug/L	34.799215	8.83789	ug/L	34.799215	393.75%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	2534179.5	20085.8	ug/L	313.04	20085.8	ug/L	313.04	1.56%
QC value within limits for V 292.402 Recovery = 100.43%								
Zn 206.200†	-144.2	-5.48678	ug/L	1.386525	-5.48678	ug/L	1.386525	25.27%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	711.8	0.152981	ug/L	0.6028928	0.152981	ug/L	0.6028928	394.10%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	-290.1	-30.1636	ug/L	1.72441	-30.1636	ug/L	1.72441	5.72%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893012.1 File : met08_sn_6010 Time : 04-AUG-2015 15:47
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	509.5	ug/L	2	20	
Manganese	A	500.0	473.3	ug/L	-5	20	
Iron	R	200000	204300	ug/L	2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3244133	-17.50

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Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Initial Sample Wt:
Dilution:
Wash Time:
User canceled analysis.

Autosampler Location: 1
Date Collected: 8/4/2015 3:47:27 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

==========

Sequence No.: 11
Sample ID: ICSAB,S27612
Analyst:
Initial Sample Wt:
Dilution:
Wash Time:

Autosampler Location: 10
Date Collected: 8/4/2015 3:47:39 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICSAB,S27612

Analyte	Back Pressure	Flow
All	143.0 kPa	0.60 L/min

Mean Data: ICSAB,S27612

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3244132.9	82.5008	%	1.48484				1.80%
Y	39127.7	86.7879	%	0.46525				0.54%
Ag 328.068†	2097400.4	1103.13	ug/L	8.449	1103.13	ug/L	8.449	0.77%
QC value within limits for Ag 328.068 Recovery = 110.31%								
Al 308.215 R†	196688.4	534372	ug/L	1495.41	534372	ug/L	1495.41	0.28%
QC value within limits for Al 308.215 R Recovery = 106.87%								
As 188.979†	4014.3	509.521	ug/L	12.7803	509.521	ug/L	12.7803	2.51%
QC value within limits for As 188.979 Recovery = 101.90%								
B 249.677†	-1854.5	-15.9683	ug/L	4.82112	-15.9683	ug/L	4.82112	30.19%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	132919.1	534.488	ug/L	0.5602	534.488	ug/L	0.5602	0.10%
QC value within limits for Ba 233.527 Recovery = 106.90%								
Be 313.107†	1880745.1	542.209	ug/L	1.3362	542.209	ug/L	1.3362	0.25%
QC value within limits for Be 313.107 Recovery = 108.44%								
Ca 315.887 R†	903637.5	514255	ug/L	7039.95	514255	ug/L	7039.95	1.37%
QC value within limits for Ca 315.887 R Recovery = 102.85%								
Cd 214.440†	79044.3	1000.76	ug/L	16.349	1000.76	ug/L	16.349	1.63%
QC value within limits for Cd 214.440 Recovery = 100.08%								
Co 228.616†	34582.9	464.846	ug/L	10.2308	464.846	ug/L	10.2308	2.20%
QC value within limits for Co 228.616 Recovery = 92.97%								
Cr 267.716†	11289.3	506.681	ug/L	28.7129	506.681	ug/L	28.7129	5.67%
QC value within limits for Cr 267.716 Recovery = 101.34%								
Cu 324.752†	183269.0	538.950	ug/L	1.1949	538.950	ug/L	1.1949	0.22%
QC value within limits for Cu 324.752 Recovery = 107.79%								
Fe 238.204 R†	317841.3	204303	ug/L	691.14	204303	ug/L	691.14	0.34%
QC value within limits for Fe 238.204 R Recovery = 102.15%								
K 766.490 R†	-329.7	-130.465	ug/L	90.4875	-130.465	ug/L	90.4875	69.36%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	153968.2	521086	ug/L	2000.34	521086	ug/L	2000.34	0.38%
QC value within limits for Mg 279.077 R Recovery = 104.22%								
Mn 257.610†	521719.3	473.270	ug/L	0.6492	473.270	ug/L	0.6492	0.14%
QC value within limits for Mn 257.610 Recovery = 94.65%								
Mo 202.031†	6710.6	518.073	ug/L	9.0801	518.073	ug/L	9.0801	1.75%
QC value within limits for Mo 202.031 Recovery = 103.61%								
Na 589.592 R†	-232.3	-63.2605	ug/L	14.41652	-63.2605	ug/L	14.41652	22.79%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	25897.2	943.368	ug/L	7.9597	943.368	ug/L	7.9597	0.84%
QC value within limits for Ni 231.604 Recovery = 94.34%								
Pb 220.353†	20337.4	963.213	ug/L	16.3097	963.213	ug/L	16.3097	1.69%
QC value within limits for Pb 220.353 Recovery = 96.32%								
Sb 206.836†	5480.1	524.189	ug/L	4.6553	524.189	ug/L	4.6553	0.89%
QC value within limits for Sb 206.836 Recovery = 104.84%								
Se 196.026†	5892.7	512.391	ug/L	14.8418	512.391	ug/L	14.8418	2.90%
QC value within limits for Se 196.026 Recovery = 102.48%								
Ti 334.940 R†	265360.3	20210.6	ug/L	32.97	20210.6	ug/L	32.97	0.16%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	3562.5	492.986	ug/L	59.5185	492.986	ug/L	59.5185	12.07%
QC value within limits for Tl 190.801 Recovery = 98.60%								
V 292.402†	69047.8	547.270	ug/L	4.5012	547.270	ug/L	4.5012	0.82%
QC value within limits for V 292.402 Recovery = 109.45%								

Zn 206.200†	26045.1	991.201 ug/L	20.1924	991.201 ug/L	20.1924	2.04%
QC value within limits for Zn 206.200 Recovery = 99.12%						
Sr 421.552 R†	62724.5	521.474 ug/L	1.3826	521.474 ug/L	1.3826	0.27%
QC value within limits for Sr 421.552 R Recovery = 104.29%						
Sn 189.927†	-228.0	-23.7035 ug/L	0.61397	-23.7035 ug/L	0.61397	2.59%
QC value within limits for Sn 189.927 Recovery = Not calculated						

All analyte(s) passed QC.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893023.1 File : met08_sn_6010 Time : 04-AUG-2015 16:50
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.5838	5000	4813	ug/L	-4	10	
Manganese	A	1099.8	1073.2	5000	4868	ug/L	-3	10	
Iron	R	1.6387	1.6260	20000	20900	ug/L	5	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3739314	-4.91

Sequence No.: 22
Sample ID: CCV,S27756
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 217
Date Collected: 8/4/2015 4:50:48 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	147.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3739314.4	95.0936	%	0.82109				0.86%
Y	41454.2	91.9482	%	1.40513				1.53%
Ag 328.068†	1852547.6	974.351	ug/L	6.8830	974.351	ug/L	6.8830	0.71%
QC value within limits for Ag 328.068 Recovery = 97.44%								
Al 308.215 R†	7323.6	19897.1	ug/L	35.99	19897.1	ug/L	35.99	0.18%
QC value within limits for Al 308.215 R Recovery = 99.49%								
As 188.979†	37919.2	4812.90	ug/L	11.955	4812.90	ug/L	11.955	0.25%
QC value within limits for As 188.979 Recovery = 96.26%								
B 249.677†	579610.1	4990.73	ug/L	28.613	4990.73	ug/L	28.613	0.57%
QC value within limits for B 249.677 Recovery = 99.81%								
Ba 233.527†	1211827.6	4872.94	ug/L	3.042	4872.94	ug/L	3.042	0.06%
QC value within limits for Ba 233.527 Recovery = 97.46%								
Be 313.107†	1760151.1	507.443	ug/L	0.9479	507.443	ug/L	0.9479	0.19%
QC value within limits for Be 313.107 Recovery = 101.49%								
Ca 315.887 R†	34922.5	19874.2	ug/L	39.62	19874.2	ug/L	39.62	0.20%
QC value within limits for Ca 315.887 R Recovery = 99.37%								
Cd 214.440†	387699.5	4908.56	ug/L	65.533	4908.56	ug/L	65.533	1.34%
QC value within limits for Cd 214.440 Recovery = 98.17%								
Co 228.616†	336074.1	4862.48	ug/L	27.286	4862.48	ug/L	27.286	0.56%
QC value within limits for Co 228.616 Recovery = 97.25%								
Cr 267.716†	108462.8	4867.99	ug/L	200.205	4867.99	ug/L	200.205	4.11%
QC value within limits for Cr 267.716 Recovery = 97.36%								
Cu 324.752†	1623927.2	4775.57	ug/L	7.265	4775.57	ug/L	7.265	0.15%
QC value within limits for Cu 324.752 Recovery = 95.51%								
Fe 238.204 R†	32519.2	20902.8	ug/L	80.01	20902.8	ug/L	80.01	0.38%
QC value within limits for Fe 238.204 R Recovery = 104.51%								
K 766.490 R†	49556.6	19609.2	ug/L	616.46	19609.2	ug/L	616.46	3.14%
QC value within limits for K 766.490 R Recovery = 98.05%								
Mg 279.077 R†	6100.3	20645.6	ug/L	155.01	20645.6	ug/L	155.01	0.75%
QC value within limits for Mg 279.077 R Recovery = 103.23%								
Mn 257.610†	5365787.0	4867.50	ug/L	8.297	4867.50	ug/L	8.297	0.17%
QC value within limits for Mn 257.610 Recovery = 97.35%								
Mo 202.031†	62165.9	4799.37	ug/L	24.475	4799.37	ug/L	24.475	0.51%
QC value within limits for Mo 202.031 Recovery = 95.99%								
Na 589.592 R†	72984.4	19875.8	ug/L	603.13	19875.8	ug/L	603.13	3.03%
QC value within limits for Na 589.592 R Recovery = 99.38%								
Ni 231.604†	133204.1	4852.28	ug/L	19.211	4852.28	ug/L	19.211	0.40%
QC value within limits for Ni 231.604 Recovery = 97.05%								
Pb 220.353†	97936.3	4638.43	ug/L	13.429	4638.43	ug/L	13.429	0.29%
QC value within limits for Pb 220.353 Recovery = 92.77%								
Sb 206.836†	48580.3	4646.85	ug/L	35.931	4646.85	ug/L	35.931	0.77%
QC value within limits for Sb 206.836 Recovery = 92.94%								
Se 196.026†	55025.2	4784.65	ug/L	22.499	4784.65	ug/L	22.499	0.47%
QC value within limits for Se 196.026 Recovery = 95.69%								
Ti 334.940 R†	61192.4	4660.60	ug/L	4.785	4660.60	ug/L	4.785	0.10%
QC value within limits for Ti 334.940 R Recovery = 93.21%								
Tl 190.801†	34542.8	4780.05	ug/L	21.797	4780.05	ug/L	21.797	0.46%
QC value within limits for Tl 190.801 Recovery = 95.60%								
V 292.402†	618612.0	4903.09	ug/L	66.421	4903.09	ug/L	66.421	1.35%
QC value within limits for V 292.402 Recovery = 98.06%								
Zn 206.200†	128111.4	4875.55	ug/L	25.418	4875.55	ug/L	25.418	0.52%
QC value within limits for Zn 206.200 Recovery = 97.51%								
Sr 421.552 R†	58005.7	485.991	ug/L	14.6233	485.991	ug/L	14.6233	3.01%
QC value within limits for Sr 421.552 R Recovery = 97.20%								
Sn 189.927†	45101.1	4688.97	ug/L	25.425	4688.97	ug/L	25.425	0.54%
QC value within limits for Sn 189.927 Recovery = 93.78%								

All analyte(s) passed QC.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893025.1 File : met08_sn_6010 Time : 04-AUG-2015 17:02
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3895030	-0.95

Sequence No.: 24
Sample ID: CCB
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 275

Autosampler Location: 220
Date Collected: 8/4/2015 5:02:30 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	146.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3895029.9	99.0536	%	0.94753				0.96%
Y	42525.1	94.3234	%	0.61102				0.65%
Ag 328.068†	-1404.8	-0.738869	ug/L	0.2460087	-0.738869	ug/L	0.2460087	33.30%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	-8.0	-21.7392	ug/L	18.74627	-21.7392	ug/L	18.74627	86.23%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	-4.5	-0.565226	ug/L	0.3287707	-0.565226	ug/L	0.3287707	58.17%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	773.8	6.66309	ug/L	0.359457	6.66309	ug/L	0.359457	5.39%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-9.4	-0.0376278	ug/L	0.02718900	-0.0376278	ug/L	0.02718900	72.26%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-41.2	-0.0118718	ug/L	0.01935897	-0.0118718	ug/L	0.01935897	163.07%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	39.6	22.5083	ug/L	6.38596	22.5083	ug/L	6.38596	28.37%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	3.1	0.0386521	ug/L	0.03055132	0.0386521	ug/L	0.03055132	79.04%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-91.1	-1.32047	ug/L	0.596893	-1.32047	ug/L	0.596893	45.20%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-17.4	-0.779305	ug/L	0.4316634	-0.779305	ug/L	0.4316634	55.39%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	-189.1	-0.556048	ug/L	0.2999991	-0.556048	ug/L	0.2999991	53.95%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	-1.7	-1.10074	ug/L	1.385547	-1.10074	ug/L	1.385547	125.87%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	-46.0	-18.1866	ug/L	80.25018	-18.1866	ug/L	80.25018	441.26%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	15.3	51.6605	ug/L	9.66335	51.6605	ug/L	9.66335	18.71%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	-352.5	-0.319750	ug/L	0.0404612	-0.319750	ug/L	0.0404612	12.65%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-1.5	-0.116624	ug/L	0.1572424	-0.116624	ug/L	0.1572424	134.83%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	2478.8	675.040	ug/L	145.7163	675.040	ug/L	145.7163	21.59%
QC value greater than the upper limit for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	-12.5	-0.453943	ug/L	0.0259683	-0.453943	ug/L	0.0259683	5.72%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	15.0	0.710685	ug/L	1.5699232	0.710685	ug/L	1.5699232	220.90%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-6.3	-0.600452	ug/L	0.9888330	-0.600452	ug/L	0.9888330	164.68%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	27.3	2.37018	ug/L	4.212565	2.37018	ug/L	4.212565	177.73%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	1.3	0.0990202	ug/L	0.64872161	0.0990202	ug/L	0.64872161	655.14%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	-1.2	-0.168879	ug/L	0.7145538	-0.168879	ug/L	0.7145538	423.12%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	-95.8	-0.758991	ug/L	0.3265916	-0.758991	ug/L	0.3265916	43.03%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-0.3	-0.0110525	ug/L	0.06236000	-0.0110525	ug/L	0.06236000	564.21%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	38.0	0.319330	ug/L	0.0950178	0.319330	ug/L	0.0950178	29.76%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	10.5	1.09130	ug/L	0.493700	1.09130	ug/L	0.493700	45.24%
QC value within limits for Sn 189.927 Recovery = Not calculated								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893036.1 File : met08_sn_6010 Time : 04-AUG-2015 18:16
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.0665	5000	4485	ug/L	-10	10	
Manganese	A	1099.8	1065.1	5000	4831	ug/L	-3	10	
Iron	R	1.6387	1.6632	20000	21380	ug/L	7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3696258	-6.00

Sequence No.: 35
Sample ID: CCV,S27756
Analyst:
Initial Sample Wt:
Dilution:
Wash Time: 65

Autosampler Location: 217
Date Collected: 8/4/2015 6:16:31 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:
Auto Dilution Factor: 1

Nebulizer Parameters: CCV,S27756

Analyte	Back Pressure	Flow
All	146.0 kPa	0.60 L/min

Mean Data: CCV,S27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3696257.7	93.9986	%	1.38742				1.48%
Y	38824.7	86.1158	%	0.50130				0.58%
Ag 328.068†	1826338.8	960.567	ug/L	11.7526	960.567	ug/L	11.7526	1.22%
QC value within limits for Ag 328.068 Recovery = 96.06%								
Al 308.215 R†	7432.1	20192.0	ug/L	139.76	20192.0	ug/L	139.76	0.69%
QC value within limits for Al 308.215 R Recovery = 100.96%								
As 188.979†	35332.6	4484.59	ug/L	56.401	4484.59	ug/L	56.401	1.26%
QC value less than the lower limit for As 188.979 Recovery = 89.69%								
B 249.677†	564072.5	4856.94	ug/L	146.034	4856.94	ug/L	146.034	3.01%
QC value within limits for B 249.677 Recovery = 97.14%								
Ba 233.527†	1178156.0	4737.54	ug/L	13.201	4737.54	ug/L	13.201	0.28%
QC value within limits for Ba 233.527 Recovery = 94.75%								
Be 313.107†	1760019.4	507.405	ug/L	0.7933	507.405	ug/L	0.7933	0.16%
QC value within limits for Be 313.107 Recovery = 101.48%								
Ca 315.887 R†	35069.0	19957.5	ug/L	112.77	19957.5	ug/L	112.77	0.57%
QC value within limits for Ca 315.887 R Recovery = 99.79%								
Cd 214.440†	354615.3	4489.69	ug/L	30.509	4489.69	ug/L	30.509	0.68%
QC value less than the lower limit for Cd 214.440 Recovery = 89.79%								
Co 228.616†	318093.0	4601.77	ug/L	129.820	4601.77	ug/L	129.820	2.82%
QC value within limits for Co 228.616 Recovery = 92.04%								
Cr 267.716†	108186.2	4855.57	ug/L	401.268	4855.57	ug/L	401.268	8.26%
QC value within limits for Cr 267.716 Recovery = 97.11%								
Cu 324.752†	1627050.5	4784.76	ug/L	4.061	4784.76	ug/L	4.061	0.08%
QC value within limits for Cu 324.752 Recovery = 95.70%								
Fe 238.204 R†	33263.2	21381.0	ug/L	151.44	21381.0	ug/L	151.44	0.71%
QC value within limits for Fe 238.204 R Recovery = 106.90%								
K 766.490 R†	52279.1	20686.4	ug/L	157.34	20686.4	ug/L	157.34	0.76%
QC value within limits for K 766.490 R Recovery = 103.43%								
Mg 279.077 R†	6255.9	21172.4	ug/L	92.75	21172.4	ug/L	92.75	0.44%
QC value within limits for Mg 279.077 R Recovery = 105.86%								
Mn 257.610†	5325442.6	4830.90	ug/L	4.214	4830.90	ug/L	4.214	0.09%
QC value within limits for Mn 257.610 Recovery = 96.62%								
Mo 202.031†	56345.5	4350.02	ug/L	63.496	4350.02	ug/L	63.496	1.46%
QC value less than the lower limit for Mo 202.031 Recovery = 87.00%								
Na 589.592 R†	81223.8	22119.6	ug/L	59.99	22119.6	ug/L	59.99	0.27%
QC value greater than the upper limit for Na 589.592 R Recovery = 110.60%								
Ni 231.604†	126723.1	4616.19	ug/L	60.440	4616.19	ug/L	60.440	1.31%
QC value within limits for Ni 231.604 Recovery = 92.32%								
Pb 220.353†	91183.2	4318.60	ug/L	42.466	4318.60	ug/L	42.466	0.98%
QC value less than the lower limit for Pb 220.353 Recovery = 86.37%								
Sb 206.836†	44865.1	4291.48	ug/L	9.534	4291.48	ug/L	9.534	0.22%
QC value less than the lower limit for Sb 206.836 Recovery = 85.83%								
Se 196.026†	51030.4	4437.29	ug/L	84.881	4437.29	ug/L	84.881	1.91%
QC value less than the lower limit for Se 196.026 Recovery = 88.75%								
Ti 334.940 R†	61964.9	4719.43	ug/L	18.951	4719.43	ug/L	18.951	0.40%
QC value within limits for Ti 334.940 R Recovery = 94.39%								
Tl 190.801†	32183.5	4453.57	ug/L	68.083	4453.57	ug/L	68.083	1.53%
QC value less than the lower limit for Tl 190.801 Recovery = 89.07%								
V 292.402†	615653.9	4879.65	ug/L	53.686	4879.65	ug/L	53.686	1.10%
QC value within limits for V 292.402 Recovery = 97.59%								
Zn 206.200†	115998.7	4414.57	ug/L	113.809	4414.57	ug/L	113.809	2.58%
QC value less than the lower limit for Zn 206.200 Recovery = 88.29%								
Sr 421.552 R†	59156.6	495.644	ug/L	3.9470	495.644	ug/L	3.9470	0.80%
QC value within limits for Sr 421.552 R Recovery = 99.13%								
Sn 189.927†	41794.3	4345.18	ug/L	72.304	4345.18	ug/L	72.304	1.66%
QC value less than the lower limit for Sn 189.927 Recovery = 86.90%								

QC Failed. Continue with analysis.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893037.1 File : met08_sn_6010 Time : 04-AUG-2015 18:24
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875641	-1.44

Sequence No.: 36 | **Autosampler Location: 220**
Sample ID: CCB | **Date Collected: 8/4/2015 6:24:14 PM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**
Wash Time: 275 | **Auto Dilution Factor: 1**

Nebulizer Parameters: CCB

Analyte	Back Pressure	Flow
All	144.0 kPa	0.60 L/min

Mean Data: CCB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3875640.7	98.5605	%	1.40916				1.43%
Y	39646.8	87.9393	%	1.16619				1.33%
Ag 328.068†	-575.7	-0.302785	ug/L	0.1001950	-0.302785	ug/L	0.1001950	33.09%
QC value within limits for Ag 328.068 Recovery = Not calculated								
Al 308.215 R†	-11.7	-31.8189	ug/L	13.49359	-31.8189	ug/L	13.49359	42.41%
QC value within limits for Al 308.215 R Recovery = Not calculated								
As 188.979†	-17.0	-2.16162	ug/L	0.840256	-2.16162	ug/L	0.840256	38.87%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	1926.4	16.5874	ug/L	0.66340	16.5874	ug/L	0.66340	4.00%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-73.0	-0.293595	ug/L	0.0238242	-0.293595	ug/L	0.0238242	8.11%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-187.7	-0.0541086	ug/L	0.00811964	-0.0541086	ug/L	0.00811964	15.01%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-20.7	-11.7615	ug/L	3.85149	-11.7615	ug/L	3.85149	32.75%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	-14.8	-0.187635	ug/L	0.0325179	-0.187635	ug/L	0.0325179	17.33%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	-54.6	-0.791304	ug/L	0.5091135	-0.791304	ug/L	0.5091135	64.34%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-11.5	-0.516248	ug/L	0.3669325	-0.516248	ug/L	0.3669325	71.08%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	-294.3	-0.865589	ug/L	0.2238546	-0.865589	ug/L	0.2238546	25.86%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	-4.8	-3.10052	ug/L	0.788565	-3.10052	ug/L	0.788565	25.43%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	483.4	191.270	ug/L	82.2247	191.270	ug/L	82.2247	42.99%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	-4.5	-15.2087	ug/L	24.76283	-15.2087	ug/L	24.76283	162.82%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	-840.7	-0.762629	ug/L	0.0360709	-0.762629	ug/L	0.0360709	4.73%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	-0.7	-0.0531367	ug/L	0.28107194	-0.0531367	ug/L	0.28107194	528.96%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	1062.3	289.308	ug/L	56.5284	289.308	ug/L	56.5284	19.54%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	-17.6	-0.640496	ug/L	0.0083201	-0.640496	ug/L	0.0083201	1.30%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	-19.1	-0.905989	ug/L	1.2226405	-0.905989	ug/L	1.2226405	134.95%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-14.9	-1.42585	ug/L	1.205486	-1.42585	ug/L	1.205486	84.54%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	9.3	0.808484	ug/L	0.6716503	0.808484	ug/L	0.6716503	83.08%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	-0.7	-0.0531154	ug/L	0.77602872	-0.0531154	ug/L	0.77602872	>999.9%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	-17.1	-2.36815	ug/L	1.386053	-2.36815	ug/L	1.386053	58.53%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	-51.2	-0.405451	ug/L	0.5002064	-0.405451	ug/L	0.5002064	123.37%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-4.6	-0.176581	ug/L	0.0371434	-0.176581	ug/L	0.0371434	21.03%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	19.9	0.167217	ug/L	0.4818931	0.167217	ug/L	0.4818931	288.18%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	10.7	1.10763	ug/L	0.155675	1.10763	ug/L	0.155675	14.05%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met09_sn_	ICALBLK				08/05/15 05:38	1.0		
002	met09_sn_	ICAL	L1			08/05/15 05:43	1.0	1	
003	met09_sn_	ICAL	L2			08/05/15 05:48	1.0	2	
004	met09_sn_	ICAL	L3			08/05/15 05:53	1.0	3	
005	met09_sn_	ICAL	L4			08/05/15 05:57	1.0	4	
006	met09_sn_	ICAL	L5			08/05/15 06:04	1.0	5	
007	met09_sn_	ICV				08/05/15 06:11	1.0	6	
008	met09_sn_	XCRI				08/05/15 06:18	1.0	7	
009	met09_sn_	CRI				08/05/15 06:36	1.0	7	
010	met09_sn_	ICB				08/05/15 06:41	1.0		
011	met09_sn_	ICSA				08/05/15 06:46	1.0	8	10:AL=510000
012	met09_sn_	ICSAB				08/05/15 08:02	1.0	9	5:AL=490000
013	met09_sn_	MSS	268662-001	Soil	225788	08/05/15 08:30	100.0		
014	met09_sn_	SAMPLE	268673-001	Miscell.	225788	08/05/15 08:34	100.0		
015	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 08:38	100.0		1:PB=12000
016	met09_sn_	X	RINSE			08/05/15 08:46	1.0		
017	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:51	1.0		6:FE=380000
018	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:59	1.0		6:FE=390000
019	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 09:07	1000		
020	met09_sn_	CCV				08/05/15 09:12	1.0	10	
021	met09_sn_	CCB				08/05/15 09:19	1.0		
022	met09_sn_	MSS	268613-004	Water	225732	08/05/15 09:29	1.0		
023	met09_sn_	CCV				08/05/15 09:34	1.0	10	
024	met09_sn_	CCB				08/05/15 09:41	1.0		
025	met09_sn_	BLANK	QC798252	TCLP Leachate	225793	08/05/15 09:52	10.0		1:NA=160000
026	met09_sn_	BLANK	QC798257	TCLP Leachate	225793	08/05/15 09:57	10.0		1:NA=150000
027	met09_sn_	BS	QC798253	TCLP Leachate	225793	08/05/15 10:03	1.0		
028	met09_sn_	BSD	QC798254	TCLP Leachate	225793	08/05/15 10:07	1.0		
029	met09_sn_	MSS	268597-001	TCLP Leachate	225793	08/05/15 10:11	10.0		1:NA=150000
030	met09_sn_	MS	QC798255	TCLP Leachate	225793	08/05/15 10:16	10.0		
031	met09_sn_	MSD	QC798256	TCLP Leachate	225793	08/05/15 10:21	10.0		
032	met09_sn_	SAMPLE	268369-001	TCLP Leachate	225793	08/05/15 10:25	10.0		1:NA=150000
033	met09_sn_	SAMPLE	268373-001	TCLP Leachate	225793	08/05/15 10:30	10.0		1:NA=190000
034	met09_sn_	SAMPLE	268655-001	TCLP Leachate	225793	08/05/15 10:36	10.0		1:NA=140000
035	met09_sn_	CCV				08/05/15 10:41	1.0	10	
036	met09_sn_	CCB				08/05/15 10:48	1.0		
037	met09_sn_	SAMPLE	268655-002	TCLP Leachate	225793	08/05/15 10:53	10.0		1:NA=150000
038	met09_sn_	CCV				08/05/15 10:58	1.0	10	
039	met09_sn_	CCB				08/05/15 11:05	1.0		
040	met09_sn_	SER	QC798239	Soil	225788	08/05/15 11:19	500.0		
041	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 11:24	100.0	11 12 13	
042	met09_sn_	SAMPLE	268669-001	Miscell.	225788	08/05/15 11:28	100.0		
043	met09_sn_	SAMPLE	268584-004	Miscell.	225788	08/05/15 11:33	1.0		1:CR=310000
044	met09_sn_	X	RINSE			08/05/15 11:38	1.0		
045	met09_sn_	X	RINSE			08/05/15 11:43	1.0		
046	met09_sn_	X	RINSE			08/05/15 11:48	1.0		
047	met09_sn_	X	RINSE			08/05/15 11:53	1.0		
048	met09_sn_	CCV				08/05/15 11:58	1.0	10	
049	met09_sn_	CCB				08/05/15 12:05	1.0		
050	met09_sn_	BLANK	QC798178	Water	225774	08/05/15 12:12	1.0		
051	met09_sn_	BS	QC798179	Water	225774	08/05/15 12:17	1.0		
052	met09_sn_	BSD	QC798180	Water	225774	08/05/15 12:21	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met09_sn_	MSS	268615-001	Water	225774	08/05/15 12:26	1.0		3:MG=380000
054	met09_sn_	MS	QC798181	Water	225774	08/05/15 12:33	1.0		3:MG=370000
055	met09_sn_	MSD	QC798182	Water	225774	08/05/15 12:41	1.0		3:MG=370000
056	met09_sn_	SAMPLE	268593-001	Water	225774	08/05/15 12:49	1.0		3:MG=130000
057	met09_sn_	SAMPLE	268593-002	Water	225774	08/05/15 12:57	1.0		2:MG=140000
058	met09_sn_	SAMPLE	268616-001	Water	225774	08/05/15 13:05	1.0		3:MG=290000
059	met09_sn_	SAMPLE	268668-001	Water	225774	08/05/15 13:14	1.0		
060	met09_sn_	CCV				08/05/15 13:22	1.0	10	
061	met09_sn_	CCB				08/05/15 13:29	1.0		
062	met09_sn_	BLANK	QC798293	Soil	225807	08/05/15 13:39	1.0		
063	met09_sn_	BS	QC798294	Soil	225807	08/05/15 13:44	5.0		
064	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 13:49	5.0		
065	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 13:53	10.0		
066	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 13:57	1.0	11 12 13	1:FE=1800000
067	met09_sn_	MS	QC798296	Soil	225807	08/05/15 14:05	5.0		1:FE=200000
068	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 14:13	5.0		
069	met09_sn_	SAMPLE	268707-001	Soil	225807	08/05/15 14:21	1.0		3:FE=210000
070	met09_sn_	BS	QC798294	Soil	225807	08/05/15 14:29	5.0		
071	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 14:34	5.0		
072	met09_sn_	CCV				08/05/15 14:38	1.0	10	
073	met09_sn_	CCB				08/05/15 14:45	1.0		
074	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 14:50	10.0		
075	met09_sn_	SAMPLE	268682-003	Soil	225807	08/05/15 14:54	10.0		
076	met09_sn_	SAMPLE	268682-004	Soil	225807	08/05/15 14:58	10.0		
077	met09_sn_	SAMPLE	268682-005	Soil	225807	08/05/15 15:03	10.0		
078	met09_sn_	SAMPLE	268682-006	Soil	225807	08/05/15 15:07	10.0		
079	met09_sn_	SAMPLE	268682-007	Soil	225807	08/05/15 15:11	10.0		
080	met09_sn_	BS	QC798294	Soil	225807	08/05/15 15:16	5.0		
081	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 15:20	5.0		
082	met09_sn_	SAMPLE	268682-008	Soil	225807	08/05/15 15:24	10.0		
083	met09_sn_	SAMPLE	268682-009	Soil	225807	08/05/15 15:28	10.0		
084	met09_sn_	CCV				08/05/15 15:33	1.0	10	
085	met09_sn_	CCB				08/05/15 15:40	1.0		
086	met09_sn_	BS	QC797932	Filtrate	225705	08/05/15 15:45	1.0		
087	met09_sn_	BSD	QC797933	Filtrate	225705	08/05/15 15:49	1.0		
088	met09_sn_	X	RINSE			08/05/15 15:53	1.0		
089	met09_sn_	SAMPLE	268682-010	Soil	225807	08/05/15 15:58	10.0		
090	met09_sn_	SAMPLE	268682-011	Soil	225807	08/05/15 16:03	10.0		
091	met09_sn_	SAMPLE	268682-012	Soil	225807	08/05/15 16:07	10.0		
092	met09_sn_	BS	QC798294	Soil	225807	08/05/15 16:11	5.0		
093	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 16:15	5.0		
094	met09_sn_	CCV				08/05/15 16:19	1.0	10	
095	met09_sn_	CCB				08/05/15 16:26	1.0		
096	met09_sn_	SAMPLE	268597-002	TCLP Leachate	225793	08/05/15 16:32	10.0		1:NA=190000
097	met09_sn_	X	RINSE			08/05/15 16:37	1.0		
098	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 16:42	5.0		1:FE=200000
099	met09_sn_	MS	QC798296	Soil	225807	08/05/15 16:49	5.0		
100	met09_sn_	SAMPLE	268682-013	Soil	225807	08/05/15 16:57	10.0		
101	met09_sn_	SAMPLE	268682-014	Soil	225807	08/05/15 17:01	10.0		
102	met09_sn_	SAMPLE	268682-015	Soil	225807	08/05/15 17:06	10.0		
103	met09_sn_	SAMPLE	268682-016	Soil	225807	08/05/15 17:10	10.0		
104	met09_sn_	SAMPLE	268682-017	Soil	225807	08/05/15 17:14	1.0		2:FE=250000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:22	1.0		1:FE=170000
106	met09_sn_	CCV				08/05/15 17:30	1.0	10	
107	met09_sn_	CCB				08/05/15 17:37	1.0		
108	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:42	1.0		1:FE=160000
109	met09_sn_	CCV				08/05/15 17:50	1.0	10	
110	met09_sn_	CCB				08/05/15 17:57	1.0		
111	met09_sn_	SAMPLE	268608-001	Soil	225747	08/05/15 18:07	1.0		4:FE=380000
112	met09_sn_	SAMPLE	268608-002	Soil	225747	08/05/15 18:15	1.0		3:FE=410000
113	met09_sn_	SAMPLE	268608-003	Soil	225747	08/05/15 18:22	1.0		3:FE=360000
114	met09_sn_	SAMPLE	268608-004	Soil	225747	08/05/15 18:30	1.0		3:FE=460000
115	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 18:40	1.0		1:FE=190000
116	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 18:48	10.0		
117	met09_sn_	CCV				08/05/15 19:02	1.0	10	
118	met09_sn_	CCB				08/05/15 19:09	1.0		
119	met09_sn_	SAMPLE	268464-002	Water	225649	08/05/15 19:15	100.0		
120	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 19:26	1.0		3:MG=610000
121	met09_sn_	X	RINSE			08/05/15 19:33	1.0		
122	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 19:38	5.0		
123	met09_sn_	X	RINSE			08/05/15 19:46	1.0		
124	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 19:51	1.0	11 12 13	3:MG=600000
125	met09_sn_	X	RINSE			08/05/15 19:59	1.0		
126	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 20:04	100.0		
127	met09_sn_	X	RINSE			08/05/15 20:10	1.0		
128	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 20:15	500.0		
129	met09_sn_	X	RINSE			08/05/15 20:20	1.0		
130	met09_sn_	CCV				08/05/15 20:25	1.0	10	
131	met09_sn_	CCB				08/05/15 20:32	1.0		
132	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 20:37	100.0	11 12 13	
133	met09_sn_	X	RINSE			08/05/15 20:41	1.0		
134	met09_sn_	SAMPLE	268464-003	Water	225649	08/05/15 20:47	1.0		
135	met09_sn_	X	RINSE			08/05/15 20:52	1.0		
136	met09_sn_	SAMPLE	268464-004	Water	225649	08/05/15 20:57	1.0		
137	met09_sn_	X	RINSE			08/05/15 21:02	1.0		
138	met09_sn_	MSS	268460-003	Filtrate	225672	08/05/15 21:07	1.0		1:NA=380000
139	met09_sn_	X	RINSE			08/05/15 21:11	1.0		
140	met09_sn_	X	RINSE			08/05/15 21:17	1.0		
141	met09_sn_	X	QC798374	Soil	225826	08/05/15 21:22	1.0		5:AL=440000
142	met09_sn_	CCV				08/05/15 21:30	1.0	10	
143	met09_sn_	CCB				08/05/15 21:36	1.0		
144	met09_sn_	X	QC798375	Soil	225826	08/05/15 21:42	5.0		4:AL=680000
145	met09_sn_	X	QC798376	Soil	225826	08/05/15 21:50	5.0		4:AL=680000
146	met09_sn_	X	268621-002	Soil	225826	08/05/15 21:57	1.0		4:AL=610000
147	met09_sn_	X	QC798377	Soil	225826	08/05/15 22:05	5.0		2:AL=420000
148	met09_sn_	X	QC798378	Soil	225826	08/05/15 22:13	5.0		1:AL=610000
149	met09_sn_	X	268621-004	Soil	225826	08/05/15 22:21	1.0		3:FE=400000
150	met09_sn_	X	268621-005	Soil	225826	08/05/15 22:29	1.0		2:FE=430000
151	met09_sn_	X	268621-006	Soil	225826	08/05/15 22:37	1.0		
152	met09_sn_	X	268621-007	Soil	225826	08/05/15 22:42	1.0		
153	met09_sn_	X	268621-008	Soil	225826	08/05/15 22:47	1.0		
154	met09_sn_	CCV				08/05/15 22:52	1.0	10	
155	met09_sn_	CCB				08/05/15 22:59	1.0		
156	met09_sn_	X	268621-009	Soil	225826	08/05/15 23:05	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	met09_sn_	X	268621-010	Soil	225826	08/05/15 23:10	1.0		1:FE=100000
158	met09_sn_	X	268621-011	Soil	225826	08/05/15 23:18	1.0		
159	met09_sn_	X	268621-012	Soil	225826	08/05/15 23:25	1.0		
160	met09_sn_	X	268621-013	Soil	225826	08/05/15 23:31	1.0		
161	met09_sn_	X	268621-014	Soil	225826	08/05/15 23:37	1.0		
162	met09_sn_	X	268621-015	Soil	225826	08/05/15 23:42	1.0		
163	met09_sn_	X	268684-001	Soil	225826	08/05/15 23:47	1.0		
164	met09_sn_	X	268685-001	Soil	225826	08/05/15 23:53	1.0		
165	met09_sn_	X	RINSE			08/05/15 23:58	1.0		
166	met09_sn_	CCV				08/06/15 00:03	1.0	10	
167	met09_sn_	CCB				08/06/15 00:10	1.0		
168	met09_sn_	?SAMPLE	268632-001		225747	08/06/15 00:15	1.0		
169	met09_sn_	SAMPLE	268642-001	Miscell.	225747	08/06/15 00:23	1.0		4:CA=1800000
170	met09_sn_	SAMPLE	268645-001	Soil	225747	08/06/15 00:31	1.0		5:FE=340000
171	met09_sn_	CCV				08/06/15 00:39	1.0	10	
172	met09_sn_	CCB				08/06/15 00:46	1.0		

NCD 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 49.

CRT 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 50 through 110.

NCD 08/06/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 111 through 172.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS SERIAL DILUTION FOR 268557 METALS Filtrate
EPA 6010C

Type : SER
Inst : MET09
Seqnum : 95312818122.4
File : met09_sn_
IDF : 5.0
Lab ID : QC798414
Matrix : Filtrate
Batch : 225705
Time : 05-AUG-2015 19:38
Cal : 95312818001
MSS : 268556-002
Units : ug/L

SER: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

Analyte	MSS Seqnum	MSS	Ch	RL	SER	Ch	RL	%D	Lim	Flags
Arsenic	85309335070	28.66	A	5.000	49.58	A	25.00		10	u
Iron	85311893033	2310	R	100.0	2192	R	500.0	5	10	u
Manganese	85309335070	4484	A	5.000	4813	A	25.00	7	10	u

ISTD (ICAL 002)	Ch	ICAL Abund	SER Abund	%Drift
Yttrium	A	3557812	2840598	-20.16

u=use

Sequence No.: 26
Sample ID: qc798414,225705,5
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 144
Date Collected: 8/5/2015 7:38:56 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: qc798414,225705,5

Analyte	Back Pressure	Flow
All	205.0 kPa	0.60 L/min

Mean Data: qc798414,225705,5

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2840597.6	79.8411	%	0.67420				0.84%
Y	348729.0	85.7427	%	0.76986				0.90%
Ag 338.289†	313.9	1.50566	ug/L	0.068620	1.50566	ug/L	0.068620	4.56%
Al 396.153 R†	-756.3	-66.2644	ug/L	2.98466	-66.2644	ug/L	2.98466	4.50%
As 188.979†	38.0	9.91593	ug/L	1.281298	9.91593	ug/L	1.281298	12.92%
B 249.677†	138444.3	897.587	ug/L	7.4139	897.587	ug/L	7.4139	0.83%
Ba 233.527†	2783.5	43.6658	ug/L	0.27426	43.6658	ug/L	0.27426	0.63%
Be 313.107†	418.2	0.0810278	ug/L	0.01929356	0.0810278	ug/L	0.01929356	23.81%
Ca 315.887 R†	1435380.7	127931	ug/L	1928.2	127931	ug/L	1928.2	1.51%
Cd 214.440†	-54.3	-0.751804	ug/L	0.0324225	-0.751804	ug/L	0.0324225	4.31%
Co 228.616†	11.7	0.265263	ug/L	0.0641250	0.265263	ug/L	0.0641250	24.17%
Cr 267.716†	-55.5	-0.364933	ug/L	0.0763154	-0.364933	ug/L	0.0763154	20.91%
Cu 324.752†	897.1	2.39950	ug/L	0.621790	2.39950	ug/L	0.621790	25.91%
Fe 238.204 R†	4709.5	438.382	ug/L	8.2096	438.382	ug/L	8.2096	1.87%
K 766.490 R†	125333.2	27370.6	ug/L	445.67	27370.6	ug/L	445.67	1.63%
Mg 279.077 R†	376874.0	129796	ug/L	1929.2	129796	ug/L	1929.2	1.49%
Mn 257.610†	669308.7	962.559	ug/L	5.5645	962.559	ug/L	5.5645	0.58%
Mo 202.031†	29.0	1.43785	ug/L	0.205716	1.43785	ug/L	0.205716	14.31%
Na 589.592 R†	Saturated2							
Ni 231.604†	152.7	2.31701	ug/L	0.183295	2.31701	ug/L	0.183295	7.91%
Pb 220.353†	-155.8	-7.02830	ug/L	0.352016	-7.02830	ug/L	0.352016	5.01%
Sb 206.836†	-26.5	-3.59518	ug/L	1.887827	-3.59518	ug/L	1.887827	52.51%
Se 196.026†	-24.9	-3.71721	ug/L	1.920651	-3.71721	ug/L	1.920651	51.67%
Ti 334.940 R†	-390.1	-4.76157	ug/L	0.155442	-4.76157	ug/L	0.155442	3.26%
Tl 190.801†	57.2	20.4317	ug/L	2.00856	20.4317	ug/L	2.00856	9.83%
V 292.402†	71.3	0.321644	ug/L	0.0565815	0.321644	ug/L	0.0565815	17.59%
Zn 206.200†	22.2	0.715979	ug/L	0.1408868	0.715979	ug/L	0.1408868	19.68%
Sr 421.552 R†	3223857.5	2248	ug/L	27.5	2.248	mg/L	0.0275	1.22%
Sn 189.927†	52.5	8.25771	ug/L	0.703266	0.0082577	mg/L	0.00070327	8.52%

CURTIS & TOMPKINS POST DIGEST SPIKE USER REPORT FOR 268557 METALS Filtrate
EPA 6010C

Type : PDS
Inst : MET09
Seqnum : 95312818124.7
File : met09_sn_
IDF : 1.0
Lab ID : QC798415
Matrix : Filtrate
Batch : 225705
Time : 05-AUG-2015 19:51
Cal : 95312818001
MSS : 268556-002
Units : ug/L

PDS: 50.00 mL --> 50.0 ml = 1.0 ml/ml PDF

PDS standards: S26229 (100X), S26230 (100X), S27470 (100X)

Analyte	MSS Seqnum	Result	Ch	Spiked	PDS	Ch	%Rec	Limits	Flags
Arsenic	85309335070	28.66	A	100.0	156.8	A	**128***	75-125	u
Iron	85311893033	2310	R	10000	12760	R	105	75-125	u
Manganese	85309335070	4484	A	100.0	4621	A	136	75-125	: u

ISTD (ICAL 002)	Ch	ICAL Abund	PDS Abund	%Drift
Yttrium	A	3557812	2307777	-35.13

:=recovery not meaningful u=use

Sequence No.: 28
Sample ID: qc798415,225705,1,s26229
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 145
Date Collected: 8/5/2015 7:51:50 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: qc798415,225705,1,s26229

Analyte	Back Pressure	Flow
All	205.0 kPa	0.60 L/min

Mean Data: qc798415,225705,1,s26229

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	2307776.8	64.8651	%	0.71949				1.11%
Y	305980.0	75.2320	%	0.91753				1.22%
Ag 338.289†	27745.7	133.077	ug/L	4.5418	133.077	ug/L	4.5418	3.41%
Al 396.153 R†	133205.9	11671.7	ug/L	28.25	11671.7	ug/L	28.25	0.24%
As 188.979†	601.0	156.759	ug/L	3.8053	156.759	ug/L	3.8053	2.43%
B 249.677†	896799.1	5814.29	ug/L	14.363	5814.29	ug/L	14.363	0.25%
Ba 233.527†	19720.0	309.356	ug/L	1.8828	309.356	ug/L	1.8828	0.61%
Be 313.107†	546078.1	105.796	ug/L	3.6919	105.796	ug/L	3.6919	3.49%
Ca 315.887 R†	6599763.3	588215	ug/L	16045.3	588215	ug/L	16045.3	2.73%
Cd 214.440†	6525.8	90.3206	ug/L	2.09485	90.3206	ug/L	2.09485	2.32%
Co 228.616†	4549.9	97.2944	ug/L	2.38427	97.2944	ug/L	2.38427	2.45%
Cr 267.716†	15353.1	100.980	ug/L	4.1386	100.980	ug/L	4.1386	4.10%
Cu 324.752†	54009.0	144.453	ug/L	5.2129	144.453	ug/L	5.2129	3.61%
Fe 238.204 R†	137101.2	12761.9	ug/L	6.43	12761.9	ug/L	6.43	0.05%
K 766.490 R†	758842.9	165718	ug/L	4732.2	165718	ug/L	4732.2	2.86%
Mg 279.077 R†	1752256.4	603480	ug/L	16430.1	603480	ug/L	16430.1	2.72%
Mn 257.610†	3212989.6	4620.72	ug/L	18.853	4620.72	ug/L	18.853	0.41%
Mo 202.031†	2053.2	101.909	ug/L	2.3448	101.909	ug/L	2.3448	2.30%
Na 589.592 R†	Saturated3							
Ni 231.604†	6348.9	96.3473	ug/L	2.09515	96.3473	ug/L	2.09515	2.17%
Pb 220.353†	1719.4	77.5421	ug/L	3.42994	77.5421	ug/L	3.42994	4.42%
Sb 206.836†	671.2	91.1603	ug/L	4.58684	91.1603	ug/L	4.58684	5.03%
Se 196.026†	936.2	139.568	ug/L	2.1778	139.568	ug/L	2.1778	1.56%
Ti 334.940 R†	100533.3	1227.01	ug/L	22.813	1227.01	ug/L	22.813	1.86%
Tl 190.801†	178.9	63.8923	ug/L	1.50455	63.8923	ug/L	1.50455	2.35%
V 292.402†	24220.4	109.234	ug/L	4.5148	109.234	ug/L	4.5148	4.13%
Zn 206.200†	2942.1	94.8807	ug/L	2.25692	94.8807	ug/L	2.25692	2.38%
Sr 421.552 R†	Saturated2							
Sn 189.927†	5996.9	943.076	ug/L	21.7909	0.943076	mg/L	0.0217909	2.31%

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268557 METALS Filtrate: EPA 6010C

Inst : MET09
Calnum : 95312818001
Units : ug/L

Date : 05-AUG-2015 05:38
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met09_sn_	95312818002	L1	05-AUG-2015 05:43	S27752
L2	met09_sn_	95312818003	L2	05-AUG-2015 05:48	S27753
L3	met09_sn_	95312818004	L3	05-AUG-2015 05:53	S27754
L4	met09_sn_	95312818005	L4	05-AUG-2015 05:57	S27755
L5	met09_sn_	95312818006	L5	05-AUG-2015 06:04	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	3.1800	3.8100	3.8194	3.8341		LOR0	0.00000	0.26083		3.6609	1.000	0.995	
Manganese	A	713.02	726.37	734.11	694.95		LOR0	0.00000	0.00144		717.11	1.000	0.995	
Iron	R	11.104		10.934	10.825	10.742	LOR0	0.00000	0.09308		10.901	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-17	100.00	-1	1000.0	0	10000	0		
Manganese	A	5.0000	3	100.00	4	1000.0	6	10000	0		
Iron	R	100.00	3			1000.0	2	10000	1	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09
Calnum : 95312818001 Cal Date : 05-AUG-2015

ICV 95312818007 (05-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	4898	ug/L	-2	10	
Manganese	A	5000	5040	ug/L	1	10	
Iron	R	20000	19930	ug/L	0	10	

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Logged In Analyst (Original) : met09
Initial Sample Wt:
Dilution:

Autosampler Location: 1
Date Collected: 8/5/2015 5:38:40 AM
Data Type: Reprocessed on 8/5/2015 7:59:02 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICALBLK,

Analyte	Back Pressure	Flow
All	196.0 kPa	0.60 L/min

Mean Data: ICALBLK,

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Ag 338.289	-670.8	145.83	21.74%	[0.00]	ug/L
Al 396.153 R	232.9	59.52	25.55%	[0.00]	ug/L
As 188.979	4.7	3.70	78.71%	[0.00]	ug/L
B 249.677	524.6	1.86	0.35%	[0.00]	ug/L
Ba 233.527	-6.4	2.16	34.00%	[0.00]	ug/L
Be 313.107	-1508.2	33.61	2.23%	[0.00]	ug/L
Ca 315.887 R	40.3	11.49	28.50%	[0.00]	ug/L
Cd 214.440	11.3	2.90	25.71%	[0.00]	ug/L
Co 228.616	-113.2	7.74	6.84%	[0.00]	ug/L
Cr 267.716	-5.6	2.85	51.18%	[0.00]	ug/L
Cu 324.752	6512.9	113.19	1.74%	[0.00]	ug/L
Fe 238.204 R	-16.1	3.38	21.02%	[0.00]	ug/L
K 766.490 R	308.1	112.65	36.56%	[0.00]	ug/L
Mg 279.077 R	-345.1	3.83	1.11%	[0.00]	ug/L
Mn 257.610	338.2	6.96	2.06%	[0.00]	ug/L
Mo 202.031	4.3	3.24	75.83%	[0.00]	ug/L
Na 589.592 R	650.6	106.71	16.40%	[0.00]	ug/L
Ni 231.604	681.4	15.68	2.30%	[0.00]	ug/L
Pb 220.353	-21.2	7.91	37.30%	[0.00]	ug/L
Sb 206.836	13.6	3.10	22.81%	[0.00]	ug/L
Se 196.026	-16.3	8.78	53.90%	[0.00]	ug/L
Ti 334.940 R	-12.1	2.42	19.99%	[0.00]	ug/L
Tl 190.801	-24.3	5.92	24.39%	[0.00]	ug/L
V 292.402	-70.8	43.35	61.26%	[0.00]	ug/L
Zn 206.200	-4.7	1.86	39.91%	[0.00]	ug/L
Sr 421.552 R	441.9	209.81	47.48%	[0.00]	ug/L
Sn 189.927	-1.5	1.78	115.03%	[0.00]	ug/L

Sequence No.: 2
Sample ID: ICAL,L1,S27752,1
Analyst:
Logged In Analyst (Original) : met09
Initial Sample Wt:
Dilution:

Autosampler Location: 2
Date Collected: 8/5/2015 5:43:45 AM
Data Type: Reprocessed on 8/5/2015 7:59:02 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L1,S27752,1

Analyte	Back Pressure	Flow
All	195.0 kPa	0.60 L/min

Mean Data: ICAL,L1,S27752,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3557811.7	21730.55	0.61%	100.000	%
Y	406715.4	7257.67	1.78%	100.000	%
Ag 338.289†	1122.1	130.86	11.66%	[5]	ug/L
Al 396.153 R†	1101.6	27.61	2.51%	[100]	ug/L
As 188.979†	15.9	5.13	32.27%	[5.0]	ug/L
B 249.677†	14802.0	108.34	0.73%	[100]	ug/L
Ba 233.527†	327.7	4.18	1.28%	[5.0]	ug/L
Be 313.107†	10413.0	101.36	0.97%	[2.0]	ug/L
Ca 315.887 R†	2313.9	37.16	1.61%	[200]	ug/L
Cd 214.440†	368.2	2.46	0.67%	[5.0]	ug/L
Co 228.616†	234.8	7.71	3.28%	[5.0]	ug/L
Cr 267.716†	757.0	10.80	1.43%	[5.0]	ug/L
Cu 324.752†	1804.2	30.59	1.70%	[5.0]	ug/L
Fe 238.204 R†	1110.4	11.91	1.07%	[100]	ug/L
K 766.490 R†	2212.4	127.51	5.76%	[500]	ug/L
Mg 279.077 R†	603.5	7.15	1.19%	[200]	ug/L
Mn 257.610†	3565.1	16.11	0.45%	[5.0]	ug/L
Mo 202.031†	100.3	1.50	1.49%	[5.0]	ug/L
Na 589.592 R†	8883.6	116.47	1.31%	[500]	ug/L
Ni 231.604†	318.9	9.69	3.04%	[5.0]	ug/L
Pb 220.353†	126.8	9.40	7.41%	[5.0]	ug/L
Sb 206.836†	56.8	7.96	14.02%	[10]	ug/L
Se 196.026†	56.9	12.18	21.42%	[10]	ug/L
Ti 334.940 R†	800.4	11.09	1.39%	[10]	ug/L
Tl 190.801†	30.0	6.92	23.08%	[10]	ug/L
V 292.402†	1091.4	44.73	4.10%	[5.0]	ug/L
Zn 206.200†	634.9	5.54	0.87%	[20]	ug/L
Sr 421.552 R†	6752.6	114.22	1.69%	[5]	ug/L
Sn 189.927†	251.3	2.25	0.90%	[40]	ug/L

Sequence No.: 3
Sample ID: ICAL,L2,S27753,1
Analyst:
Logged In Analyst (Original) : met09
Initial Sample Wt:
Dilution:

Autosampler Location: 3
Date Collected: 8/5/2015 5:48:57 AM
Data Type: Reprocessed on 8/5/2015 7:59:03 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L2,S27753,1

Analyte	Back Pressure	Flow
All	196.0 kPa	0.60 L/min

Mean Data: ICAL,L2,S27753,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3559976.7	30714.87	0.86%	100.061	%
Y	411950.7	5944.68	1.44%	101.287	%
Ag 338.289†	4114.0	68.11	1.66%	[20]	ug/L
As 188.979†	381.0	2.61	0.68%	[100]	ug/L
Ba 233.527†	6527.9	37.92	0.58%	[100]	ug/L
Be 313.107†	523739.1	2291.58	0.44%	[100]	ug/L
Cd 214.440†	7511.3	108.67	1.45%	[100]	ug/L
Co 228.616†	4435.1	36.76	0.83%	[100]	ug/L
Cr 267.716†	15439.0	51.30	0.33%	[100]	ug/L
Cu 324.752†	35321.1	371.21	1.05%	[100]	ug/L
Mn 257.610†	72637.2	389.94	0.54%	[100]	ug/L
Mo 202.031†	2025.7	10.39	0.51%	[100]	ug/L
Ni 231.604†	6471.2	98.42	1.52%	[100]	ug/L
Pb 220.353†	2204.5	22.46	1.02%	[100]	ug/L
Sb 206.836†	718.4	3.54	0.49%	[100]	ug/L
Se 196.026†	663.1	9.99	1.51%	[100]	ug/L
Ti 334.940 R†	8125.0	210.67	2.59%	[100]	ug/L
Tl 190.801†	278.6	1.40	0.50%	[100]	ug/L
V 292.402†	22161.4	133.05	0.60%	[100]	ug/L
Zn 206.200†	3140.5	20.20	0.64%	[100]	ug/L
Sr 421.552 R†	142226.8	263.10	0.18%	[100]	ug/L
Sn 189.927†	627.9	6.89	1.10%	[100]	ug/L

Sequence No.: 4
Sample ID: ICAL,L3,S27754,1
Analyst:
Logged In Analyst (Original) : met09
Initial Sample Wt:
Dilution:

Autosampler Location: 4
Date Collected: 8/5/2015 5:53:12 AM
Data Type: Reprocessed on 8/5/2015 7:59:03 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L3,S27754,1

Analyte	Back Pressure	Flow
All	196.0 kPa	0.60 L/min

Mean Data: ICAL,L3,S27754,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3550872.0	16159.42	0.46%	99.8049	%
Y	413683.3	5892.31	1.42%	101.713	%
Ag 338.289†	41402.8	276.74	0.67%	[200]	ug/L
Al 396.153 R†	11974.7	486.55	4.06%	[1000]	ug/L
As 188.979†	3819.4	18.52	0.48%	[1000]	ug/L
B 249.677†	152429.6	1212.72	0.80%	[1000]	ug/L
Ba 233.527†	65539.7	505.60	0.77%	[1000]	ug/L
Be 313.107†	5160836.6	93467.75	1.81%	[1000]	ug/L
Ca 315.887 R†	11479.3	102.53	0.89%	[1000]	ug/L
Cd 214.440†	75992.7	478.60	0.63%	[1000]	ug/L
Co 228.616†	46213.6	285.19	0.62%	[1000]	ug/L
Cr 267.716†	155239.0	1030.77	0.66%	[1000]	ug/L
Cu 324.752†	357715.7	3652.71	1.02%	[1000]	ug/L
Fe 238.204 R†	10933.7	68.52	0.63%	[1000]	ug/L
K 766.490 R†	4353.2	29.37	0.67%	[1000]	ug/L
Mg 279.077 R†	2972.3	29.30	0.99%	[1000]	ug/L
Mn 257.610†	734111.3	2270.37	0.31%	[1000]	ug/L
Mo 202.031†	20246.4	193.85	0.96%	[1000]	ug/L
Na 589.592 R†	17082.9	28.31	0.17%	[1000]	ug/L
Ni 231.604†	67228.6	528.95	0.79%	[1000]	ug/L
Pb 220.353†	22045.8	139.72	0.63%	[1000]	ug/L
Sb 206.836†	7193.8	44.50	0.62%	[1000]	ug/L
Se 196.026†	6637.5	64.48	0.97%	[1000]	ug/L
Ti 334.940 R†	80091.3	1059.01	1.32%	[1000]	ug/L
Tl 190.801†	2756.4	17.91	0.65%	[1000]	ug/L
V 292.402†	222889.9	1822.62	0.82%	[1000]	ug/L
Zn 206.200†	31986.0	158.52	0.50%	[1000]	ug/L
Sr 421.552 R†	1434489.2	3605.85	0.25%	[1000]	ug/L
Sn 189.927†	6322.1	36.42	0.58%	[1000]	ug/L

Sequence No.: 5
Sample ID: ICAL,L4,S27755,1
Analyst:
Logged In Analyst (Original) : met09
Initial Sample Wt:
Dilution:

Autosampler Location: 5
Date Collected: 8/5/2015 5:57:37 AM
Data Type: Reprocessed on 8/5/2015 7:59:04 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L4,S27755,1

Analyte	Back Pressure	Flow
All	197.0 kPa	0.60 L/min

Mean Data: ICAL,L4,S27755,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3456767.6	17922.81	0.52%	97.1599	%
Y	401485.5	5552.39	1.38%	98.7141	%
Ag 338.289†	417018.8	583.74	0.14%	[2000]	ug/L
Al 396.153 R†	118292.9	208.98	0.18%	[10000]	ug/L
As 188.979†	38340.6	465.87	1.22%	[10000]	ug/L
B 249.677†	1542591.8	6100.76	0.40%	[10000]	ug/L
Ba 233.527†	637272.8	3794.01	0.60%	[10000]	ug/L
Ca 315.887 R†	114316.1	705.79	0.62%	[10000]	ug/L
Cd 214.440†	722142.7	6543.22	0.91%	[10000]	ug/L
Co 228.616†	456643.0	1962.27	0.43%	[10000]	ug/L
Cr 267.716†	1520090.2	4104.03	0.27%	[10000]	ug/L
Cu 324.752†	3740500.9	7944.61	0.21%	[10000]	ug/L
Fe 238.204 R†	108246.1	877.07	0.81%	[10000]	ug/L
K 766.490 R†	44914.4	178.87	0.40%	[10000]	ug/L
Mg 279.077 R†	29447.7	105.49	0.36%	[10000]	ug/L
Mn 257.610†	6949525.2	22255.07	0.32%	[10000]	ug/L
Mo 202.031†	201469.3	1273.63	0.63%	[10000]	ug/L
Na 589.592 R†	175808.9	1129.62	0.64%	[10000]	ug/L
Ni 231.604†	658826.7	2927.46	0.44%	[10000]	ug/L
Pb 220.353†	221755.2	2228.40	1.00%	[10000]	ug/L
Sb 206.836†	73641.1	1005.48	1.37%	[10000]	ug/L
Se 196.026†	67085.6	886.19	1.32%	[10000]	ug/L
Ti 334.940 R†	819523.0	10600.97	1.29%	[10000]	ug/L
Tl 190.801†	28011.0	432.09	1.54%	[10000]	ug/L
V 292.402†	2217184.0	4454.45	0.20%	[10000]	ug/L
Zn 206.200†	309982.8	3234.71	1.04%	[10000]	ug/L
Sn 189.927†	63592.6	671.46	1.06%	[10000]	ug/L

Sequence No.: 6
Sample ID: ICAL,L5,S27758,1
Analyst:
Logged In Analyst (Original) : met09
Initial Sample Wt:
Dilution:

Autosampler Location: 6
Date Collected: 8/5/2015 6:04:31 AM
Data Type: Reprocessed on 8/5/2015 7:59:04 AM

Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: ICAL,L5,S27758,1

Analyte	Back Pressure	Flow
All	197.0 kPa	0.60 L/min

Mean Data: ICAL,L5,S27758,1

Analyte	Mean Corrected Intensity	Std.Dev.	RSD	Conc.	Calib Units
Y 371.029	3229376.8	5907.20	0.18%	90.7686	%
Y	396592.3	7526.10	1.90%	97.5110	%
Al 396.153 R†	1140850.9	4830.41	0.42%	[100000]	ug/L
Ca 315.887 R†	1121784.4	3156.46	0.28%	[100000]	ug/L
Fe 238.204 R†	1074219.6	3193.84	0.30%	[100000]	ug/L
K 766.490 R†	458001.7	1903.32	0.42%	[100000]	ug/L
Mg 279.077 R†	290316.6	792.14	0.27%	[100000]	ug/L
Na 589.592 R†	1708706.3	49572.39	2.90%	[100000]	ug/L

Calibration Summary

Analyte	Stds.	Equation	Intercept	Slope	Curvature	Corr. Coef.	Reslope
Ag 338.289	4	Lin Thru 0	0.0	208.5	0.00000	1.000000	
Al 396.153 R	4	Lin Thru 0	0.0	11.41	0.00000	0.999993	
As 188.979	4	Lin Thru 0	0.0	3.834	0.00000	1.000000	
B 249.677	3	Lin Thru 0	0.0	154.2	0.00000	0.999999	
Ba 233.527	4	Lin Thru 0	0.0	63.75	0.00000	0.999996	
Be 313.107	3	Lin Thru 0	0.0	5162	0.00000	0.999999	
Ca 315.887 R	4	Lin Thru 0	0.0	11.22	0.00000	0.999998	
Cd 214.440	4	Lin Thru 0	0.0	72.25	0.00000	0.999987	
Co 228.616	4	Lin Thru 0	0.0	45.67	0.00000	0.999999	
Cr 267.716	4	Lin Thru 0	0.0	152.0	0.00000	0.999998	
Cu 324.752	4	Lin Thru 0	0.0	373.9	0.00000	0.999990	
Fe 238.204 R	4	Lin Thru 0	0.0	10.74	0.00000	1.000000	
K 766.490 R	4	Lin Thru 0	0.0	4.579	0.00000	0.999998	
Mg 279.077 R	4	Lin Thru 0	0.0	2.904	0.00000	0.999999	
Mn 257.610	4	Lin Thru 0	0.0	695.3	0.00000	0.999984	
Mo 202.031	4	Lin Thru 0	0.0	20.15	0.00000	1.000000	
Na 589.592 R	4	Lin Thru 0	0.0	17.09	0.00000	0.999996	
Ni 231.604	4	Lin Thru 0	0.0	65.90	0.00000	0.999998	
Pb 220.353	4	Lin Thru 0	0.0	22.17	0.00000	1.000000	
Sb 206.836	4	Lin Thru 0	0.0	7.362	0.00000	0.999997	
Se 196.026	4	Lin Thru 0	0.0	6.708	0.00000	0.999999	
Ti 334.940 R	4	Lin Thru 0	0.0	81.93	0.00000	0.999997	
Tl 190.801	4	Lin Thru 0	0.0	2.801	0.00000	0.999999	
V 292.402	4	Lin Thru 0	0.0	221.7	0.00000	1.000000	
Zn 206.200	4	Lin Thru 0	0.0	31.01	0.00000	0.999995	
Sr 421.552 R	3	Lin Thru 0	0.0	1434	0.00000	1.000000	
Sn 189.927	4	Lin Thru 0	0.0	6.359	0.00000	1.000000	

Sequence No.: 7 **Autosampler Location: 8**
Sample ID: ICV,s27757 **Date Collected: 8/5/2015 6:11:18 AM**
Analyst: **Data Type: Reprocessed on 8/5/2015 7:59:04 AM**
Logged In Analyst (Original) : met09
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICV,s27757

Analyte	Back Pressure	Flow
All	197.0 kPa	0.60 L/min

Mean Data: ICV,s27757

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3476392.3	97.7115	%	0.73642				0.75%
Y	404955.9	99.5674	%	0.64038				0.64%
Ag 338.289†	205026.5	983.367	ug/L	1.1474	983.367	ug/L	1.1474	0.12%
QC value within limits for Ag 338.289 Recovery = 98.34%								
Al 396.153 R†	226593.5	19854.4	ug/L	89.59	19854.4	ug/L	89.59	0.45%
QC value within limits for Al 396.153 R Recovery = 99.27%								
As 188.979†	18778.2	4897.93	ug/L	51.050	4897.93	ug/L	51.050	1.04%
QC value within limits for As 188.979 Recovery = 97.96%								
B 249.677†	774416.7	5020.84	ug/L	1.101	5020.84	ug/L	1.101	0.02%
QC value within limits for B 249.677 Recovery = 100.42%								
Ba 233.527†	317561.7	4981.72	ug/L	10.515	4981.72	ug/L	10.515	0.21%
QC value within limits for Ba 233.527 Recovery = 99.63%								
Be 313.107†	2606169.5	504.916	ug/L	0.9485	504.916	ug/L	0.9485	0.19%
QC value within limits for Be 313.107 Recovery = 100.98%								
Ca 315.887 R†	223724.6	19939.8	ug/L	97.29	19939.8	ug/L	97.29	0.49%
QC value within limits for Ca 315.887 R Recovery = 99.70%								
Cd 214.440†	368190.7	5095.93	ug/L	11.234	5095.93	ug/L	11.234	0.22%
QC value within limits for Cd 214.440 Recovery = 101.92%								
Co 228.616†	225237.1	4922.54	ug/L	10.590	4922.54	ug/L	10.590	0.22%
QC value within limits for Co 228.616 Recovery = 98.45%								
Cr 267.716†	751621.0	4943.53	ug/L	10.088	4943.53	ug/L	10.088	0.20%
QC value within limits for Cr 267.716 Recovery = 98.87%								
Cu 324.752†	1853393.7	4957.11	ug/L	5.669	4957.11	ug/L	5.669	0.11%
QC value within limits for Cu 324.752 Recovery = 99.14%								
Fe 238.204 R†	214090.2	19928.3	ug/L	109.43	19928.3	ug/L	109.43	0.55%
QC value within limits for Fe 238.204 R Recovery = 99.64%								
K 766.490 R†	88165.0	19253.7	ug/L	114.88	19253.7	ug/L	114.88	0.60%
QC value within limits for K 766.490 R Recovery = 96.27%								
Mg 279.077 R†	57831.6	19917.3	ug/L	148.02	19917.3	ug/L	148.02	0.74%
QC value within limits for Mg 279.077 R Recovery = 99.59%								
Mn 257.610†	3504811.1	5040.40	ug/L	8.547	5040.40	ug/L	8.547	0.17%
QC value within limits for Mn 257.610 Recovery = 100.81%								
Mo 202.031†	99743.2	4950.55	ug/L	2.431	4950.55	ug/L	2.431	0.05%
QC value within limits for Mo 202.031 Recovery = 99.01%								
Na 589.592 R†	337604.4	19752.2	ug/L	520.61	19752.2	ug/L	520.61	2.64%
QC value within limits for Na 589.592 R Recovery = 98.76%								
Ni 231.604†	324686.8	4927.27	ug/L	12.288	4927.27	ug/L	12.288	0.25%
QC value within limits for Ni 231.604 Recovery = 98.55%								
Pb 220.353†	106760.2	4814.61	ug/L	79.070	4814.61	ug/L	79.070	1.64%
QC value within limits for Pb 220.353 Recovery = 96.29%								
Sb 206.836†	35849.9	4869.33	ug/L	55.300	4869.33	ug/L	55.300	1.14%
QC value within limits for Sb 206.836 Recovery = 97.39%								
Se 196.026†	32524.2	4848.69	ug/L	56.493	4848.69	ug/L	56.493	1.17%
QC value within limits for Se 196.026 Recovery = 96.97%								
Ti 334.940 R†	402725.2	4915.25	ug/L	32.637	4915.25	ug/L	32.637	0.66%
QC value within limits for Ti 334.940 R Recovery = 98.31%								
Tl 190.801†	13659.4	4877.21	ug/L	77.326	4877.21	ug/L	77.326	1.59%
QC value within limits for Tl 190.801 Recovery = 97.54%								
V 292.402†	1103958.1	4978.84	ug/L	4.772	4978.84	ug/L	4.772	0.10%
QC value within limits for V 292.402 Recovery = 99.58%								
Zn 206.200†	154779.4	4991.58	ug/L	6.612	4991.58	ug/L	6.612	0.13%
QC value within limits for Zn 206.200 Recovery = 99.83%								
Sr 421.552 R†	715409.3	498.8	ug/L	12.91	0.499	mg/L	0.0129	2.59%
QC value within limits for Sr 421.552 R Recovery = 99.75%								
Sn 189.927†	30861.2	4853.23	ug/L	45.692	4.85323	mg/L	0.045692	0.94%
QC value within limits for Sn 189.927 Recovery = 97.06%								

All analyte(s) passed QC.

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818009.1 File : met09_sn_ Time : 05-AUG-2015 06:36
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.815	ug/L	16	30	
Manganese	A	5.000	5.441	ug/L	9	30	
Iron	R	100.0	103.6	ug/L	4	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3584548	0.75

Sequence No.: 8 **Autosampler Location: 7**
Sample ID: CRI,s27759 **Date Collected: 8/5/2015 6:36:05 AM**
Analyst: **Data Type: Reprocessed on 8/5/2015 7:59:05 AM**
Logged In Analyst (Original) : met09
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CRI,s27759

Analyte	Back Pressure	Flow
All	197.0 kPa	0.60 L/min

Mean Data: CRI,s27759

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3584547.7	100.751	%	0.4793				0.48%
Y	408092.0	100.338	%	1.1758				1.17%
Ag 338.289†	1103.7	5.29368	ug/L	0.248510	5.29368	ug/L	0.248510	4.69%
QC value within limits for Ag 338.289 Recovery = 105.87%								
Al 396.153 R†	1259.0	110.311	ug/L	4.5608	110.311	ug/L	4.5608	4.13%
QC value within limits for Al 396.153 R Recovery = 110.31%								
As 188.979†	22.3	5.81469	ug/L	0.886670	5.81469	ug/L	0.886670	15.25%
QC value within limits for As 188.979 Recovery = 116.29%								
B 249.677†	18232.3	118.207	ug/L	0.9525	118.207	ug/L	0.9525	0.81%
QC value within limits for B 249.677 Recovery = 118.21%								
Ba 233.527†	340.3	5.33801	ug/L	0.085123	5.33801	ug/L	0.085123	1.59%
QC value within limits for Ba 233.527 Recovery = 106.76%								
Be 313.107†	10909.2	2.11353	ug/L	0.006841	2.11353	ug/L	0.006841	0.32%
QC value within limits for Be 313.107 Recovery = 105.68%								
Ca 315.887 R†	2320.6	206.824	ug/L	2.7892	206.824	ug/L	2.7892	1.35%
QC value within limits for Ca 315.887 R Recovery = 103.41%								
Cd 214.440†	392.2	5.42766	ug/L	0.056923	5.42766	ug/L	0.056923	1.05%
QC value within limits for Cd 214.440 Recovery = 108.55%								
Co 228.616†	251.2	5.48220	ug/L	0.085114	5.48220	ug/L	0.085114	1.55%
QC value within limits for Co 228.616 Recovery = 109.64%								
Cr 267.716†	785.7	5.16776	ug/L	0.118687	5.16776	ug/L	0.118687	2.30%
QC value within limits for Cr 267.716 Recovery = 103.36%								
Cu 324.752†	1875.9	5.01741	ug/L	0.414357	5.01741	ug/L	0.414357	8.26%
QC value within limits for Cu 324.752 Recovery = 100.35%								
Fe 238.204 R†	1112.6	103.562	ug/L	1.1707	103.562	ug/L	1.1707	1.13%
QC value within limits for Fe 238.204 R Recovery = 103.56%								
K 766.490 R†	2158.0	471.272	ug/L	35.0830	471.272	ug/L	35.0830	7.44%
QC value within limits for K 766.490 R Recovery = 94.25%								
Mg 279.077 R†	606.8	208.973	ug/L	2.2063	208.973	ug/L	2.2063	1.06%
QC value within limits for Mg 279.077 R Recovery = 104.49%								
Mn 257.610†	3783.1	5.44061	ug/L	0.037633	5.44061	ug/L	0.037633	0.69%
QC value within limits for Mn 257.610 Recovery = 108.81%								
Mo 202.031†	107.8	5.34953	ug/L	0.153258	5.34953	ug/L	0.153258	2.86%
QC value within limits for Mo 202.031 Recovery = 106.99%								
Na 589.592 R†	9052.1	529.613	ug/L	14.7418	529.613	ug/L	14.7418	2.78%
QC value within limits for Na 589.592 R Recovery = 105.92%								
Ni 231.604†	302.2	4.58534	ug/L	0.296671	4.58534	ug/L	0.296671	6.47%
QC value within limits for Ni 231.604 Recovery = 91.71%								
Pb 220.353†	121.9	5.49703	ug/L	0.371400	5.49703	ug/L	0.371400	6.76%
QC value within limits for Pb 220.353 Recovery = 109.94%								
Sb 206.836†	60.1	8.15833	ug/L	0.944981	8.15833	ug/L	0.944981	11.58%
QC value within limits for Sb 206.836 Recovery = 81.58%								
Se 196.026†	65.1	9.70815	ug/L	1.249978	9.70815	ug/L	1.249978	12.88%
QC value within limits for Se 196.026 Recovery = 97.08%								
Ti 334.940 R†	830.7	10.1383	ug/L	0.27496	10.1383	ug/L	0.27496	2.71%
QC value within limits for Ti 334.940 R Recovery = 101.38%								
Tl 190.801†	30.2	10.7895	ug/L	0.61815	10.7895	ug/L	0.61815	5.73%
QC value within limits for Tl 190.801 Recovery = 107.89%								
V 292.402†	1209.5	5.45471	ug/L	0.182249	5.45471	ug/L	0.182249	3.34%
QC value within limits for V 292.402 Recovery = 109.09%								
Zn 206.200†	619.3	19.9713	ug/L	0.22965	19.9713	ug/L	0.22965	1.15%
QC value within limits for Zn 206.200 Recovery = 99.86%								
Sr 421.552 R†	6798.1	4.739	ug/L	0.1196	0.005	mg/L	0.0001	2.52%
QC value within limits for Sr 421.552 R Recovery = 94.79%								
Sn 189.927†	256.5	40.3381	ug/L	0.56260	0.0403381	mg/L	0.00056260	1.39%
QC value within limits for Sn 189.927 Recovery = 100.85%								

All analyte(s) passed QC.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818010.1 File : met09_sn_ Time : 05-AUG-2015 06:41
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3565668	0.22

Sequence No.: 9 **Autosampler Location: 221**
Sample ID: ICB **Date Collected: 8/5/2015 6:41:19 AM**
Analyst: **Data Type: Reprocessed on 8/5/2015 7:59:05 AM**
Logged In Analyst (Original) : met09
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICB

Analyte	Back Pressure	Flow
All	196.0 kPa	0.60 L/min

Mean Data: ICB

Analyte	Mean Corrected Intensity	Calib. Conc.	Calib. Units	Std.Dev.	Sample Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3565667.7	100.221	%	0.3899				0.39%
Y	404986.3	99.5749	%	0.78783				0.79%
Ag 338.289†	94.1	0.451349	ug/L	0.5544002	0.451349	ug/L	0.5544002	122.83%
QC value within limits for Ag 338.289 Recovery = Not calculated								
Al 396.153 R†	-120.4	-10.5487	ug/L	10.66210	-10.5487	ug/L	10.66210	101.08%
QC value within limits for Al 396.153 R Recovery = Not calculated								
As 188.979†	2.4	0.624971	ug/L	0.1717930	0.624971	ug/L	0.1717930	27.49%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	2818.6	18.2744	ug/L	0.26562	18.2744	ug/L	0.26562	1.45%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	1.6	0.0247296	ug/L	0.03421172	0.0247296	ug/L	0.03421172	138.34%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	319.8	0.0619493	ug/L	0.02945961	0.0619493	ug/L	0.02945961	47.55%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-37.8	-3.36624	ug/L	0.620784	-3.36624	ug/L	0.620784	18.44%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	2.3	0.0312821	ug/L	0.03005716	0.0312821	ug/L	0.03005716	96.08%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	14.4	0.315714	ug/L	0.0807266	0.315714	ug/L	0.0807266	25.57%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	-11.2	-0.0738724	ug/L	0.11320689	-0.0738724	ug/L	0.11320689	153.25%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	-22.3	-0.0597139	ug/L	0.23428358	-0.0597139	ug/L	0.23428358	392.34%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	-16.1	-1.49563	ug/L	0.623761	-1.49563	ug/L	0.623761	41.71%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	50.7	11.0626	ug/L	18.39730	11.0626	ug/L	18.39730	166.30%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	-3.3	-1.12160	ug/L	3.330648	-1.12160	ug/L	3.330648	296.95%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	37.1	0.0533122	ug/L	0.00480881	0.0533122	ug/L	0.00480881	9.02%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	1.1	0.0546750	ug/L	0.16066012	0.0546750	ug/L	0.16066012	293.85%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	357.8	20.9352	ug/L	2.92477	20.9352	ug/L	2.92477	13.97%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	-2.5	-0.0385153	ug/L	0.13392091	-0.0385153	ug/L	0.13392091	347.71%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	11.6	0.521371	ug/L	0.2462043	0.521371	ug/L	0.2462043	47.22%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	-10.3	-1.40441	ug/L	1.214592	-1.40441	ug/L	1.214592	86.48%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	7.8	1.15781	ug/L	2.455118	1.15781	ug/L	2.455118	212.05%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	11.1	0.135290	ug/L	0.1451651	0.135290	ug/L	0.1451651	107.30%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	-0.6	-0.205064	ug/L	0.8481273	-0.205064	ug/L	0.8481273	413.59%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	27.4	0.123678	ug/L	0.2751052	0.123678	ug/L	0.2751052	222.44%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-18.4	-0.592487	ug/L	0.0641566	-0.592487	ug/L	0.0641566	10.83%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-664.6	-0.463	ug/L	0.0383	0.000	mg/L	0.0000	8.26%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	5.6	0.876045	ug/L	0.7562818	0.0008760	mg/L	0.00075628	86.33%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818011.1 File : met09_sn_ Time : 05-AUG-2015 06:46
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[2.754]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	18930	ug/L	95
Copper	A	20000	21900	ug/L	110
Manganese	A	20000	18430	ug/L	92
Nickel	A	20000	18090	ug/L	90
Vanadium	A	20000	19620	ug/L	98
Aluminum	R	500000	513000	ug/L	103
Calcium	R	500000	486800	ug/L	97
Iron	R	200000	189200	ug/L	95
Magnesium	R	500000	504700	ug/L	101
Titanium	R	20000	20400	ug/L	102

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3034797	-14.70

Sequence No.: 10 **Autosampler Location: 9**
Sample ID: ICSA,s27611 **Date Collected: 8/5/2015 6:46:34 AM**
Analyst: **Data Type: Reprocessed on 8/5/2015 7:59:06 AM**
Logged In Analyst (Original) : met09
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ICSA,s27611

Analyte	Back Pressure	Flow
All	196.0 kPa	0.60 L/min

Mean Data: ICSA,s27611

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3034796.9	85.2995	%	0.98813				1.16%
Y	351148.6	86.3377	%	5.24063				6.07%
Ag 338.289†	-253.1	-1.21409	ug/L	0.820280	-1.21409	ug/L	0.820280	67.56%
QC value within limits for Ag 338.289 Recovery = Not calculated								
Al 396.153 R†	5854316.1	512964	ug/L	31863.6	512964	ug/L	31863.6	6.21%
QC value within limits for Al 396.153 R Recovery = 102.59%								
As 188.979†	10.6	2.75408	ug/L	2.492982	2.75408	ug/L	2.492982	90.52%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	-1975.0	-12.8047	ug/L	1.04680	-12.8047	ug/L	1.04680	8.18%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	-18.2	-0.285767	ug/L	0.4962657	-0.285767	ug/L	0.4962657	173.66%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	1574.4	0.305023	ug/L	0.0401926	0.305023	ug/L	0.0401926	13.18%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	5461459.8	486762	ug/L	28425.9	486762	ug/L	28425.9	5.84%
QC value within limits for Ca 315.887 R Recovery = 97.35%								
Cd 214.440†	69.9	0.966832	ug/L	0.1606250	0.966832	ug/L	0.1606250	16.61%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	1963.8	4.23456	ug/L	0.481667	4.23456	ug/L	0.481667	11.37%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	2878683.3	18933.6	ug/L	144.01	18933.6	ug/L	144.01	0.76%
QC value within limits for Cr 267.716 Recovery = 94.67%								
Cu 324.752†	8189274.7	21903.1	ug/L	287.94	21903.1	ug/L	287.94	1.31%
QC value within limits for Cu 324.752 Recovery = 109.52%								
Fe 238.204 R†	2032347.3	189178	ug/L	13899.4	189178	ug/L	13899.4	7.35%
QC value within limits for Fe 238.204 R Recovery = 94.59%								
K 766.490 R†	-207.5	-45.3143	ug/L	13.89235	-45.3143	ug/L	13.89235	30.66%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	1465580.1	504749	ug/L	37899.7	504749	ug/L	37899.7	7.51%
QC value within limits for Mg 279.077 R Recovery = 100.95%								
Mn 257.610†	12814668.5	18429.3	ug/L	225.20	18429.3	ug/L	225.20	1.22%
QC value within limits for Mn 257.610 Recovery = 92.15%								
Mo 202.031†	28.5	1.41670	ug/L	0.233857	1.41670	ug/L	0.233857	16.51%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	1266.2	74.0804	ug/L	17.25899	74.0804	ug/L	17.25899	23.30%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	1192275.0	18093.3	ug/L	128.00	18093.3	ug/L	128.00	0.71%
QC value within limits for Ni 231.604 Recovery = 90.47%								
Pb 220.353†	26.4	1.19215	ug/L	0.500352	1.19215	ug/L	0.500352	41.97%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	38.3	5.20785	ug/L	1.320538	5.20785	ug/L	1.320538	25.36%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	18.5	2.75885	ug/L	2.345675	2.75885	ug/L	2.345675	85.02%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	1671679.7	20402.8	ug/L	583.78	20402.8	ug/L	583.78	2.86%
QC value within limits for Ti 334.940 R Recovery = 102.01%								
Tl 190.801†	-18.1	-6.45501	ug/L	2.333452	-6.45501	ug/L	2.333452	36.15%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	4349476.7	19616.1	ug/L	125.80	19616.1	ug/L	125.80	0.64%
QC value within limits for V 292.402 Recovery = 98.08%								
Zn 206.200†	292.1	9.42172	ug/L	2.868301	9.42172	ug/L	2.868301	30.44%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	6606.1	4.606	ug/L	0.3208	0.005	mg/L	0.0003	6.96%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	91.7	14.4273	ug/L	2.15738	0.0144273	mg/L	0.00215738	14.95%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818012.1 File : met09_sn_ Time : 05-AUG-2015 08:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	541.3	ug/L	8	20	
Manganese	A	500.0	520.7	ug/L	4	20	
Iron	R	200000	179300	ug/L	-10		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3025923	-14.95

Sequence No.: 1 | **Autosampler Location: 1**
Sample ID: ICALBLK, | **Date Collected: 8/5/2015 8:02:07 AM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**

User canceled analysis.

Sequence No.: 11 | **Autosampler Location: 10**
Sample ID: ICSAB,s27612 | **Date Collected: 8/5/2015 8:02:18 AM**
Analyst: | **Data Type: Original**
Initial Sample Wt: | **Initial Sample Vol:**
Dilution: | **Sample Prep Vol:**

Nebulizer Parameters: ICSAB,s27612

Analyte	Back Pressure	Flow
All	197.0 kPa	0.60 L/min

Mean Data: ICSAB,s27612

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3025923.1	85.0501	%	0.10360				0.12%
Y	380726.3	93.6100	%	1.15421				1.23%
Ag 338.289†	238515.0	1143.99	ug/L	1.767	1143.99	ug/L	1.767	0.15%
QC value within limits for Ag 338.289 Recovery = 114.40%								
Al 396.153 R†	5637278.4	493946	ug/L	6490.6	493946	ug/L	6490.6	1.31%
QC value within limits for Al 396.153 R Recovery = 98.79%								
As 188.979†	2075.4	541.334	ug/L	4.0503	541.334	ug/L	4.0503	0.75%
QC value within limits for As 188.979 Recovery = 108.27%								
B 249.677†	-3343.8	-21.6789	ug/L	2.39761	-21.6789	ug/L	2.39761	11.06%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	33149.4	520.028	ug/L	0.9068	520.028	ug/L	0.9068	0.17%
QC value within limits for Ba 233.527 Recovery = 104.01%								
Be 313.107†	2608666.9	505.399	ug/L	0.9814	505.399	ug/L	0.9814	0.19%
QC value within limits for Be 313.107 Recovery = 101.08%								
Ca 315.887 R†	5172923.6	461045	ug/L	6728.3	461045	ug/L	6728.3	1.46%
QC value within limits for Ca 315.887 R Recovery = 92.21%								
Cd 214.440†	72004.3	996.572	ug/L	5.0951	996.572	ug/L	5.0951	0.51%
QC value within limits for Cd 214.440 Recovery = 99.66%								
Co 228.616†	23736.2	480.126	ug/L	1.1876	480.126	ug/L	1.1876	0.25%
QC value within limits for Co 228.616 Recovery = 96.03%								
Cr 267.716†	75178.3	494.460	ug/L	1.0485	494.460	ug/L	1.0485	0.21%
QC value within limits for Cr 267.716 Recovery = 98.89%								
Cu 324.752†	211624.2	566.012	ug/L	1.3792	566.012	ug/L	1.3792	0.24%
QC value within limits for Cu 324.752 Recovery = 113.20%								
Fe 238.204 R†	1926010.7	179280	ug/L	3295.5	179280	ug/L	3295.5	1.84%
QC value within limits for Fe 238.204 R Recovery = 89.64%								
K 766.490 R†	-330.3	-72.1338	ug/L	6.63423	-72.1338	ug/L	6.63423	9.20%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	1385469.1	477158	ug/L	8796.9	477158	ug/L	8796.9	1.84%
QC value within limits for Mg 279.077 R Recovery = 95.43%								
Mn 257.610†	362053.7	520.683	ug/L	1.2635	520.683	ug/L	1.2635	0.24%
QC value within limits for Mn 257.610 Recovery = 104.14%								
Mo 202.031†	10023.5	497.495	ug/L	0.9168	497.495	ug/L	0.9168	0.18%
QC value within limits for Mo 202.031 Recovery = 99.50%								
Na 589.592 R†	545.0	31.8839	ug/L	5.07060	31.8839	ug/L	5.07060	15.90%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	62350.6	946.198	ug/L	2.3643	946.198	ug/L	2.3643	0.25%
QC value within limits for Ni 231.604 Recovery = 94.62%								
Pb 220.353†	20363.6	918.344	ug/L	2.0462	918.344	ug/L	2.0462	0.22%
QC value within limits for Pb 220.353 Recovery = 91.83%								
Sb 206.836†	4053.7	550.598	ug/L	3.6546	550.598	ug/L	3.6546	0.66%
QC value within limits for Sb 206.836 Recovery = 110.12%								
Se 196.026†	3421.2	510.024	ug/L	10.4746	510.024	ug/L	10.4746	2.05%
QC value within limits for Se 196.026 Recovery = 102.00%								
Ti 334.940 R†	1708125.8	20847.6	ug/L	535.27	20847.6	ug/L	535.27	2.57%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	1371.7	489.796	ug/L	3.6473	489.796	ug/L	3.6473	0.74%
QC value within limits for Tl 190.801 Recovery = 97.96%								
V 292.402†	114895.1	518.176	ug/L	0.6779	518.176	ug/L	0.6779	0.13%
QC value within limits for V 292.402 Recovery = 103.64%								
Zn 206.200†	29176.9	940.943	ug/L	3.3155	940.943	ug/L	3.3155	0.35%
QC value within limits for Zn 206.200 Recovery = 94.09%								

```
Sr 421.552 R†         723265.1       504.2 ug/L          9.18       0.504 mg/L        0.0092   1.82%
   QC value within limits for Sr 421.552 R  Recovery = 100.85%
Sn 189.927†              101.6     15.9842 ug/L       0.93367   0.0159842 mg/L    0.00093367   5.84%
   QC value within limits for Sn 189.927  Recovery = Not calculated
All analyte(s) passed QC.
```

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818117.2 File : met09_sn_ Time : 05-AUG-2015 19:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6662	5000	4781	ug/L	-4	10	
Manganese	A	717.11	702.47	5000	5051	ug/L	1	10	
Iron	R	10.901	11.096	20000	20660	ug/L	3	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3186226	-10.44

Sequence No.: 1
Sample ID: ICALBLK,
Analyst:
Initial Sample Wt:
Dilution:
User canceled analysis.

Autosampler Location: 1
Date Collected: 8/5/2015 7:01:14 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Sequence No.: 22
Sample ID: CCV,s27756
Analyst:
Initial Sample Wt:
Dilution:

Autosampler Location: 218
Date Collected: 8/5/2015 7:02:56 PM
Data Type: Original
Initial Sample Vol:
Sample Prep Vol:

Nebulizer Parameters: CCV,s27756

Analyte	Back Pressure	Flow
All	202.0 kPa	0.60 L/min

Mean Data: CCV,s27756

Analyte	Mean Corrected Intensity	Calib. Conc.	Units	Std.Dev.	Sample Conc.	Units	Std.Dev.	RSD
Y 371.029	3186226.0	89.5558	%	0.67344				0.75%
Y	360142.0	88.5489	%	0.43433				0.49%
Ag 338.289†	208183.8	998.510	ug/L	1.3633	998.510	ug/L	1.3633	0.14%
QC value within limits for Ag 338.289 Recovery = 99.85%								
Al 396.153 R†	225173.1	19730.0	ug/L	47.67	19730.0	ug/L	47.67	0.24%
QC value within limits for Al 396.153 R Recovery = 98.65%								
As 188.979†	18331.2	4781.34	ug/L	80.657	4781.34	ug/L	80.657	1.69%
QC value within limits for As 188.979 Recovery = 95.63%								
B 249.677†	762332.3	4942.49	ug/L	6.715	4942.49	ug/L	6.715	0.14%
QC value within limits for B 249.677 Recovery = 98.85%								
Ba 233.527†	320197.0	5023.06	ug/L	8.804	5023.06	ug/L	8.804	0.18%
QC value within limits for Ba 233.527 Recovery = 100.46%								
Be 313.107†	2629960.1	509.525	ug/L	0.8882	509.525	ug/L	0.8882	0.17%
QC value within limits for Be 313.107 Recovery = 101.90%								
Ca 315.887 R†	227349.3	20262.9	ug/L	102.18	20262.9	ug/L	102.18	0.50%
QC value within limits for Ca 315.887 R Recovery = 101.31%								
Cd 214.440†	361552.5	5004.05	ug/L	14.420	5004.05	ug/L	14.420	0.29%
QC value within limits for Cd 214.440 Recovery = 100.08%								
Co 228.616†	224262.8	4901.37	ug/L	13.394	4901.37	ug/L	13.394	0.27%
QC value within limits for Co 228.616 Recovery = 98.03%								
Cr 267.716†	758215.0	4986.90	ug/L	15.116	4986.90	ug/L	15.116	0.30%
QC value within limits for Cr 267.716 Recovery = 99.74%								
Cu 324.752†	1846374.5	4938.33	ug/L	11.765	4938.33	ug/L	11.765	0.24%
QC value within limits for Cu 324.752 Recovery = 98.77%								
Fe 238.204 R†	221911.2	20656.3	ug/L	96.15	20656.3	ug/L	96.15	0.47%
QC value within limits for Fe 238.204 R Recovery = 103.28%								
K 766.490 R†	90755.5	19819.5	ug/L	71.32	19819.5	ug/L	71.32	0.36%
QC value within limits for K 766.490 R Recovery = 99.10%								
Mg 279.077 R†	59617.3	20532.3	ug/L	107.44	20532.3	ug/L	107.44	0.52%
QC value within limits for Mg 279.077 R Recovery = 102.66%								
Mn 257.610†	3512359.1	5051.26	ug/L	9.594	5051.26	ug/L	9.594	0.19%
QC value within limits for Mn 257.610 Recovery = 101.03%								
Mo 202.031†	97228.7	4825.74	ug/L	10.403	4825.74	ug/L	10.403	0.22%
QC value within limits for Mo 202.031 Recovery = 96.51%								
Na 589.592 R†	333758.7	19527.2	ug/L	57.79	19527.2	ug/L	57.79	0.30%
QC value within limits for Na 589.592 R Recovery = 97.64%								
Ni 231.604†	324224.3	4920.25	ug/L	7.769	4920.25	ug/L	7.769	0.16%
QC value within limits for Ni 231.604 Recovery = 98.41%								
Pb 220.353†	106130.9	4786.23	ug/L	34.539	4786.23	ug/L	34.539	0.72%
QC value within limits for Pb 220.353 Recovery = 95.72%								
Sb 206.836†	34677.0	4710.01	ug/L	65.067	4710.01	ug/L	65.067	1.38%
QC value within limits for Sb 206.836 Recovery = 94.20%								
Se 196.026†	31103.9	4636.95	ug/L	84.512	4636.95	ug/L	84.512	1.82%
QC value within limits for Se 196.026 Recovery = 92.74%								
Ti 334.940 R†	395642.2	4828.80	ug/L	34.204	4828.80	ug/L	34.204	0.71%
QC value within limits for Ti 334.940 R Recovery = 96.58%								
Tl 190.801†	13438.5	4798.33	ug/L	13.243	4798.33	ug/L	13.243	0.28%
QC value within limits for Tl 190.801 Recovery = 95.97%								
V 292.402†	1117220.6	5038.65	ug/L	8.174	5038.65	ug/L	8.174	0.16%
QC value within limits for V 292.402 Recovery = 100.77%								
Zn 206.200†	150880.4	4865.84	ug/L	17.514	4865.84	ug/L	17.514	0.36%
QC value within limits for Zn 206.200 Recovery = 97.32%								

```
Sr 421.552 R†         716898.8       499.8 ug/L          2.09       0.500 mg/L        0.0021   0.42%
   QC value within limits for Sr 421.552 R  Recovery = 99.96%
Sn 189.927†            29944.0     4709.00 ug/L        40.314     4.70900 mg/L      0.040314   0.86%
   QC value within limits for Sn 189.927  Recovery = 94.18%
All analyte(s) passed QC.
```

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818118.2 File : met09_sn_ Time : 05-AUG-2015 19:09
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3365340	-5.41

Sequence No.: 23 **Autosampler Location: 221**
Sample ID: ccb **Date Collected: 8/5/2015 7:09:49 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ccb

Analyte	Back Pressure	Flow
All	202.0 kPa	0.60 L/min

Mean Data: ccb

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3365339.9	94.5902	%	0.76706				0.81%
Y	366238.6	90.0479	%	0.69530				0.77%
Ag 338.289†	28.3	0.135689	ug/L	0.8831123	0.135689	ug/L	0.8831123	650.84%
QC value within limits for Ag 338.289 Recovery = Not calculated								
Al 396.153 R†	-167.7	-14.6907	ug/L	2.63506	-14.6907	ug/L	2.63506	17.94%
QC value within limits for Al 396.153 R Recovery = Not calculated								
As 188.979†	4.6	1.20456	ug/L	0.068141	1.20456	ug/L	0.068141	5.66%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	2061.8	13.3674	ug/L	0.56046	13.3674	ug/L	0.56046	4.19%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	4.1	0.0650210	ug/L	0.04311401	0.0650210	ug/L	0.04311401	66.31%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-110.8	-0.0214691	ug/L	0.02793673	-0.0214691	ug/L	0.02793673	130.13%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-26.7	-2.38168	ug/L	0.793355	-2.38168	ug/L	0.793355	33.31%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	18.8	0.260418	ug/L	0.0397061	0.260418	ug/L	0.0397061	15.25%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	9.3	0.203202	ug/L	0.0628298	0.203202	ug/L	0.0628298	30.92%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	21.2	0.139286	ug/L	0.0671661	0.139286	ug/L	0.0671661	48.22%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	11.6	0.0309667	ug/L	0.34090729	0.0309667	ug/L	0.34090729	>999.9%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	2.1	0.191510	ug/L	0.3585678	0.191510	ug/L	0.3585678	187.23%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	-10.5	-2.28435	ug/L	14.857523	-2.28435	ug/L	14.857523	650.41%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	-21.7	-7.47840	ug/L	4.588742	-7.47840	ug/L	4.588742	61.36%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	17.4	0.0249786	ug/L	0.01572123	0.0249786	ug/L	0.01572123	62.94%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	3.1	0.152779	ug/L	0.0718818	0.152779	ug/L	0.0718818	47.05%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	428.8	25.0849	ug/L	10.03954	25.0849	ug/L	10.03954	40.02%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	3.4	0.0512561	ug/L	0.02316144	0.0512561	ug/L	0.02316144	45.19%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	22.5	1.01493	ug/L	0.231502	1.01493	ug/L	0.231502	22.81%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	5.0	0.677282	ug/L	2.0005978	0.677282	ug/L	2.0005978	295.39%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	10.1	1.51305	ug/L	1.742599	1.51305	ug/L	1.742599	115.17%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	24.4	0.297256	ug/L	0.0843451	0.297256	ug/L	0.0843451	28.37%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	0.7	0.263191	ug/L	0.5237223	0.263191	ug/L	0.5237223	198.99%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	79.5	0.358391	ug/L	0.2806899	0.358391	ug/L	0.2806899	78.32%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-7.4	-0.238137	ug/L	0.1036907	-0.238137	ug/L	0.1036907	43.54%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-792.5	-0.552	ug/L	0.0266	-0.001	mg/L	0.0000	4.81%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	8.9	1.40639	ug/L	0.564189	0.0014064	mg/L	0.00056419	40.12%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818130.1 File : met09_sn_ Time : 05-AUG-2015 20:25
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6162	5000	4716	ug/L	-6	10	
Manganese	A	717.11	707.18	5000	5085	ug/L	2	10	
Iron	R	10.901	11.123	20000	20710	ug/L	4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3139318	-11.76

Sequence No.: 34 **Autosampler Location: 218**
Sample ID: CCV,s27756 **Date Collected: 8/5/2015 8:25:29 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: CCV,s27756

Analyte	Back Pressure	Flow
All	206.0 kPa	0.60 L/min

Mean Data: CCV,s27756

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3139317.8	88.2373	%	0.57050				0.65%
Y	345853.9	85.0358	%	0.20034				0.24%
Ag 338.289†	207765.1	996.502	ug/L	1.8435	996.502	ug/L	1.8435	0.18%
QC value within limits for Ag 338.289 Recovery = 99.65%								
Al 396.153 R†	228421.7	20014.6	ug/L	167.54	20014.6	ug/L	167.54	0.84%
QC value within limits for Al 396.153 R Recovery = 100.07%								
As 188.979†	18081.2	4716.13	ug/L	50.347	4716.13	ug/L	50.347	1.07%
QC value within limits for As 188.979 Recovery = 94.32%								
B 249.677†	762644.6	4944.52	ug/L	36.002	4944.52	ug/L	36.002	0.73%
QC value within limits for B 249.677 Recovery = 98.89%								
Ba 233.527†	322439.3	5058.24	ug/L	25.281	5058.24	ug/L	25.281	0.50%
QC value within limits for Ba 233.527 Recovery = 101.16%								
Be 313.107†	2667056.3	516.712	ug/L	3.1627	516.712	ug/L	3.1627	0.61%
QC value within limits for Be 313.107 Recovery = 103.34%								
Ca 315.887 R†	227951.9	20316.6	ug/L	198.65	20316.6	ug/L	198.65	0.98%
QC value within limits for Ca 315.887 R Recovery = 101.58%								
Cd 214.440†	361232.0	4999.61	ug/L	42.938	4999.61	ug/L	42.938	0.86%
QC value within limits for Cd 214.440 Recovery = 99.99%								
Co 228.616†	225688.0	4932.80	ug/L	28.817	4932.80	ug/L	28.817	0.58%
QC value within limits for Co 228.616 Recovery = 98.66%								
Cr 267.716†	760812.4	5003.99	ug/L	32.630	5003.99	ug/L	32.630	0.65%
QC value within limits for Cr 267.716 Recovery = 100.08%								
Cu 324.752†	1845980.7	4937.28	ug/L	5.602	4937.28	ug/L	5.602	0.11%
QC value within limits for Cu 324.752 Recovery = 98.75%								
Fe 238.204 R†	222451.8	20706.6	ug/L	216.60	20706.6	ug/L	216.60	1.05%
QC value within limits for Fe 238.204 R Recovery = 103.53%								
K 766.490 R†	91428.4	19966.4	ug/L	190.33	19966.4	ug/L	190.33	0.95%
QC value within limits for K 766.490 R Recovery = 99.83%								
Mg 279.077 R†	59356.2	20442.4	ug/L	196.18	20442.4	ug/L	196.18	0.96%
QC value within limits for Mg 279.077 R Recovery = 102.21%								
Mn 257.610†	3535913.9	5085.13	ug/L	25.178	5085.13	ug/L	25.178	0.50%
QC value within limits for Mn 257.610 Recovery = 101.70%								
Mo 202.031†	95689.6	4749.35	ug/L	32.915	4749.35	ug/L	32.915	0.69%
QC value within limits for Mo 202.031 Recovery = 94.99%								
Na 589.592 R†	335313.2	19618.2	ug/L	171.74	19618.2	ug/L	171.74	0.88%
QC value within limits for Na 589.592 R Recovery = 98.09%								
Ni 231.604†	325928.0	4946.11	ug/L	26.855	4946.11	ug/L	26.855	0.54%
QC value within limits for Ni 231.604 Recovery = 98.92%								
Pb 220.353†	105681.5	4765.96	ug/L	49.134	4765.96	ug/L	49.134	1.03%
QC value within limits for Pb 220.353 Recovery = 95.32%								
Sb 206.836†	34189.9	4643.86	ug/L	39.504	4643.86	ug/L	39.504	0.85%
QC value within limits for Sb 206.836 Recovery = 92.88%								
Se 196.026†	30795.4	4590.95	ug/L	50.390	4590.95	ug/L	50.390	1.10%
QC value within limits for Se 196.026 Recovery = 91.82%								
Ti 334.940 R†	385959.0	4710.62	ug/L	16.595	4710.62	ug/L	16.595	0.35%
QC value within limits for Ti 334.940 R Recovery = 94.21%								
Tl 190.801†	13358.8	4769.87	ug/L	13.984	4769.87	ug/L	13.984	0.29%
QC value within limits for Tl 190.801 Recovery = 95.40%								
V 292.402†	1121890.3	5059.71	ug/L	15.962	5059.71	ug/L	15.962	0.32%
QC value within limits for V 292.402 Recovery = 101.19%								
Zn 206.200†	150030.0	4838.41	ug/L	45.165	4838.41	ug/L	45.165	0.93%
QC value within limits for Zn 206.200 Recovery = 96.77%								
Sr 421.552 R†	726816.7	506.7	ug/L	10.40	0.507	mg/L	0.0104	2.05%
QC value within limits for Sr 421.552 R Recovery = 101.34%								
Sn 189.927†	29575.0	4650.97	ug/L	25.327	4.65097	mg/L	0.025327	0.54%
QC value within limits for Sn 189.927 Recovery = 93.02%								

All analyte(s) passed QC.

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268557 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818131.1 File : met09_sn_ Time : 05-AUG-2015 20:32
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3302005	-7.19

Sequence No.: 35 **Autosampler Location: 221**
Sample ID: ccb **Date Collected: 8/5/2015 8:32:23 PM**
Analyst: **Data Type: Original**
Initial Sample Wt: **Initial Sample Vol:**
Dilution: **Sample Prep Vol:**

Nebulizer Parameters: ccb

Analyte	Back Pressure	Flow
All	207.0 kPa	0.60 L/min

Mean Data: ccb

Analyte	Mean Corrected Intensity	Conc.	Calib. Units	Std.Dev.	Conc.	Sample Units	Std.Dev.	RSD
Y 371.029	3302004.7	92.8100	%	0.82389				0.89%
Y	357380.9	87.8700	%	1.44354				1.64%
Ag 338.289†	-48.4	-0.232124	ug/L	0.2121279	-0.232124	ug/L	0.2121279	91.39%
QC value within limits for Ag 338.289 Recovery = Not calculated								
Al 396.153 R†	-170.3	-14.9206	ug/L	9.54321	-14.9206	ug/L	9.54321	63.96%
QC value within limits for Al 396.153 R Recovery = Not calculated								
As 188.979†	7.7	1.99601	ug/L	0.877657	1.99601	ug/L	0.877657	43.97%
QC value within limits for As 188.979 Recovery = Not calculated								
B 249.677†	3705.1	24.0216	ug/L	0.03590	24.0216	ug/L	0.03590	0.15%
QC value within limits for B 249.677 Recovery = Not calculated								
Ba 233.527†	7.3	0.114000	ug/L	0.0484311	0.114000	ug/L	0.0484311	42.48%
QC value within limits for Ba 233.527 Recovery = Not calculated								
Be 313.107†	-228.0	-0.0441645	ug/L	0.00019412	-0.0441645	ug/L	0.00019412	0.44%
QC value within limits for Be 313.107 Recovery = Not calculated								
Ca 315.887 R†	-29.0	-2.58083	ug/L	1.237970	-2.58083	ug/L	1.237970	47.97%
QC value within limits for Ca 315.887 R Recovery = Not calculated								
Cd 214.440†	19.7	0.272241	ug/L	0.0614934	0.272241	ug/L	0.0614934	22.59%
QC value within limits for Cd 214.440 Recovery = Not calculated								
Co 228.616†	7.0	0.152081	ug/L	0.0609009	0.152081	ug/L	0.0609009	40.05%
QC value within limits for Co 228.616 Recovery = Not calculated								
Cr 267.716†	24.6	0.161487	ug/L	0.0597771	0.161487	ug/L	0.0597771	37.02%
QC value within limits for Cr 267.716 Recovery = Not calculated								
Cu 324.752†	157.9	0.422430	ug/L	0.3948889	0.422430	ug/L	0.3948889	93.48%
QC value within limits for Cu 324.752 Recovery = Not calculated								
Fe 238.204 R†	-11.7	-1.09001	ug/L	0.311802	-1.09001	ug/L	0.311802	28.61%
QC value within limits for Fe 238.204 R Recovery = Not calculated								
K 766.490 R†	208.6	45.5604	ug/L	19.91970	45.5604	ug/L	19.91970	43.72%
QC value within limits for K 766.490 R Recovery = Not calculated								
Mg 279.077 R†	-22.9	-7.90261	ug/L	0.969710	-7.90261	ug/L	0.969710	12.27%
QC value within limits for Mg 279.077 R Recovery = Not calculated								
Mn 257.610†	64.5	0.0927418	ug/L	0.02125008	0.0927418	ug/L	0.02125008	22.91%
QC value within limits for Mn 257.610 Recovery = Not calculated								
Mo 202.031†	5.2	0.258241	ug/L	0.0481590	0.258241	ug/L	0.0481590	18.65%
QC value within limits for Mo 202.031 Recovery = Not calculated								
Na 589.592 R†	1670.8	97.7539	ug/L	3.51148	97.7539	ug/L	3.51148	3.59%
QC value within limits for Na 589.592 R Recovery = Not calculated								
Ni 231.604†	5.0	0.0759422	ug/L	0.16210894	0.0759422	ug/L	0.16210894	213.46%
QC value within limits for Ni 231.604 Recovery = Not calculated								
Pb 220.353†	24.4	1.10179	ug/L	0.115811	1.10179	ug/L	0.115811	10.51%
QC value within limits for Pb 220.353 Recovery = Not calculated								
Sb 206.836†	7.8	1.06173	ug/L	1.459094	1.06173	ug/L	1.459094	137.43%
QC value within limits for Sb 206.836 Recovery = Not calculated								
Se 196.026†	4.9	0.726942	ug/L	4.0481612	0.726942	ug/L	4.0481612	556.88%
QC value within limits for Se 196.026 Recovery = Not calculated								
Ti 334.940 R†	25.5	0.311000	ug/L	0.0623454	0.311000	ug/L	0.0623454	20.05%
QC value within limits for Ti 334.940 R Recovery = Not calculated								
Tl 190.801†	1.8	0.656525	ug/L	1.1367511	0.656525	ug/L	1.1367511	173.15%
QC value within limits for Tl 190.801 Recovery = Not calculated								
V 292.402†	31.2	0.140542	ug/L	0.2385323	0.140542	ug/L	0.2385323	169.72%
QC value within limits for V 292.402 Recovery = Not calculated								
Zn 206.200†	-11.6	-0.373801	ug/L	0.0286980	-0.373801	ug/L	0.0286980	7.68%
QC value within limits for Zn 206.200 Recovery = Not calculated								
Sr 421.552 R†	-569.3	-0.397	ug/L	0.0272	0.000	mg/L	0.0000	6.86%
QC value within limits for Sr 421.552 R Recovery = Not calculated								
Sn 189.927†	12.7	1.99648	ug/L	0.350166	0.0019965	mg/L	0.00035017	17.54%
QC value within limits for Sn 189.927 Recovery = Not calculated								

All analyte(s) passed QC.

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 268558
ANALYTICAL REPORT

Versar, Inc. 100 Hartsfield Centre Parkway Atlanta, GA 30354	Project : N62473-11-D-2215 Location : MINS BGMP Level : III Contract # : N62473-11-D-2215

Sample ID	Lab ID
B742-L-WC-072915	268558-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Tracy Babjar Date: 08/11/2015

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**268558**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**MINS BGMP**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

This data package contains sample and QC results for one water sample, requested for the above referenced project on 07/29/15. See attached cooler receipt form for any sample receipt problems or discrepancies.

All qualified data are compliant with appropriate corrective actions specified in Standard Operating Procedures. The Standard Operating Procedures are available upon request.

Manual integration documentation may be found in the "Case Narrative Addendum: Manual Integrations" sections.

Volatile Organics by GC/MS (EPA 8260C):
High response was observed for Freon 12 in the ICV analyzed 06/25/15 17:05; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for carbon disulfide and Freon 113 in the ICV analyzed 06/25/15 17:39; affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low response was observed for Freon 12 in the ICV analyzed 07/07/15 18:56; affected data was qualified with "b".

Low response was observed for Freon 113 in the CCV analyzed 07/30/15 12:08; this analyte met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; this analyte was not detected at or above the RL in the associated samples, and affected data was qualified with "b".

Low responses were observed for many analytes in the CCV analyzed 07/31/15 12:35; these analytes met minimum response criteria, and affected data was qualified with "b". High response was observed for vinyl acetate; affected data was qualified with "b".

High recovery was observed for chloromethane in the BS for batch 225639; the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated sample.

High surrogate recoveries were observed for 1,2-dichloroethane-d4 in B742-L-WC-072915 (lab # 268558-001) and the MS of DIC85W07-072815 (lab #

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**268558**
Client:	**Versar, Inc.**
Project:	**N62473-11-D-2215**
Location:	**MINS BGMP**
Request Date:	**07/29/15**
Samples Received:	**07/29/15**

Volatile Organics by GC/MS (EPA 8260C):
268557-001).

B742-L-WC-072915 (lab # 268558-001) was diluted due to foaming.

No other analytical problems were encountered.

Metals (EPA 6010C):
High recovery was observed for arsenic in the post digest spike of DIC85W06-072815 (lab # 268556-002); the BS/BSD were within limits.

No other analytical problems were encountered.

Chain of Custody

CHAIN OF CUSTODY

Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

2323 Fifth Street
Berkeley, CA 94710

Phone (510) 486-0900
Fax (510) 486-0532

C&T LOGIN # 268558

Chain of Custody # _____

Project No: N02473-11-D-2215
Project Name: MINS BGMP
Project P. O. No: ATLH001-01-004-CTL
EDD Format: Report Level ☐ II ☑ III ☐ IV
Turnaround Time: ☐ RUSH _____ ☑ Standard

Sampler: M. Mandell
Report To: T. Churoy, H. Wollenburg
Company: TMW EOCR
Telephone: 484-243-2779
Email:

Lab No.	Sample ID.	SAMPLING Date Collected	SAMPLING Time Collected	MATRIX Water	MATRIX Solid	MATRIX	MATRIX	# of Containers	CHEMICAL PRESERVATIVE HCl	H2SO4	HNO3	NaOH	None	ANALYTICAL REQUEST VOCs (8260)	As, Mn, Fe (6010)
	BT42-L-WC-072915	072915	1400	X				5	3				2	X	X

Notes:
Lab filter on Metals analysis

SAMPLE RECEIPT
☐ Intact
☐ Cold
☑ On Ice
☐ Ambient

RELINQUISHED BY:
M. Mandell DATE: 7/29/15 TIME: 1508
DATE: TIME:
DATE: TIME:

RECEIVED BY:
Pat Humphrey DATE: 7/29/15 TIME: 15:08
DATE: TIME:
DATE: TIME:

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 268558 Date Received 7/29/15 Number of coolers 1
Client JMWERRG Project N62473-11-D-2215

Date Opened 7/29 By (print) FBJ (sign) [illegible]
Date Logged in 7/29 By (print) [illegible] (sign) [illegible]

1. Did cooler come with a shipping slip (airbill, etc)_____ YES NO
   Shipping info_____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
   How many _____ Name_____ Date_____
2B. Were custody seals intact upon arrival? _____ YES NO N/A
3. Were custody papers dry and intact when received? _____ YES NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form)___ YES NO
6. Indicate the packing in cooler: (if other, describe)_____

   ☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
   ☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C

   Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C) 1.5°

   ☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

   ☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present?_____ YES NO
   If YES, what time were they transferred to freezer?_____
9. Did all bottles arrive unbroken/unopened?_____ YES NO
10. Are there any missing / extra samples? _____ YES NO
11. Are samples in the appropriate containers for indicated tests? _____ YES NO
12. Are sample labels present, in good condition and complete? _____ YES NO
13. Do the sample labels agree with custody papers? _____ YES NO
14. Was sufficient amount of sample sent for tests requested? _____ YES NO
15. Are the samples appropriately preserved? _____ YES NO N/A
16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A
17. Did you document your preservative check? _____ YES NO N/A
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A
21. Was the client contacted concerning this sample delivery? _____ YES NO
   If YES, Who was called?_____ By_____ Date:_____

COMMENTS

_____

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 268558

Results for any subcontracted analyses are not included in this summary.

Client : Versar, Inc.
Project : N62473-11-D-2215
Location : MINS BGMP

Client Sample ID : B742-L-WC-072915 Laboratory Sample ID : 268558-001

Analyte	Result	Flags	LOQ	DL	Units	Basis	IDF	Method	Prep Method
Arsenic	6.3		5.0	1.5	ug/L	DISS.	1.000	EPA 6010C	METHOD
Iron	4,800		100	20	ug/L	DISS.	1.000	EPA 6010C	METHOD
Manganese	1,700		5.0	1.0	ug/L	DISS.	1.000	EPA 6010C	METHOD

Laboratory Job Number 268558

ANALYTICAL REPORT

Volatile Organics by GC/MS

Matrix: Water

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	B742-L-WC-072915	Diln Fac:	250.0
Lab ID:	268558-001	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result		LOQ	DL	Batch#	Analyzed
Freon 12	50	U	250	25	225639	07/30/15
Chloromethane	100	U	250	68	225639	07/30/15
Vinyl Chloride	50	U	130	25	225639	07/30/15
Bromomethane	100	U	250	46	225639	07/30/15
Chloroethane	100	U	250	67	225639	07/30/15
Trichlorofluoromethane	100	U	250	57	225639	07/30/15
Acetone	1,000	U	2,500	830	225639	07/30/15
Freon 113	110	U	500	39	225691	07/31/15
1,1-Dichloroethene	50	U	130	38	225639	07/30/15
Methylene Chloride	50	U	2,500	44	225639	07/30/15
Carbon Disulfide	100	U	130	25	225691	07/31/15
MTBE	50	U	130	28	225639	07/30/15
trans-1,2-Dichloroethene	50	U	130	38	225639	07/30/15
Vinyl Acetate	500	U	2,500	290	225639	07/30/15
1,1-Dichloroethane	50	U	130	40	225639	07/30/15
2-Butanone	500	U	2,500	130	225639	07/30/15
cis-1,2-Dichloroethene	50	U	130	31	225639	07/30/15
2,2-Dichloropropane	50	U	130	36	225639	07/30/15
Chloroform	50	U	130	25	225639	07/30/15
Bromochloromethane	50	U	130	34	225639	07/30/15
1,1,1-Trichloroethane	50	U	130	32	225639	07/30/15
1,1-Dichloropropene	50	U	130	32	225639	07/30/15
Carbon Tetrachloride	50	U	130	31	225639	07/30/15
1,2-Dichloroethane	50	U	130	27	225639	07/30/15
Benzene	50	U	130	25	225639	07/30/15
Trichloroethene	50	U	130	25	225639	07/30/15
1,2-Dichloropropane	50	U	130	34	225639	07/30/15
Bromodichloromethane	50	U	130	30	225639	07/30/15
Dibromomethane	50	U	130	37	225639	07/30/15
4-Methyl-2-Pentanone	250	U	2,500	160	225639	07/30/15
cis-1,3-Dichloropropene	50	U	130	26	225639	07/30/15
Toluene	50	U	130	25	225639	07/30/15
trans-1,3-Dichloropropene	50	U	130	35	225639	07/30/15
1,1,2-Trichloroethane	50	U	130	38	225639	07/30/15
2-Hexanone	250	U	2,500	130	225639	07/30/15
1,3-Dichloropropane	50	U	130	37	225639	07/30/15
Tetrachloroethene	50	U	130	25	225639	07/30/15
Dibromochloromethane	50	U	130	37	225639	07/30/15
1,2-Dibromoethane	50	U	130	34	225639	07/30/15
Chlorobenzene	50	U	130	32	225639	07/30/15
1,1,1,2-Tetrachloroethane	50	U	130	26	225639	07/30/15
Ethylbenzene	50	U	130	25	225639	07/30/15
m,p-Xylenes	100	U	130	36	225639	07/30/15
o-Xylene	50	U	130	25	225639	07/30/15
Styrene	50	U	130	25	225639	07/30/15
Bromoform	100	U	250	36	225639	07/30/15
Isopropylbenzene	50	U	130	25	225639	07/30/15
1,1,2,2-Tetrachloroethane	50	U	130	30	225639	07/30/15
1,2,3-Trichloropropane	50	U	130	39	225639	07/30/15
Propylbenzene	50	U	130	25	225639	07/30/15
Bromobenzene	50	U	130	27	225639	07/30/15
1,3,5-Trimethylbenzene	50	U	130	25	225639	07/30/15
2-Chlorotoluene	50	U	130	25	225639	07/30/15

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	B742-L-WC-072915	Diln Fac:	250.0
Lab ID:	268558-001	Sampled:	07/29/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L		

Analyte	Result	LOQ	DL	Batch#	Analyzed
4-Chlorotoluene	50 U	130	25	225639	07/30/15
tert-Butylbenzene	50 U	130	25	225639	07/30/15
1,2,4-Trimethylbenzene	50 U	130	25	225639	07/30/15
sec-Butylbenzene	50 U	130	25	225639	07/30/15
para-Isopropyl Toluene	50 U	130	25	225639	07/30/15
1,3-Dichlorobenzene	50 U	130	28	225639	07/30/15
1,4-Dichlorobenzene	50 U	130	25	225639	07/30/15
n-Butylbenzene	50 U	130	25	225639	07/30/15
1,2-Dichlorobenzene	50 U	130	25	225639	07/30/15
1,2-Dibromo-3-Chloropropane	250 U	500	63	225639	07/30/15
1,2,4-Trichlorobenzene	50 U	130	33	225639	07/30/15
Hexachlorobutadiene	100 U	500	35	225639	07/30/15
Naphthalene	100 U	500	27	225639	07/30/15
1,2,3-Trichlorobenzene	50 U	130	35	225639	07/30/15

Surrogate	%REC	Limits	Batch#	Analyzed
Dibromofluoromethane	108	85-115	225639	07/30/15
Dibromofluoromethane	116 *	85-115	225691	07/31/15
1,2-Dichloroethane-d4	129 *	70-120	225639	07/30/15
1,2-Dichloroethane-d4	115	70-120	225691	07/31/15
Toluene-d8	102	85-120	225639	07/30/15
Toluene-d8	101	85-120	225691	07/31/15
Bromofluorobenzene	99	75-120	225639	07/30/15
Bromofluorobenzene	108	75-120	225691	07/31/15

*= Value outside of QC limits; see narrative
U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797679

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	10.71 b	107	30-155
Chloromethane	10.00	12.92	129 *	40-125
Vinyl Chloride	10.00	11.89	119	50-145
Bromomethane	10.00	11.97	120	30-145
Chloroethane	10.00	10.81	108	60-135
Trichlorofluoromethane	10.00	9.518	95	60-145
Acetone	12.50	9.862	79	40-140
Freon 113	12.50	10.63 b	85	61-138
1,1-Dichloroethene	12.50	11.72	94	70-130
Methylene Chloride	12.50	13.02	104	55-140
Carbon Disulfide	12.50	11.54 b	92	35-160
MTBE	12.50	12.21	98	65-125
trans-1,2-Dichloroethene	12.50	12.90	103	60-140
Vinyl Acetate	12.50	19.13 b	153	60-194
1,1-Dichloroethane	12.50	13.18	105	70-135
2-Butanone	12.50	11.47	92	30-150
cis-1,2-Dichloroethene	12.50	12.94	104	70-125
2,2-Dichloropropane	12.50	15.15	121	70-135
Chloroform	12.50	13.73	110	65-135
Bromochloromethane	12.50	12.52	100	65-130
1,1,1-Trichloroethane	12.50	13.47	108	65-130
1,1-Dichloropropene	12.50	12.78	102	75-130
Carbon Tetrachloride	12.50	13.61	109	65-140
1,2-Dichloroethane	12.50	13.39	107	70-130
Benzene	12.50	13.14	105	80-120
Trichloroethene	12.50	12.66	101	70-125
1,2-Dichloropropane	12.50	12.04	96	75-125
Bromodichloromethane	12.50	12.97	104	75-120
Dibromomethane	12.50	12.15	97	75-125
4-Methyl-2-Pentanone	12.50	11.44	92	60-135
cis-1,3-Dichloropropene	12.50	12.33	99	70-130
Toluene	12.50	13.17	105	75-120
trans-1,3-Dichloropropene	12.50	11.99	96	55-140
1,1,2-Trichloroethane	12.50	12.56	101	75-125
2-Hexanone	12.50	11.91	95	55-130
1,3-Dichloropropane	12.50	12.82	103	75-125
Tetrachloroethene	12.50	13.80	110	45-150
Dibromochloromethane	12.50	12.28	98	60-135
1,2-Dibromoethane	12.50	12.47	100	80-120
Chlorobenzene	12.50	13.26	106	80-120
1,1,1,2-Tetrachloroethane	12.50	12.97	104	80-130
Ethylbenzene	12.50	14.01	112	75-125
m,p-Xylenes	25.00	26.00	104	75-130
o-Xylene	12.50	13.26	106	80-120
Styrene	12.50	12.87	103	65-135
Bromoform	12.50	11.34	91	70-130
Isopropylbenzene	12.50	12.87	103	75-125
1,1,2,2-Tetrachloroethane	12.50	11.93	95	65-130
1,2,3-Trichloropropane	12.50	11.83	95	75-125
Propylbenzene	12.50	13.04	104	70-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
Bromobenzene	12.50	12.93	103	75-125
1,3,5-Trimethylbenzene	12.50	14.33	115	75-130
2-Chlorotoluene	12.50	14.05	112	75-125
4-Chlorotoluene	12.50	14.25	114	75-130
tert-Butylbenzene	12.50	13.11	105	70-130
1,2,4-Trimethylbenzene	12.50	13.41	107	75-130
sec-Butylbenzene	12.50	12.84	103	70-125
para-Isopropyl Toluene	12.50	13.38	107	75-130
1,3-Dichlorobenzene	12.50	12.74	102	75-125
1,4-Dichlorobenzene	12.50	12.91	103	75-125
n-Butylbenzene	12.50	13.79	110	70-135
1,2-Dichlorobenzene	12.50	13.12	105	70-120
1,2-Dibromo-3-Chloropropane	12.50	10.87	87	50-130
1,2,4-Trichlorobenzene	12.50	12.06	96	65-135
Hexachlorobutadiene	12.50	12.52	100	50-140
Naphthalene	12.50	10.14	81	55-140
1,2,3-Trichlorobenzene	12.50	12.01	96	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	102	85-115
1,2-Dichloroethane-d4	110	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	102	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797680

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	9.888 b	99	30-155	8	30
Chloromethane	10.00	11.87	119	40-125	9	30
Vinyl Chloride	10.00	11.63	116	50-145	2	30
Bromomethane	10.00	11.08	111	30-145	8	30
Chloroethane	10.00	9.696	97	60-135	11	30
Trichlorofluoromethane	10.00	8.988	90	60-145	6	30
Acetone	12.50	9.657	77	40-140	2	30
Freon 113	12.50	10.24 b	82	61-138	4	30
1,1-Dichloroethene	12.50	11.24	90	70-130	4	30
Methylene Chloride	12.50	12.57	101	55-140	3	30
Carbon Disulfide	12.50	11.06 b	88	35-160	4	30
MTBE	12.50	11.95	96	65-125	2	30
trans-1,2-Dichloroethene	12.50	12.18	97	60-140	6	30
Vinyl Acetate	12.50	19.45 b	156	60-194	2	30
1,1-Dichloroethane	12.50	12.43	99	70-135	6	30
2-Butanone	12.50	11.46	92	30-150	0	30
cis-1,2-Dichloroethene	12.50	12.60	101	70-125	3	30
2,2-Dichloropropane	12.50	13.91	111	70-135	8	30
Chloroform	12.50	13.28	106	65-135	3	30
Bromochloromethane	12.50	12.35	99	65-130	1	30
1,1,1-Trichloroethane	12.50	12.84	103	65-130	5	30
1,1-Dichloropropene	12.50	12.49	100	75-130	2	30
Carbon Tetrachloride	12.50	13.30	106	65-140	2	30
1,2-Dichloroethane	12.50	12.95	104	70-130	3	30
Benzene	12.50	12.58	101	80-120	4	30
Trichloroethene	12.50	12.34	99	70-125	3	30
1,2-Dichloropropane	12.50	11.95	96	75-125	1	30
Bromodichloromethane	12.50	12.37	99	75-120	5	30
Dibromomethane	12.50	12.09	97	75-125	1	30
4-Methyl-2-Pentanone	12.50	11.38	91	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.36	99	70-130	0	30
Toluene	12.50	12.70	102	75-120	4	30
trans-1,3-Dichloropropene	12.50	12.14	97	55-140	1	30
1,1,2-Trichloroethane	12.50	12.71	102	75-125	1	30
2-Hexanone	12.50	11.66	93	55-130	2	30
1,3-Dichloropropane	12.50	12.08	97	75-125	6	30
Tetrachloroethene	12.50	13.07	105	45-150	5	30
Dibromochloromethane	12.50	11.61	93	60-135	6	30
1,2-Dibromoethane	12.50	12.36	99	80-120	1	30
Chlorobenzene	12.50	13.01	104	80-120	2	30
1,1,1,2-Tetrachloroethane	12.50	12.41	99	80-130	4	30
Ethylbenzene	12.50	13.00	104	75-125	7	30
m,p-Xylenes	25.00	25.91	104	75-130	0	30
o-Xylene	12.50	13.31	106	80-120	0	30
Styrene	12.50	13.38	107	65-135	4	30
Bromoform	12.50	11.34	91	70-130	0	30
Isopropylbenzene	12.50	13.27	106	75-125	3	30
1,1,2,2-Tetrachloroethane	12.50	12.56	100	65-130	5	30
1,2,3-Trichloropropane	12.50	12.00	96	75-125	1	30
Propylbenzene	12.50	13.52	108	70-130	4	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225639
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Bromobenzene	12.50	13.30	106	75-125	3	30
1,3,5-Trimethylbenzene	12.50	13.87	111	75-130	3	30
2-Chlorotoluene	12.50	13.25	106	75-125	6	30
4-Chlorotoluene	12.50	13.87	111	75-130	3	30
tert-Butylbenzene	12.50	12.99	104	70-130	1	30
1,2,4-Trimethylbenzene	12.50	13.41	107	75-130	0	30
sec-Butylbenzene	12.50	13.09	105	70-125	2	30
para-Isopropyl Toluene	12.50	12.98	104	75-130	3	30
1,3-Dichlorobenzene	12.50	13.17	105	75-125	3	30
1,4-Dichlorobenzene	12.50	13.41	107	75-125	4	30
n-Butylbenzene	12.50	13.53	108	70-135	2	30
1,2-Dichlorobenzene	12.50	13.31	106	70-120	1	30
1,2-Dibromo-3-Chloropropane	12.50	10.99	88	50-130	1	30
1,2,4-Trichlorobenzene	12.50	11.94	95	65-135	1	30
Hexachlorobutadiene	12.50	12.46	100	50-140	0	30
Naphthalene	12.50	10.64	85	55-140	5	30
1,2,3-Trichlorobenzene	12.50	12.19	98	55-140	1	30

Surrogate	%REC	Limits
Dibromofluoromethane	103	85-115
1,2-Dichloroethane-d4	108	70-120
Toluene-d8	100	85-120
Bromofluorobenzene	96	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797681	Batch#:	225639
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.2 U b	1.0	0.1
Chloromethane	0.4 U	1.0	0.3
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.4 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.3
Trichlorofluoromethane	0.4 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.2 U b	2.0	0.1
1,1-Dichloroethene	0.2 U	0.5	0.2
Methylene Chloride	0.2 U	10	0.2
Carbon Disulfide	0.2 U b	0.5	0.1
MTBE	0.2 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.2
Vinyl Acetate	2.0 U b	10	1.1
1,1-Dichloroethane	0.2 U	0.5	0.2
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.2 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.2 U	0.5	0.1
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.2 U	0.5	0.1
Carbon Tetrachloride	0.2 U	0.5	0.1
1,2-Dichloroethane	0.2 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.1
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.2 U	0.5	0.1
4-Methyl-2-Pentanone	1.0 U	10	0.7
cis-1,3-Dichloropropene	0.2 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.2 U	0.5	0.1
1,1,2-Trichloroethane	0.2 U	0.5	0.2
2-Hexanone	1.0 U	10	0.5
1,3-Dichloropropane	0.2 U	0.5	0.1
Tetrachloroethene	0.2 U	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.1
m,p-Xylenes	0.4 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.4 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.2 U	0.5	0.1
1,2,3-Trichloropropane	0.2 U	0.5	0.2
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.2 U	0.5	0.1
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797681	Batch#:	225639
Matrix:	Water	Analyzed:	07/30/15
Units:	ug/L		

Analyte	Result	LOQ	DL
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.1
tert-Butylbenzene	0.2 U	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.1
sec-Butylbenzene	0.2 U	0.5	0.1
para-Isopropyl Toluene	0.2 U	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.2 U	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	1.0 U	2.0	0.3
1,2,4-Trichlorobenzene	0.2 U	0.5	0.1
Hexachlorobutadiene	0.4 U	2.0	0.1
Naphthalene	0.4 U	2.0	0.1
1,2,3-Trichlorobenzene	0.2 U	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	104	85-115
1,2-Dichloroethane-d4	115	70-120
Toluene-d8	98	85-120
Bromofluorobenzene	101	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Type: MS Lab ID: QC797770

Analyte	MSS Result	Spiked	Result	%REC	Limits
Freon 12	<0.5000	50.00	54.69 b	109	30-155
Chloromethane	<1.362	50.00	47.57	95	40-125
Vinyl Chloride	<0.5000	50.00	54.17	108	50-145
Bromomethane	<0.9149	50.00	21.52	43	30-145
Chloroethane	<1.337	50.00	50.48	101	60-135
Trichlorofluoromethane	<1.140	50.00	49.30	99	60-145
Acetone	<16.50	62.50	49.24	79	40-140
Freon 113	<0.6550	62.50	48.76 b	78	61-138
1,1-Dichloroethene	<0.7594	62.50	53.99	86	70-130
Methylene Chloride	<0.8785	62.50	66.13	106	55-140
Carbon Disulfide	0.8440	62.50	57.76 b	91	35-160
MTBE	<0.5594	62.50	66.91	107	65-125
trans-1,2-Dichloroethene	<0.7549	62.50	64.45	103	60-140
Vinyl Acetate	<5.726	62.50	104.8 b	168	60-194
1,1-Dichloroethane	<0.7936	62.50	67.33	108	70-135
2-Butanone	<2.500	62.50	61.58	99	30-150
cis-1,2-Dichloroethene	<0.6275	62.50	65.94	105	70-125
2,2-Dichloropropane	<0.7200	62.50	72.61	116	70-135
Chloroform	<0.5000	62.50	75.54	121	65-135
Bromochloromethane	<0.6862	62.50	60.26	96	65-130
1,1,1-Trichloroethane	<0.6305	62.50	73.64	118	65-130
1,1-Dichloropropene	<0.6495	62.50	66.70	107	75-130
Carbon Tetrachloride	<0.6154	62.50	72.56	116	65-140
1,2-Dichloroethane	<0.5353	62.50	79.32	127	70-130
Benzene	<0.5000	62.50	68.73	110	80-120
Trichloroethene	<0.5000	62.50	65.90	105	70-125
1,2-Dichloropropane	<0.6857	62.50	66.60	107	75-125
Bromodichloromethane	<0.6061	62.50	71.67	115	75-120
Dibromomethane	<0.7321	62.50	68.94	110	75-125
4-Methyl-2-Pentanone	<3.269	62.50	67.18	107	60-135
cis-1,3-Dichloropropene	<0.5273	62.50	67.08	107	70-130
Toluene	<0.5000	62.50	63.98	102	75-120
trans-1,3-Dichloropropene	<0.6962	62.50	61.92	99	55-140
1,1,2-Trichloroethane	<0.7697	62.50	67.89	109	75-125
2-Hexanone	<2.500	62.50	63.10	101	55-130
1,3-Dichloropropane	<0.7442	62.50	67.27	108	75-125
Tetrachloroethene	<0.5000	62.50	64.06	103	45-150
Dibromochloromethane	<0.7303	62.50	64.08	103	60-135
1,2-Dibromoethane	<0.6707	62.50	64.93	104	80-120
Chlorobenzene	10.86	62.50	78.31	108	80-120
1,1,1,2-Tetrachloroethane	<0.5227	62.50	70.71	113	80-130
Ethylbenzene	<0.5000	62.50	70.87	113	75-125
m,p-Xylenes	<0.7268	125.0	132.4	106	75-130
o-Xylene	<0.5000	62.50	69.78	112	80-120
Styrene	<0.5000	62.50	64.35	103	65-135
Bromoform	<0.7223	62.50	55.97	90	70-130
Isopropylbenzene	<0.5000	62.50	59.90	96	75-125
1,1,2,2-Tetrachloroethane	<0.5983	62.50	62.92	101	65-130

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,2,3-Trichloropropane	<0.7701	62.50	61.81	99	75-125
Propylbenzene	<0.5000	62.50	63.88	102	70-130
Bromobenzene	<0.5398	62.50	64.36	103	75-125
1,3,5-Trimethylbenzene	<0.5000	62.50	67.97	109	75-130
2-Chlorotoluene	<0.5000	62.50	67.92	109	75-125
4-Chlorotoluene	<0.5000	62.50	68.82	110	75-130
tert-Butylbenzene	<0.5000	62.50	60.94	98	70-130
1,2,4-Trimethylbenzene	<0.5000	62.50	65.61	105	75-130
sec-Butylbenzene	<0.5000	62.50	59.74	96	70-125
para-Isopropyl Toluene	<0.5000	62.50	59.91	96	75-130
1,3-Dichlorobenzene	1.458	62.50	65.58	103	75-125
1,4-Dichlorobenzene	7.140	62.50	69.92	100	75-125
n-Butylbenzene	<0.5000	62.50	62.89	101	70-135
1,2-Dichlorobenzene	0.6685	62.50	65.90	104	70-120
1,2-Dibromo-3-Chloropropane	<1.250	62.50	59.72	96	50-130
1,2,4-Trichlorobenzene	<0.6627	62.50	59.95	96	65-135
Hexachlorobutadiene	<0.6969	62.50	55.80	89	50-140
Naphthalene	<0.5322	62.50	53.24	85	55-140
1,2,3-Trichlorobenzene	<0.6978	62.50	63.19	101	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	110	85-115
1,2-Dichloroethane-d4	127 *	70-120
Toluene-d8	104	85-120
Bromofluorobenzene	101	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Type: MSD Lab ID: QC797771

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	50.00	51.71 b	103	30-155	6	30
Chloromethane	50.00	46.00	92	40-125	3	30
Vinyl Chloride	50.00	51.30	103	50-145	5	30
Bromomethane	50.00	25.25	51	30-145	16	30
Chloroethane	50.00	49.84	100	60-135	1	30
Trichlorofluoromethane	50.00	46.49	93	60-145	6	30
Acetone	62.50	44.44	71	40-140	10	30
Freon 113	62.50	47.40 b	76	61-138	3	30
1,1-Dichloroethene	62.50	51.43	82	70-130	5	30
Methylene Chloride	62.50	65.15	104	55-140	1	30
Carbon Disulfide	62.50	53.65 b	84	35-160	7	30
MTBE	62.50	61.48	98	65-125	8	30
trans-1,2-Dichloroethene	62.50	57.53	92	60-140	11	30
Vinyl Acetate	62.50	106.9 b	171	60-194	2	30
1,1-Dichloroethane	62.50	66.51	106	70-135	1	30
2-Butanone	62.50	59.31	95	30-150	4	30
cis-1,2-Dichloroethene	62.50	65.15	104	70-125	1	30
2,2-Dichloropropane	62.50	69.49	111	70-135	4	30
Chloroform	62.50	68.03	109	65-135	10	30
Bromochloromethane	62.50	59.33	95	65-130	2	30
1,1,1-Trichloroethane	62.50	64.82	104	65-130	13	30
1,1-Dichloropropene	62.50	60.58	97	75-130	10	30
Carbon Tetrachloride	62.50	64.17	103	65-140	12	30
1,2-Dichloroethane	62.50	69.93	112	70-130	13	30
Benzene	62.50	59.72	96	80-120	14	30
Trichloroethene	62.50	57.86	93	70-125	13	30
1,2-Dichloropropane	62.50	56.85	91	75-125	16	30
Bromodichloromethane	62.50	63.20	101	75-120	13	30
Dibromomethane	62.50	60.86	97	75-125	12	30
4-Methyl-2-Pentanone	62.50	57.73	92	60-135	15	30
cis-1,3-Dichloropropene	62.50	57.67	92	70-130	15	30
Toluene	62.50	58.31	93	75-120	9	30
trans-1,3-Dichloropropene	62.50	56.27	90	55-140	10	30
1,1,2-Trichloroethane	62.50	55.09	88	75-125	21	30
2-Hexanone	62.50	54.59	87	55-130	14	30
1,3-Dichloropropane	62.50	60.51	97	75-125	11	30
Tetrachloroethene	62.50	55.56	89	45-150	14	30
Dibromochloromethane	62.50	55.99	90	60-135	13	30
1,2-Dibromoethane	62.50	60.01	96	80-120	8	30
Chlorobenzene	62.50	73.00	99	80-120	7	30
1,1,1,2-Tetrachloroethane	62.50	61.02	98	80-130	15	30
Ethylbenzene	62.50	61.86	99	75-125	14	30
m,p-Xylenes	125.0	120.2	96	75-130	10	30
o-Xylene	62.50	61.26	98	80-120	13	30
Styrene	62.50	57.00	91	65-135	12	30
Bromoform	62.50	50.57	81	70-130	10	30
Isopropylbenzene	62.50	55.74	89	75-125	7	30
1,1,2,2-Tetrachloroethane	62.50	58.92	94	65-130	7	30

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Field ID:	DIC85W07-072815	Batch#:	225639
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Water	Received:	07/29/15
Units:	ug/L	Analyzed:	07/30/15
Diln Fac:	5.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,2,3-Trichloropropane	62.50	59.47	95	75-125	4	30
Propylbenzene	62.50	59.58	95	70-130	7	30
Bromobenzene	62.50	59.44	95	75-125	8	30
1,3,5-Trimethylbenzene	62.50	61.27	98	75-130	10	30
2-Chlorotoluene	62.50	58.76	94	75-125	14	30
4-Chlorotoluene	62.50	64.81	104	75-130	6	30
tert-Butylbenzene	62.50	57.46	92	70-130	6	30
1,2,4-Trimethylbenzene	62.50	57.92	93	75-130	12	30
sec-Butylbenzene	62.50	55.57	89	70-125	7	30
para-Isopropyl Toluene	62.50	57.61	92	75-130	4	30
1,3-Dichlorobenzene	62.50	61.14	95	75-125	7	30
1,4-Dichlorobenzene	62.50	68.16	98	75-125	3	30
n-Butylbenzene	62.50	54.72	88	70-135	14	30
1,2-Dichlorobenzene	62.50	59.36	94	70-120	10	30
1,2-Dibromo-3-Chloropropane	62.50	54.62	87	50-130	9	30
1,2,4-Trichlorobenzene	62.50	54.82	88	65-135	9	30
Hexachlorobutadiene	62.50	53.74	86	50-140	4	30
Naphthalene	62.50	48.70	78	55-140	9	30
1,2,3-Trichlorobenzene	62.50	56.31	90	55-140	12	30

Surrogate	%REC	Limits
Dibromofluoromethane	108	85-115
1,2-Dichloroethane-d4	118	70-120
Toluene-d8	99	85-120
Bromofluorobenzene	99	75-120

*= Value outside of QC limits; see narrative
b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BS Lab ID: QC797874

Analyte	Spiked	Result	%REC	Limits
Freon 12	10.00	9.046 b	90	30-155
Chloromethane	10.00	9.269	93	40-125
Vinyl Chloride	10.00	10.76	108	50-145
Bromomethane	10.00	11.83	118	30-145
Chloroethane	10.00	10.47	105	60-135
Trichlorofluoromethane	10.00	10.55	106	60-145
Acetone	12.50	13.65	109	40-140
Freon 113	12.50	11.11	89	61-138
1,1-Dichloroethene	12.50	12.17	97	70-130
Methylene Chloride	12.50	13.41	107	55-140
Carbon Disulfide	12.50	11.43	91	35-160
MTBE	12.50	13.47	108	65-125
trans-1,2-Dichloroethene	12.50	12.98	104	60-140
Vinyl Acetate	12.50	17.16 b	137	60-194
1,1-Dichloroethane	12.50	13.58	109	70-135
2-Butanone	12.50	14.56	116	30-150
cis-1,2-Dichloroethene	12.50	13.40	107	70-125
2,2-Dichloropropane	12.50	15.23	122	70-135
Chloroform	12.50	13.92	111	65-135
Bromochloromethane	12.50	13.03	104	65-130
1,1,1-Trichloroethane	12.50	13.94	112	65-130
1,1-Dichloropropene	12.50	11.54	92	75-130
Carbon Tetrachloride	12.50	12.61	101	65-140
1,2-Dichloroethane	12.50	12.51	100	70-130
Benzene	12.50	12.71	102	80-120
Trichloroethene	12.50	11.74	94	70-125
1,2-Dichloropropane	12.50	11.67	93	75-125
Bromodichloromethane	12.50	12.15	97	75-120
Dibromomethane	12.50	12.21	98	75-125
4-Methyl-2-Pentanone	12.50	12.75	102	60-135
cis-1,3-Dichloropropene	12.50	12.19	97	70-130
Toluene	12.50	11.53	92	75-120
trans-1,3-Dichloropropene	12.50	10.27	82	55-140
1,1,2-Trichloroethane	12.50	11.38	91	75-125
2-Hexanone	12.50	11.77	94	55-130
1,3-Dichloropropane	12.50	11.46	92	75-125
Tetrachloroethene	12.50	9.646 b	77	45-150
Dibromochloromethane	12.50	10.54	84	60-135
1,2-Dibromoethane	12.50	10.66	85	80-120
Chlorobenzene	12.50	10.93	87	80-120
1,1,1,2-Tetrachloroethane	12.50	10.55	84	80-130
Ethylbenzene	12.50	10.73	86	75-125
m,p-Xylenes	25.00	21.68	87	75-130
o-Xylene	12.50	10.67	85	80-120
Styrene	12.50	11.67	93	65-135
Bromoform	12.50	11.29	90	70-130
Isopropylbenzene	12.50	10.75	86	75-125
1,1,2,2-Tetrachloroethane	12.50	11.93	95	65-130
1,2,3-Trichloropropane	12.50	11.52	92	75-125
Propylbenzene	12.50	10.84	87	70-130
Bromobenzene	12.50	11.13	89	75-125

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits
1,3,5-Trimethylbenzene	12.50	10.97	88	75-130
2-Chlorotoluene	12.50	11.55	92	75-125
4-Chlorotoluene	12.50	10.96	88	75-130
tert-Butylbenzene	12.50	9.785 b	78	70-130
1,2,4-Trimethylbenzene	12.50	10.39	83	75-130
sec-Butylbenzene	12.50	10.03 b	80	70-125
para-Isopropyl Toluene	12.50	9.908 b	79	75-130
1,3-Dichlorobenzene	12.50	11.11	89	75-125
1,4-Dichlorobenzene	12.50	11.13	89	75-125
n-Butylbenzene	12.50	9.657 b	77	70-135
1,2-Dichlorobenzene	12.50	11.25	90	70-120
1,2-Dibromo-3-Chloropropane	12.50	11.45	92	50-130
1,2,4-Trichlorobenzene	12.50	9.643 b	77	65-135
Hexachlorobutadiene	12.50	8.759 b	70	50-140
Naphthalene	12.50	8.628 b	69	55-140
1,2,3-Trichlorobenzene	12.50	9.097 b	73	55-140

Surrogate	%REC	Limits
Dibromofluoromethane	113	85-115
1,2-Dichloroethane-d4	114	70-120
Toluene-d8	97	85-120
Bromofluorobenzene	104	75-120

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Type: BSD Lab ID: QC797875

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Freon 12	10.00	8.298 b	83	30-155	9	30
Chloromethane	10.00	8.984	90	40-125	3	30
Vinyl Chloride	10.00	9.917	99	50-145	8	30
Bromomethane	10.00	11.19	112	30-145	6	30
Chloroethane	10.00	9.645	96	60-135	8	30
Trichlorofluoromethane	10.00	9.453	95	60-145	11	30
Acetone	12.50	12.66	101	40-140	8	30
Freon 113	12.50	11.34	91	61-138	2	30
1,1-Dichloroethene	12.50	11.73	94	70-130	4	30
Methylene Chloride	12.50	13.06	104	55-140	3	30
Carbon Disulfide	12.50	11.28	90	35-160	1	30
MTBE	12.50	13.32	107	65-125	1	30
trans-1,2-Dichloroethene	12.50	12.55	100	60-140	3	30
Vinyl Acetate	12.50	16.58 b	133	60-194	3	30
1,1-Dichloroethane	12.50	13.58	109	70-135	0	30
2-Butanone	12.50	14.32	115	30-150	2	30
cis-1,2-Dichloroethene	12.50	13.38	107	70-125	0	30
2,2-Dichloropropane	12.50	14.71	118	70-135	3	30
Chloroform	12.50	13.87	111	65-135	0	30
Bromochloromethane	12.50	12.76	102	65-130	2	30
1,1,1-Trichloroethane	12.50	13.46	108	65-130	3	30
1,1-Dichloropropene	12.50	11.47	92	75-130	1	30
Carbon Tetrachloride	12.50	12.33	99	65-140	2	30
1,2-Dichloroethane	12.50	12.72	102	70-130	2	30
Benzene	12.50	12.64	101	80-120	1	30
Trichloroethene	12.50	11.93	95	70-125	2	30
1,2-Dichloropropane	12.50	11.68	93	75-125	0	30
Bromodichloromethane	12.50	11.94	96	75-120	2	30
Dibromomethane	12.50	11.94	96	75-125	2	30
4-Methyl-2-Pentanone	12.50	12.62	101	60-135	1	30
cis-1,3-Dichloropropene	12.50	12.00	96	70-130	2	30
Toluene	12.50	11.92	95	75-120	3	30
trans-1,3-Dichloropropene	12.50	10.36	83	55-140	1	30
1,1,2-Trichloroethane	12.50	11.32	91	75-125	0	30
2-Hexanone	12.50	11.56	92	55-130	2	30
1,3-Dichloropropane	12.50	11.35	91	75-125	1	30
Tetrachloroethene	12.50	10.30 b	82	45-150	7	30
Dibromochloromethane	12.50	10.71	86	60-135	2	30
1,2-Dibromoethane	12.50	10.72	86	80-120	1	30
Chlorobenzene	12.50	11.31	90	80-120	3	30
1,1,1,2-Tetrachloroethane	12.50	10.96	88	80-130	4	30
Ethylbenzene	12.50	11.49	92	75-125	7	30
m,p-Xylenes	25.00	23.23	93	75-130	7	30
o-Xylene	12.50	11.14	89	80-120	4	30
Styrene	12.50	11.97	96	65-135	3	30
Bromoform	12.50	11.13	89	70-130	1	30
Isopropylbenzene	12.50	11.28	90	75-125	5	30
1,1,2,2-Tetrachloroethane	12.50	11.66	93	65-130	2	30
1,2,3-Trichloropropane	12.50	11.67	93	75-125	1	30
Propylbenzene	12.50	11.54	92	70-130	6	30
Bromobenzene	12.50	11.36	91	75-125	2	30

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Matrix:	Water	Batch#:	225691
Units:	ug/L	Analyzed:	07/31/15
Diln Fac:	1.000		

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,3,5-Trimethylbenzene	12.50	11.87	95	75-130	8	30
2-Chlorotoluene	12.50	11.97	96	75-125	4	30
4-Chlorotoluene	12.50	11.54	92	75-130	5	30
tert-Butylbenzene	12.50	11.09 b	89	70-130	13	30
1,2,4-Trimethylbenzene	12.50	10.92	87	75-130	5	30
sec-Butylbenzene	12.50	10.83 b	87	70-125	8	30
para-Isopropyl Toluene	12.50	10.53 b	84	75-130	6	30
1,3-Dichlorobenzene	12.50	11.13	89	75-125	0	30
1,4-Dichlorobenzene	12.50	11.51	92	75-125	3	30
n-Butylbenzene	12.50	10.49 b	84	70-135	8	30
1,2-Dichlorobenzene	12.50	11.17	89	70-120	1	30
1,2-Dibromo-3-Chloropropane	12.50	10.59	85	50-130	8	30
1,2,4-Trichlorobenzene	12.50	9.568 b	77	65-135	1	30
Hexachlorobutadiene	12.50	9.742 b	78	50-140	11	30
Naphthalene	12.50	8.166 b	65	55-140	6	30
1,2,3-Trichlorobenzene	12.50	9.523 b	76	55-140	5	30

Surrogate	%REC	Limits
Dibromofluoromethane	111	85-115
1,2-Dichloroethane-d4	111	70-120
Toluene-d8	97	85-120
Bromofluorobenzene	102	75-120

b= See narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797876	Batch#:	225691
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
Freon 12	0.4 U b	1.0	0.2
Chloromethane	0.5 U	1.0	0.2
Vinyl Chloride	0.2 U	0.5	0.1
Bromomethane	0.8 U	1.0	0.2
Chloroethane	0.4 U	1.0	0.2
Trichlorofluoromethane	0.2 U	1.0	0.2
Acetone	4.0 U	10	3.3
Freon 113	0.5 U	2.0	0.2
1,1-Dichloroethene	0.2 U	0.5	0.1
Methylene Chloride	0.2 U	10	0.1
Carbon Disulfide	0.4 U	0.5	0.1
MTBE	0.4 U	0.5	0.1
trans-1,2-Dichloroethene	0.2 U	0.5	0.1
Vinyl Acetate	2.0 U	10	0.5
1,1-Dichloroethane	0.2 U	0.5	0.1
2-Butanone	2.0 U	10	0.5
cis-1,2-Dichloroethene	0.2 U	0.5	0.1
2,2-Dichloropropane	0.4 U	0.5	0.1
Chloroform	0.2 U	0.5	0.1
Bromochloromethane	0.4 U	0.5	0.2
1,1,1-Trichloroethane	0.2 U	0.5	0.1
1,1-Dichloropropene	0.4 U	0.5	0.1
Carbon Tetrachloride	0.4 U	0.5	0.1
1,2-Dichloroethane	0.4 U	0.5	0.1
Benzene	0.2 U	0.5	0.1
Trichloroethene	0.2 U	0.5	0.1
1,2-Dichloropropane	0.2 U	0.5	0.2
Bromodichloromethane	0.2 U	0.5	0.1
Dibromomethane	0.4 U	0.5	0.1
4-Methyl-2-Pentanone	0.5 U	10	0.2
cis-1,3-Dichloropropene	0.4 U	0.5	0.1
Toluene	0.2 U	0.5	0.1
trans-1,3-Dichloropropene	0.4 U	0.5	0.1
1,1,2-Trichloroethane	0.4 U	0.5	0.2
2-Hexanone	0.5 U	10	0.2
1,3-Dichloropropane	0.4 U	0.5	0.1
Tetrachloroethene	0.2 U b	0.5	0.1
Dibromochloromethane	0.2 U	0.5	0.1
1,2-Dibromoethane	0.2 U	0.5	0.1
Chlorobenzene	0.2 U	0.5	0.1
1,1,1,2-Tetrachloroethane	0.2 U	0.5	0.1
Ethylbenzene	0.2 U	0.5	0.2
m,p-Xylenes	0.2 U	0.5	0.1
o-Xylene	0.2 U	0.5	0.1
Styrene	0.2 U	0.5	0.1
Bromoform	0.5 U	1.0	0.1
Isopropylbenzene	0.2 U	0.5	0.1
1,1,2,2-Tetrachloroethane	0.4 U	0.5	0.1
1,2,3-Trichloropropane	0.5 U	0.5	0.1
Propylbenzene	0.2 U	0.5	0.1
Bromobenzene	0.4 U	0.5	0.1
1,3,5-Trimethylbenzene	0.2 U	0.5	0.1

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	EPA 5030C
Project#:	N62473-11-D-2215	Analysis:	EPA 8260C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC797876	Batch#:	225691
Matrix:	Water	Analyzed:	07/31/15
Units:	ug/L		

Analyte	Result	LOQ	DL
2-Chlorotoluene	0.2 U	0.5	0.1
4-Chlorotoluene	0.2 U	0.5	0.2
tert-Butylbenzene	0.2 U b	0.5	0.1
1,2,4-Trimethylbenzene	0.2 U	0.5	0.2
sec-Butylbenzene	0.2 U b	0.5	0.1
para-Isopropyl Toluene	0.2 U b	0.5	0.1
1,3-Dichlorobenzene	0.2 U	0.5	0.1
1,4-Dichlorobenzene	0.2 U	0.5	0.1
n-Butylbenzene	0.4 U b	0.5	0.1
1,2-Dichlorobenzene	0.2 U	0.5	0.1
1,2-Dibromo-3-Chloropropane	0.8 U	2.0	0.2
1,2,4-Trichlorobenzene	0.5 U b	0.5	0.1
Hexachlorobutadiene	0.5 U b	2.0	0.1
Naphthalene	0.5 U b	2.0	0.1
1,2,3-Trichlorobenzene	0.5 U b	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	109	85-115
1,2-Dichloroethane-d4	112	70-120
Toluene-d8	102	85-120
Bromofluorobenzene	107	75-120

U= Not Detected at or above DL
b= See narrative
DL= Detection Limit
LOQ= Limit of Quantitation

Initial & Continuing Calibration Data

CURTIS & TOMPKINS BFB TUNE FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475253923005 File : hfp05 Time : 25-JUN-2015 10:29

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	5962	25.78	
75	30% - 60% of mass 95	11251	48.65	
95		23128	100.00	
96	5% - 9% of mass 95	1708	7.38	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18311	79.17	
175	5% - 9% of mass 174	1349	7.37	
176	> 95% and < 101% of mass 174	18027	98.45	
177	5% - 9% of mass 176	1178	6.53	

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

CURTIS & TOMPKINS BFB TUNE FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA08 Run Name : BFB IDF : 1.0
Seqnum : 475304292006 File : hgu06 Time : 30-JUL-2015 10:16

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	9230	25.37	
75	30% - 60% of mass 95	18415	50.62	
95		36376	100.00	
96	5% - 9% of mass 95	2570	7.07	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	26269	72.22	
175	5% - 9% of mass 174	2139	8.14	
176	> 95% and < 101% of mass 174	25927	98.70	
177	5% - 9% of mass 176	1829	7.05	

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

CURTIS & TOMPKINS BFB TUNE FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485271359002 File : ig702 Time : 07-JUL-2015 10:49

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	8478	30.49	
75	30% - 60% of mass 95	15441	55.53	
95		27808	100.00	
96	5% - 9% of mass 95	2013	7.24	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	18113	65.14	
175	5% - 9% of mass 174	1377	7.60	
176	> 95% and < 101% of mass 174	18059	99.70	
177	5% - 9% of mass 176	1227	6.79	

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

CURTIS & TOMPKINS BFB TUNE FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : BFB IDF : 1.0
Seqnum : 485305964003 File : igv03 Time : 31-JUL-2015 12:08

Standards: S27180

Mass	Ion Abundance Criteria	Abundance	% Relative Abundance	Q
50	15% - 40% of mass 95	48674	33.84	
75	30% - 60% of mass 95	84784	58.95	
95		143818	100.00	
96	5% - 9% of mass 95	9854	6.85	
173	< 2% of mass 174	0	0.00	
174	> 50% and < 100% of mass 95	91269	63.46	
175	5% - 9% of mass 174	6879	7.54	
176	> 95% and < 101% of mass 174	88248	96.69	
177	5% - 9% of mass 176	6075	6.88	

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/03/15

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 MSVOA Water: EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Date : 25-JUN-2015 12:00 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	hfp08	475253923008		25-JUN-2015 12:00	S26360 (2000000X), S27172 (2000000X), S27416 (2000000X), S26220 (1000000X), S27244 (5000X)
L2	hfp09	475253923009		25-JUN-2015 12:34	S26360 (1000000X), S27172 (1000000X), S27416 (1000000X), S26220 (500000X), S27244 (5000X)
L3	hfp10	475253923010		25-JUN-2015 13:07	S26360 (500000X), S27172 (250000X), S27416 (250000X), S26220 (250000X), S27244 (5000X)
L4	hfp11	475253923011		25-JUN-2015 13:41	S26360 (200000X), S27172 (100000X), S27416 (100000X), S26220 (100000X), S27244 (5000X)
L5	hfp12	475253923012		25-JUN-2015 14:15	S26360 (100000X), S27172 (50000X), S27416 (50000X), S26220 (50000X), S27244 (5000X)
L6	hfp13	475253923013		25-JUN-2015 14:49	S26360 (50000X), S27172 (25000X), S27416 (25000X), S26220 (25000X), S27244 (5000X)
L7	hfp14	475253923014		25-JUN-2015 15:23	S26360 (20000X), S27172 (10000X), S27416 (10000X), S26220 (10000X), S27244 (5000X)
L8	hfp15	475253923015		25-JUN-2015 15:57	S26360 (13330X), S27172 (6667X), S27416 (6667X), S26220 (6667X), S27244 (5000X)
L9	hfp16	475253923016		25-JUN-2015 16:31	S26360 (10000X), S27172 (5000X), S27416 (5000X), S26220 (5000X), S27244 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.5422	0.5172	0.5083	0.3399	0.5062	0.4539	0.4517	0.4336	AVRG		2.13169		0.4691	14	15	0.100	0.99	
Chloromethane	0.8987	0.8619	0.8323	0.8605	0.8171	0.8121	0.7349	0.6966	0.6720	AVRG		1.25243		0.7984	10	15	0.100	0.99	
Vinyl Chloride	0.7472	0.7394	0.6855	0.7044	0.6029	0.6727	0.6189	0.6110	0.5959	AVRG		1.50556		0.6642	9	15	0.100	0.99	
Bromomethane		0.3169	0.3400	0.3409	0.3341	0.3597	0.3811	0.3912	0.3914	AVRG		2.80181		0.3569	8	15	0.100	0.99	
Chloroethane		0.5190	0.5062	0.5263	0.4961	0.4834	0.4365	0.4526	0.4115	AVRG		2.08793		0.4789	9	15	0.100	0.99	
Trichlorofluoromethane		0.8599	0.7998	0.8228	0.6661	0.7911	0.7085	0.6839	0.6666	AVRG		1.33363		0.7498	10	15	0.100	0.99	
Acetone			0.2098m	0.1934	0.1755	0.1674	0.1604	0.1621	0.1653	AVRG		5.67351		0.1763	11	15	0.100	0.99	
Freon 113		0.4643	0.4016	0.4799	0.4479	0.4213	0.4307	0.4330	0.4250	AVRG		2.28335		0.4380	6	15	0.100	0.99	
1,1-Dichloroethene		0.5416	0.4651	0.4820	0.4663	0.4663	0.4287	0.4455	0.4262	AVRG		2.14956		0.4652	8	15	0.100	0.99	
Methylene Chloride		0.6436	0.6139	0.6102	0.6145	0.6035	0.5455	0.5371	0.5385	AVRG		1.69968		0.5883	7	15	0.100	0.99	
Carbon Disulfide		2.2300	2.0330	2.0278	1.9431	1.9496	1.7400	1.6979	1.7361	AVRG		0.52091		1.9197	10	15	0.100	0.99	
MTBE		1.3888	1.3144	1.3297	1.3535	1.3915	1.2257	1.2301	1.2454	AVRG		0.76343		1.3099	5	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5812	0.5351	0.5851	0.5296	0.5331	0.5010	0.4983	0.4690	AVRG		1.89017		0.5291	8	15	0.100	0.99	
Vinyl Acetate			0.7359	0.6400	0.8340	0.8982	0.8688	0.8276	0.8511	AVRG		1.23772		0.8079	11	15	0.05	0.99	
1,1-Dichloroethane		1.3753	1.2376	1.2462	1.1611	1.1683	1.1000	1.0691	1.0659	AVRG		0.84893		1.1779	9	15	0.200	0.99	
2-Butanone			0.2614	0.2269	0.2295	0.2269	0.2145	0.2088	0.2028	AVRG		4.45653		0.2244	9	15	0.100	0.99	
2,2-Dichloropropane		0.7852	0.7823	0.7849	0.7152	0.7194	0.7163	0.7042	0.6535	AVRG		1.36494		0.7326	6	15	0.05	0.99	
cis-1,2-Dichloroethene		0.6590	0.6388	0.5839	0.6112	0.6097	0.5601	0.5469	0.5340	AVRG		1.68645		0.5930	7	15	0.100	0.99	
Chloroform		1.1317	1.0698	1.0659	1.0149	1.0293	0.9363	0.8979	0.9156	AVRG		0.99240		1.0077	8	15	0.200	0.99	
Bromochloromethane		0.2644	0.3006	0.3029	0.2793	0.2925	0.2695	0.2638	0.2543	AVRG		3.59193		0.2784	7	15	0.05	0.99	
1,1,1-Trichloroethane		0.8707	0.7206	0.7798	0.6962	0.7108	0.6643	0.6648	0.6634	AVRG		1.38632		0.7213	10	15	0.100	0.99	
1,1-Dichloropropene		0.5538	0.5096	0.5468	0.4778	0.5060	0.4532	0.4734	0.4523	AVRG		2.01368		0.4966	8	15	0.05	0.99	
Carbon Tetrachloride		0.3917	0.3751	0.4286	0.3784	0.3849	0.3630	0.3799	0.3699	AVRG		2.60469		0.3839	5	15	0.100	0.99	
1,2-Dichloroethane		0.5047	0.4779	0.4911	0.4735	0.5064	0.4484	0.4529	0.4442	AVRG		2.10581		0.4749	5	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.5632	1.5167	1.4824	1.4720	1.4606	1.3102	1.2779	1.2083	AVRG		0.70851		1.4114	9	15	0.500	0.99	
Trichloroethene		0.3870	0.3602	0.3743	0.3418	0.3531	0.3047	0.3260	0.3134	AVRG		2.89807		0.3451	8	15	0.200	0.99	
1,2-Dichloropropane		0.5174	0.4563	0.4633	0.4413	0.4534	0.4028	0.3963	0.3705	AVRG		2.28492		0.4377	11	15	0.100	0.99	
Bromodichloromethane		0.4992	0.4895	0.5068	0.4887	0.5016	0.4669	0.4680	0.4549	AVRG		2.06416		0.4845	4	15	0.200	0.99	
Dibromomethane		0.2078	0.2173	0.2173	0.2140	0.2242	0.1945	0.2075	0.2007	AVRG		4.75265		0.2104	5	15	0.05	0.99	
4-Methyl-2-Pentanone			0.3218	0.3344	0.3197	0.3439	0.3090	0.3173	0.3148	AVRG		3.09607		0.3230	4	15	0.100	0.99	
cis-1,3-Dichloropropene		0.6154	0.5989	0.6159	0.5977	0.6234	0.5411	0.5759	0.5448	AVRG		1.69741		0.5891	5	15	0.200	0.99	
Toluene		1.0224	0.9429	0.9938	0.9723	0.9383	0.8279	0.8469	0.8207	AVRG		1.08620		0.9206	9	15	0.400	0.99	
trans-1,3-Dichloropropene		0.5650	0.5537	0.5999	0.5693	0.6022	0.5310	0.5293	0.5139	AVRG		1.79198		0.5580	6	15	0.100	0.99	
1,1,2-Trichloroethane		0.1716	0.1666	0.1737	0.1855	0.1759	0.1653	0.1615	0.1629	AVRG		5.87006		0.1704	5	15	0.100	0.99	
2-Hexanone			0.2465	0.2714	0.2872	0.2906	0.2446	0.2504	0.2370	AVRG		3.82982		0.2611	8	15	0.100	0.99	
1,3-Dichloropropane		0.5966	0.5576	0.5777	0.5933	0.6025	0.5081	0.5297	0.5060	AVRG		1.78910		0.5589	7	15	0.05	0.99	
Tetrachloroethene		0.4077	0.3511	0.3912	0.3619	0.3609	0.3465	0.3444	0.3411	AVRG		2.75402		0.3631	7	15	0.200	0.99	
Dibromochloromethane		0.4205	0.3824	0.4068	0.3951	0.4081	0.3771	0.3798	0.3640	AVRG		2.55272		0.3917	5	15	0.100	0.99	
1,2-Dibromoethane		0.3051	0.2983	0.3170	0.3311	0.3331	0.2974	0.3034	0.2978	AVRG		3.22162		0.3104	5	15	0.100	0.99	
Chlorobenzene		1.1487	1.0740	1.0830	1.1014	1.0667	0.9835	0.9232	0.8924	AVRG		0.96701		1.0341	9	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3898	0.3841	0.3962	0.3912	0.3937	0.3630	0.3546	0.3447	AVRG		2.65153		0.3771	5	15	0.05	0.99	
Ethylbenzene		2.1020	1.8039	1.8765	1.8615	1.8090	1.6155	1.4887	1.4229	AVRG		0.57224		1.7475	13	15	0.100	0.99	
m,p-Xylenes	0.7721	0.7192	0.6722	0.6843	0.6504	0.6350	0.5744	0.5242	0.5393	AVRG		1.55950		0.6412	13	15	0.100	0.99	
o-Xylene		0.7054	0.6630	0.7309	0.6989	0.6587	0.6158	0.6096	0.5461	AVRG		1.53011		0.6535	9	15	0.300	0.99	
Styrene		1.1980	1.1097	1.1508	1.1944	1.1394	0.9943	0.9919	0.9282	AVRG		0.91884		1.0883	9	15	0.300	0.99	
Bromoform		0.2468	0.2178	0.2419	0.2501	0.2488	0.2334	0.2326	0.2319	AVRG		4.20356		0.2379	5	15	0.100	0.99	
Isopropylbenzene		3.4974	3.0271	3.4716	3.0495	3.2300	2.9020	2.8573	2.7311	AVRG		0.32302		3.0957	9	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.7011	0.6579	0.6731	0.7109	0.7192	0.6823	0.6676	0.6484	AVRG		1.46510		0.6825	4	15	0.300	0.99	
1,2,3-Trichloropropane		0.1542	0.1480	0.1597	0.1614	0.1664	0.1588	0.1530	0.1581	AVRG		6.35096		0.1575	4	15	0.05	0.99	
Propylbenzene		4.3941	3.7295	4.2665	3.7562	3.7654	3.2979	3.2519	3.1380	AVRG		0.27027		3.6999	12	15	0.05	0.99	
Bromobenzene		0.9120	0.8565	0.9502	0.8781	0.8905	0.7964	0.8080	0.7921	AVRG		1.16213		0.8605	7	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.7860	2.4893	2.7158	2.5052	2.5559	2.3980	2.2380	2.1413	AVRG		0.40344		2.4787	9	15	0.05	0.99	
2-Chlorotoluene		2.9848	2.6126	2.8160	2.5401	2.6568	2.3990	2.2559	2.1947	AVRG		0.39101		2.5575	11	15	0.05	0.99	
4-Chlorotoluene		2.5557	2.3392	2.5925	2.2163	2.4050	2.1946	2.0120	2.0184	AVRG		0.43636		2.2917	10	15	0.05	0.99	
tert-Butylbenzene		2.6516	2.2627	2.4891	2.2054	2.2931	2.1491	2.0971	1.9869	AVRG		0.44114		2.2669	9	15	0.05	0.99	
1,2,4-Trimethylbenzene		2.7768	2.6016	2.8543	2.6590	2.6498	2.4846	2.2838	2.2427	AVRG		0.38924		2.5691	9	15	0.05	0.99	
sec-Butylbenzene		4.0142	3.2043	3.8608	3.2315	3.3984	3.0471	3.0080	2.9162	AVRG		0.29984		3.3351	12	15	0.05	0.99	
para-Isopropyl Toluene		3.0247	2.5007	3.0671	2.6166	2.6063	2.4679	2.4005	2.3250	AVRG		0.38079		2.6261	11	15	0.05	0.99	
1,3-Dichlorobenzene		1.6852	1.6196	1.7181	1.4987	1.5268	1.4843	1.3826	1.3330	AVRG		0.65316		1.5310	9	15	0.600	0.99	
1,4-Dichlorobenzene		1.7753	1.4944	1.6634	1.5229	1.5577	1.4016	1.3890	1.3364	AVRG		0.65894		1.5176	10	15	0.500	0.99	
n-Butylbenzene		2.8244	2.2910	2.5993	2.3256	2.3830	2.0953	2.1596	1.9830	AVRG		0.42869		2.3327	12	15	0.05	0.99	
1,2-Dichlorobenzene		1.5589	1.4915	1.6288	1.4351	1.5716	1.3607	1.3855	1.3116	AVRG		0.68121		1.4680	8	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane		0.0894	0.1025	0.1176	0.1156	0.1145	0.1095	0.1151	0.1112	AVRG		9.13983		0.1094	9	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.8337	0.8172	0.9044	0.8459	0.8707	0.8161	0.8507	0.8089	AVRG		1.18562		0.8434	4	15	0.200	0.99	
Hexachlorobutadiene		0.4130	0.3469	0.4456	0.3995	0.4029	0.4009	0.4175	0.4024	AVRG		2.47771		0.4036	7	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		1.5902	1.4888	1.7739	1.7189	1.8194	1.7103	1.7313	1.6843	AVRG		0.59185		1.6896	6	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.7379	0.6874	0.8280	0.7628	0.7913	0.7594	0.7912	0.7401	AVRG		1.31189		0.7623	6	15	0.05	0.99	
Dibromofluoromethane	0.5486	0.5583	0.5453	0.5389	0.5478	0.5395	0.5306	0.5368	0.5402	AVRG		1.84192		0.5429	1	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3674	0.3486	0.3555	0.3377	0.3602	0.3507	0.3383	0.3410	0.3245	AVRG		2.88100		0.3471	4	15	0.05	0.99	
Toluene-d8	1.2273	1.2367	1.2015	1.2252	1.2397	1.2262	1.1762	1.2035	1.2258	AVRG		0.82100		1.2180	2	15	0.05	0.99	
Bromofluorobenzene	1.0100	0.9928	0.9628	0.9688	0.9553	0.9718	0.9400	0.9874	1.0124	AVRG		1.02257		0.9779	3	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	16	2.0000	10	5.0000	8	10.000	**-28**	20.000	8	50.000	-3	75.000	-4	100.00	-8
Chloromethane	0.5000	13	1.0000	8	2.0000	4	5.0000	8	10.000	2	20.000	2	50.000	-8	75.000	-13	100.00	-16
Vinyl Chloride	0.5000	12	1.0000	11	2.0000	3	5.0000	6	10.000	-9	20.000	1	50.000	-7	75.000	-8	100.00	-10
Bromomethane			1.0000	-11	2.0000	-5	5.0000	-4	10.000	-6	20.000	1	50.000	7	75.000	10	100.00	10
Chloroethane			1.0000	8	2.0000	6	5.0000	10	10.000	4	20.000	1	50.000	-9	75.000	-6	100.00	-14
Trichlorofluoromethane			1.0000	15	2.0000	7	5.0000	10	10.000	-11	20.000	6	50.000	-6	75.000	-9	100.00	-11
Acetone					2.0000	19	5.0000	10	10.000	0	20.000	-5	50.000	-9	75.000	-8	100.00	-6
Freon 113			0.5000	6	2.0000	-8	5.0000	10	10.000	2	20.000	-4	50.000	-2	75.000	-1	100.00	-3
1,1-Dichloroethene			0.5000	16	2.0000	0	5.0000	4	10.000	0	20.000	0	50.000	-8	75.000	-4	100.00	-8
Methylene Chloride			0.5000	9	2.0000	4	5.0000	4	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-8
Carbon Disulfide			0.5000	16	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-9	75.000	-12	100.00	-10
MTBE			0.5000	6	2.0000	0	5.0000	2	10.000	3	20.000	6	50.000	-6	75.000	-6	100.00	-5
trans-1,2-Dichloroethene			0.5000	10	2.0000	1	5.0000	11	10.000	0	20.000	1	50.000	-5	75.000	-6	100.00	-11
Vinyl Acetate					2.0000	-9	5.0000	**-21**	10.000	3	20.000	11	50.000	8	75.000	2	100.00	5
1,1-Dichloroethane			0.5000	17	2.0000	5	5.0000	6	10.000	-1	20.000	-1	50.000	-7	75.000	-9	100.00	-10
2-Butanone					2.0000	16	5.0000	1	10.000	2	20.000	1	50.000	-4	75.000	-7	100.00	-10
2,2-Dichloropropane			0.5000	7	2.0000	7	5.0000	7	10.000	-2	20.000	-2	50.000	-2	75.000	-4	100.00	-11
cis-1,2-Dichloroethene			0.5000	11	2.0000	8	5.0000	-2	10.000	3	20.000	3	50.000	-6	75.000	-8	100.00	-10
Chloroform			0.5000	12	2.0000	6	5.0000	6	10.000	1	20.000	2	50.000	-7	75.000	-11	100.00	-9
Bromochloromethane			0.5000	-5	2.0000	8	5.0000	9	10.000	0	20.000	5	50.000	-3	75.000	-5	100.00	-9
1,1,1-Trichloroethane			0.5000	**21**	2.0000	0	5.0000	8	10.000	-3	20.000	-1	50.000	-8	75.000	-8	100.00	-8
1,1-Dichloropropene			0.5000	12	2.0000	3	5.0000	10	10.000	-4	20.000	2	50.000	-9	75.000	-5	100.00	-9
Carbon Tetrachloride			0.5000	2	2.0000	-2	5.0000	12	10.000	-1	20.000	0	50.000	-5	75.000	-1	100.00	-4
1,2-Dichloroethane			0.5000	6	2.0000	1	5.0000	3	10.000	0	20.000	7	50.000	-6	75.000	-5	100.00	-6
Benzene			0.5000	11	2.0000	7	5.0000	5	10.000	4	20.000	3	50.000	-7	75.000	-9	100.00	-14
Trichloroethene			0.5000	12	2.0000	4	5.0000	8	10.000	-1	20.000	2	50.000	-12	75.000	-6	100.00	-9
1,2-Dichloropropane			0.5000	18	2.0000	4	5.0000	6	10.000	1	20.000	4	50.000	-8	75.000	-9	100.00	-15
Bromodichloromethane			0.5000	3	2.0000	1	5.0000	5	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-6
Dibromomethane			0.5000	-1	2.0000	3	5.0000	3	10.000	2	20.000	7	50.000	-8	75.000	-1	100.00	-5
4-Methyl-2-Pentanone					2.0000	0	5.0000	4	10.000	-1	20.000	6	50.000	-4	75.000	-2	100.00	-3
cis-1,3-Dichloropropene			0.5000	4	2.0000	2	5.0000	5	10.000	1	20.000	6	50.000	-8	75.000	-2	100.00	-8
Toluene			0.5000	11	2.0000	2	5.0000	8	10.000	6	20.000	2	50.000	-10	75.000	-8	100.00	-11
trans-1,3-Dichloropropene			0.5000	1	2.0000	-1	5.0000	7	10.000	2	20.000	8	50.000	-5	75.000	-5	100.00	-8
1,1,2-Trichloroethane			0.5000	1	2.0000	-2	5.0000	2	10.000	9	20.000	3	50.000	-3	75.000	-5	100.00	-4
2-Hexanone					2.0000	-6	5.0000	4	10.000	10	20.000	11	50.000	-6	75.000	-4	100.00	-9
1,3-Dichloropropane			0.5000	7	2.0000	0	5.0000	3	10.000	6	20.000	8	50.000	-9	75.000	-5	100.00	-9
Tetrachloroethene			0.5000	12	2.0000	-3	5.0000	8	10.000	0	20.000	-1	50.000	-5	75.000	-5	100.00	-6
Dibromochloromethane			0.5000	7	2.0000	-2	5.0000	4	10.000	1	20.000	4	50.000	-4	75.000	-3	100.00	-7
1,2-Dibromoethane			0.5000	-2	2.0000	-4	5.0000	2	10.000	7	20.000	7	50.000	-4	75.000	-2	100.00	-4
Chlorobenzene			0.5000	11	2.0000	4	5.0000	5	10.000	7	20.000	3	50.000	-5	75.000	-11	100.00	-14
1,1,1,2-Tetrachloroethane			0.5000	3	2.0000	2	5.0000	5	10.000	4	20.000	4	50.000	-4	75.000	-6	100.00	-9
Ethylbenzene			0.5000	20	2.0000	3	5.0000	7	10.000	7	20.000	4	50.000	-8	75.000	-15	100.00	-19

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	20	1.0000	12	4.0000	5	10.000	7	20.000	1	40.000	-1	100.00	-10	150.00	-18	200.00	-16
o-Xylene			0.5000	8	2.0000	1	5.0000	12	10.000	7	20.000	1	50.000	-6	75.000	-7	100.00	-16
Styrene			0.5000	10	2.0000	2	5.0000	6	10.000	10	20.000	5	50.000	-9	75.000	-9	100.00	-15
Bromoform			0.5000	4	2.0000	-8	5.0000	2	10.000	5	20.000	5	50.000	-2	75.000	-2	100.00	-3
Isopropylbenzene			0.5000	13	2.0000	-2	5.0000	12	10.000	-1	20.000	4	50.000	-6	75.000	-8	100.00	-12
1,1,2,2-Tetrachloroethane			0.5000	3	2.0000	-4	5.0000	-1	10.000	4	20.000	5	50.000	0	75.000	-2	100.00	-5
1,2,3-Trichloropropane			0.5000	-2	2.0000	-6	5.0000	1	10.000	3	20.000	6	50.000	1	75.000	-3	100.00	0
Propylbenzene			0.5000	19	2.0000	1	5.0000	15	10.000	2	20.000	2	50.000	-11	75.000	-12	100.00	-15
Bromobenzene			0.5000	6	2.0000	0	5.0000	10	10.000	2	20.000	3	50.000	-7	75.000	-6	100.00	-8
1,3,5-Trimethylbenzene			0.5000	12	2.0000	0	5.0000	10	10.000	1	20.000	3	50.000	-3	75.000	-10	100.00	-14
2-Chlorotoluene			0.5000	17	2.0000	2	5.0000	10	10.000	-1	20.000	4	50.000	-6	75.000	-12	100.00	-14
4-Chlorotoluene			0.5000	12	2.0000	2	5.0000	13	10.000	-3	20.000	5	50.000	-4	75.000	-12	100.00	-12
tert-Butylbenzene			0.5000	17	2.0000	0	5.0000	10	10.000	-3	20.000	1	50.000	-5	75.000	-7	100.00	-12
1,2,4-Trimethylbenzene			0.5000	8	2.0000	1	5.0000	11	10.000	3	20.000	3	50.000	-3	75.000	-11	100.00	-13
sec-Butylbenzene			0.5000	20	2.0000	-4	5.0000	16	10.000	-3	20.000	2	50.000	-9	75.000	-10	100.00	-13
para-Isopropyl Toluene			0.5000	15	2.0000	-5	5.0000	17	10.000	0	20.000	-1	50.000	-6	75.000	-9	100.00	-11
1,3-Dichlorobenzene			0.5000	10	2.0000	6	5.0000	12	10.000	-2	20.000	0	50.000	-3	75.000	-10	100.00	-13
1,4-Dichlorobenzene			0.5000	17	2.0000	-2	5.0000	10	10.000	0	20.000	3	50.000	-8	75.000	-8	100.00	-12
n-Butylbenzene			0.5000	**21**	2.0000	-2	5.0000	11	10.000	0	20.000	2	50.000	-10	75.000	-7	100.00	-15
1,2-Dichlorobenzene			0.5000	6	2.0000	2	5.0000	11	10.000	-2	20.000	7	50.000	-7	75.000	-6	100.00	-11
1,2-Dibromo-3-Chloropropane			0.5000	-18	2.0000	-6	5.0000	7	10.000	6	20.000	5	50.000	0	75.000	5	100.00	2
1,2,4-Trichlorobenzene			0.5000	-1	2.0000	-3	5.0000	7	10.000	0	20.000	3	50.000	-3	75.000	1	100.00	-4
Hexachlorobutadiene			0.5000	2	2.0000	-14	5.0000	10	10.000	-1	20.000	0	50.000	-1	75.000	3	100.00	0
Naphthalene			0.5000	-6	2.0000	-12	5.0000	5	10.000	2	20.000	8	50.000	1	75.000	2	100.00	0
1,2,3-Trichlorobenzene			0.5000	-3	2.0000	-10	5.0000	9	10.000	0	20.000	4	50.000	0	75.000	4	100.00	-3
Dibromofluoromethane	50.000	1	50.000	3	50.000	0	50.000	-1	50.000	1	50.000	-1	50.000	-2	50.000	-1	50.000	-1
1,2-Dichloroethane-d4	50.000	6	50.000	0	50.000	2	50.000	-3	50.000	4	50.000	1	50.000	-3	50.000	-2	50.000	-7
Toluene-d8	50.000	1	50.000	2	50.000	-1	50.000	1	50.000	2	50.000	1	50.000	-3	50.000	-1	50.000	1
Bromofluorobenzene	50.000	3	50.000	2	50.000	-2	50.000	-1	50.000	-2	50.000	-1	50.000	-4	50.000	1	50.000	4

DJA 06/26/15 [Ethanol]: Corrected fronting or tailing peak integration in multiple levels.

DJA 06/26/15 [Acetone]: Corrected fronting or tailing peak integration in (hfp10).

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA08 Name : 826GOX8
Calnum : 475253923002 Cal Date : 25-JUN-2015 Type : WATER

ICV 475253923017 (hfp17 25-JUN-2015) stds: S26064 (10000X), S27244 (5000X)
ICV 475253923018 (hfp18 25-JUN-2015) stds: S27331 (10000X), S27404 (10000X), S27533 (10000X), S27244 (5000X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	475253923017	20.00	25.38	ug/L	**27**	20	v+ ***
Chloromethane	475253923017	20.00	19.54	ug/L	-2	20	
Vinyl Chloride	475253923017	20.00	20.18	ug/L	1	20	
Bromomethane	475253923017	20.00	19.54	ug/L	-2	20	
Chloroethane	475253923017	20.00	18.42	ug/L	-8	20	
Trichlorofluoromethane	475253923017	20.00	20.66	ug/L	3	20	
Acetone	475253923018	25.00	20.00	ug/L	-20	20	
Freon 113	475253923018	25.00	19.09	ug/L	**-24**	20	v- ***
1,1-Dichloroethene	475253923018	25.00	21.38	ug/L	-14	20	
Methylene Chloride	475253923018	25.00	23.31	ug/L	-7	20	
Carbon Disulfide	475253923018	25.00	18.77	ug/L	**-25**	20	v- ***
MTBE	475253923018	25.00	24.72	ug/L	-1	20	
trans-1,2-Dichloroethene	475253923018	25.00	22.57	ug/L	-10	20	
Vinyl Acetate	475253923018	25.00	32.45	ug/L	**30**	20	v+ ***
1,1-Dichloroethane	475253923018	25.00	22.75	ug/L	-9	20	
2-Butanone	475253923018	25.00	23.98	ug/L	-4	20	
2,2-Dichloropropane	475253923018	25.00	22.60	ug/L	-10	20	
cis-1,2-Dichloroethene	475253923018	25.00	24.30	ug/L	-3	20	
Chloroform	475253923018	25.00	23.92	ug/L	-4	20	
Bromochloromethane	475253923018	25.00	24.42	ug/L	-2	20	
1,1,1-Trichloroethane	475253923018	25.00	24.02	ug/L	-4	20	
1,1-Dichloropropene	475253923018	25.00	22.74	ug/L	-9	20	
Carbon Tetrachloride	475253923018	25.00	24.08	ug/L	-4	20	
1,2-Dichloroethane	475253923018	25.00	23.25	ug/L	-7	20	
Benzene	475253923018	25.00	23.36	ug/L	-7	20	
Trichloroethene	475253923018	25.00	22.70	ug/L	-9	20	
1,2-Dichloropropane	475253923018	25.00	22.01	ug/L	-12	20	
Bromodichloromethane	475253923018	25.00	22.78	ug/L	-9	20	
Dibromomethane	475253923018	25.00	23.64	ug/L	-5	20	
4-Methyl-2-Pentanone	475253923018	25.00	23.16	ug/L	-7	20	
cis-1,3-Dichloropropene	475253923018	25.00	23.42	ug/L	-6	20	
Toluene	475253923018	25.00	24.30	ug/L	-3	20	
trans-1,3-Dichloropropene	475253923018	25.00	22.10	ug/L	-12	20	
1,1,2-Trichloroethane	475253923018	25.00	24.93	ug/L	0	20	
2-Hexanone	475253923018	25.00	25.36	ug/L	1	20	
1,3-Dichloropropane	475253923018	25.00	24.96	ug/L	0	20	
Tetrachloroethene	475253923018	25.00	24.15	ug/L	-3	20	
Dibromochloromethane	475253923018	25.00	24.48	ug/L	-2	20	
1,2-Dibromoethane	475253923018	25.00	24.67	ug/L	-1	20	
Chlorobenzene	475253923018	25.00	23.11	ug/L	-8	20	
1,1,1,2-Tetrachloroethane	475253923018	25.00	23.85	ug/L	-5	20	
Ethylbenzene	475253923018	25.00	23.76	ug/L	-5	20	
m,p-Xylenes	475253923018	50.00	48.45	ug/L	-3	20	
o-Xylene	475253923018	25.00	24.72	ug/L	-1	20	
Styrene	475253923018	25.00	25.11	ug/L	0	20	
Bromoform	475253923018	25.00	24.91	ug/L	0	20	
Isopropylbenzene	475253923018	25.00	24.38	ug/L	-2	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	475253923018	25.00	26.77	ug/L	7	20	
1,2,3-Trichloropropane	475253923018	25.00	25.78	ug/L	3	20	
Propylbenzene	475253923018	25.00	24.98	ug/L	0	20	
Bromobenzene	475253923018	25.00	25.71	ug/L	3	20	
1,3,5-Trimethylbenzene	475253923018	25.00	25.45	ug/L	2	20	
2-Chlorotoluene	475253923018	25.00	24.35	ug/L	-3	20	
4-Chlorotoluene	475253923018	25.00	25.97	ug/L	4	20	
tert-Butylbenzene	475253923018	25.00	25.13	ug/L	1	20	
1,2,4-Trimethylbenzene	475253923018	25.00	24.23	ug/L	-3	20	
sec-Butylbenzene	475253923018	25.00	24.65	ug/L	-1	20	
para-Isopropyl Toluene	475253923018	25.00	25.08	ug/L	0	20	
1,3-Dichlorobenzene	475253923018	25.00	25.51	ug/L	2	20	
1,4-Dichlorobenzene	475253923018	25.00	24.94	ug/L	0	20	
n-Butylbenzene	475253923018	25.00	24.68	ug/L	-1	20	
1,2-Dichlorobenzene	475253923018	25.00	25.91	ug/L	4	20	
1,2-Dibromo-3-Chloropropane	475253923018	25.00	25.00	ug/L	0	20	
1,2,4-Trichlorobenzene	475253923018	25.00	25.19	ug/L	1	20	
Hexachlorobutadiene	475253923018	25.00	24.66	ug/L	-1	20	
Naphthalene	475253923018	25.00	24.72	ug/L	-1	20	
1,2,3-Trichlorobenzene	475253923018	25.00	26.69	ug/L	7	20	

475253923017: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15
475253923018: Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

+=high bias -=low bias v=ICV

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 MSVOA Water: EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Date : 07-JUL-2015 13:45 Type : WATER
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	ig707	485271359007	.25/.5PPB	07-JUL-2015 13:45	S26360 (2000000X), S27559 (2000000X), S27416 (2000000X), S26220 (1000000X), S27403 (5000X)
L2	ig708	485271359008	.5/1PPB	07-JUL-2015 14:19	S27403 (5000X), S26360 (1000000X), S27559 (1000000X), S27416 (1000000X), S26220 (500000X)
L3	ig709	485271359009	2PPB	07-JUL-2015 14:54	S26360 (500000X), S27559 (250000X), S27416 (250000X), S26220 (250000X), S27403 (5000X)
L4	ig710	485271359010	5PPB	07-JUL-2015 15:28	S27403 (5000X), S26360 (200000X), S27559 (100000X), S27416 (100000X), S26220 (100000X)
L5	ig711	485271359011	10PPB	07-JUL-2015 16:03	S27403 (5000X), S26360 (100000X), S27559 (50000X), S27416 (50000X), S26220 (50000X)
L6	ig712	485271359012	20PPB	07-JUL-2015 16:37	S27403 (5000X), S26360 (50000X), S27559 (25000X), S27416 (25000X), S26220 (25000X)
L7	ig713	485271359013	50PPB	07-JUL-2015 17:12	S27403 (5000X), S26360 (20000X), S27559 (10000X), S27416 (10000X), S26220 (10000X)
L8	ig714	485271359014	75PPB	07-JUL-2015 17:46	S27403 (5000X), S26360 (13330X), S27559 (6667X), S27416 (6667X), S26220 (6667X)
L9	ig715	485271359015	100PPB	07-JUL-2015 18:21	S27403 (5000X), S26360 (10000X), S27559 (5000X), S27416 (5000X), S26220 (5000X)

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Freon 12		0.8295	0.7813	0.8144	0.6552	0.7846	0.6493	0.6678	0.6451	AVRG		1.37286		0.7284	11	15	0.100	0.99	
Chloromethane	1.4221	1.2354	1.2133	1.1468	1.1031	1.0288	0.8902	0.8250		QUAD	-0.1818	0.87534	0.005523	1.1081	1.000	15	0.100	0.99	
Vinyl Chloride	0.9594	0.8834	0.9021	0.8573	0.8247	0.8347	0.7011	0.6584	0.6550	AVRG		1.23693		0.8085	14	15	0.100	0.99	
Bromomethane	0.3703	0.3463	0.3273	0.3389	0.3913	0.4129	0.4326	0.4392	0.4531	AVRG		2.56273		0.3902	12	15	0.100	0.99	
Chloroethane		0.5011	0.5101	0.4605	0.4740	0.4547	0.4197	0.4025	0.4115	AVRG		2.20135		0.4543	9	15	0.100	0.99	
Trichlorofluoromethane		0.9266	0.8918	0.8934	0.7925	0.8509	0.7560	0.7660	0.7547	AVRG		1.20628		0.8290	8	15	0.100	0.99	
Acetone					0.1253	0.1173	0.1009	0.0988	0.0912	AVRG		9.37147		0.1067	13	15	0.100	0.99	
Freon 113		0.4516	0.4408	0.3838	0.3133	0.3629	0.3697	0.3676	0.3779	AVRG		2.60781		0.3835	12	15	0.100	0.99	
1,1-Dichloroethene		0.4474	0.4412	0.3831	0.3641	0.3812	0.3783	0.3744	0.3850	AVRG		2.53584		0.3943	8	15	0.100	0.99	
Methylene Chloride		0.5494	0.5419	0.5096	0.5224	0.5092	0.4725	0.4693	0.4867	AVRG		1.96998		0.5076	6	15	0.100	0.99	
Carbon Disulfide		1.9206	1.8268	1.6855	1.5744	1.6561	1.6287	1.5930	1.6540	AVRG		0.59088		1.6924	7	15	0.100	0.99	
MTBE		1.0283	0.9704	0.9057	0.9460	0.9147	0.8685	0.8049	0.8488	AVRG		1.09780		0.9109	8	15	0.100	0.99	
trans-1,2-Dichloroethene		0.5061	0.4780	0.4547	0.4449	0.4560	0.4366	0.4309	0.4498	AVRG		2.18771		0.4571	5	15	0.100	0.99	
Vinyl Acetate			0.9013	0.8434	0.8447m	0.8124	0.8086	0.7391	0.7099	AVRG		1.23685		0.8085	8	15	0.05	0.99	
1,1-Dichloroethane		1.1778	1.1309	1.0599	1.0637	1.0344	0.9859	0.9304	0.9196	AVRG		0.96354		1.0378	9	15	0.200	0.99	
2-Butanone				0.1789m	0.1844m	0.1720	0.1528	0.1441	0.1430	AVRG		6.15295		0.1625	11	15	0.100	0.99	
2,2-Dichloropropane		0.8777	0.8404	0.7520	0.7256	0.7140	0.6927	0.6436	0.6415	AVRG		1.35883		0.7359	12	15	0.05	0.99	
cis-1,2-Dichloroethene		0.5377	0.5208	0.4903	0.5051	0.5124	0.4938	0.4903	0.4998	AVRG		1.97523		0.5063	3	15	0.100	0.99	
Chloroform		1.0887	1.0251	0.9871	0.9904	0.9670	0.9210	0.8761	0.8819	AVRG		1.03394		0.9672	7	15	0.200	0.99	
Bromochloromethane		0.2495	0.2350	0.2228	0.2367	0.2303	0.2308	0.2306	0.2362	AVRG		4.27375		0.2340	3	15	0.05	0.99	
1,1,1-Trichloroethane		0.9251	0.8694	0.7549	0.7266	0.7538	0.7030	0.6554	0.6447	AVRG		1.32609		0.7541	13	15	0.100	0.99	
1,1-Dichloropropene		0.5433	0.4687	0.4309	0.4143	0.4334	0.4352	0.4324	0.4234	AVRG		2.23364		0.4477	9	15	0.05	0.99	
Carbon Tetrachloride		0.4543	0.4462	0.3967	0.3820	0.4058	0.4043	0.3907	0.4003	AVRG		2.43872		0.4101	6	15	0.100	0.99	
1,2-Dichloroethane		0.4570	0.4412	0.4005	0.4380	0.4223	0.3959	0.3688	0.3572	AVRG		2.43833		0.4101	9	15	0.100	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Benzene		1.2719	1.1909	1.1415	1.1618	1.1768	1.1616	1.1345	1.1345	AVRG		0.85347		1.1717	4	15	0.500	0.99	
Trichloroethene		0.3438	0.3238	0.3025	0.2899	0.3037	0.2998	0.3034	0.3086	AVRG		3.23179		0.3094	5	15	0.200	0.99	
1,2-Dichloropropane		0.4042	0.3727	0.3520	0.3678	0.3647	0.3575	0.3448	0.3469	AVRG		2.74868		0.3638	5	15	0.100	0.99	
Bromodichloromethane		0.4517	0.4301	0.4195	0.4485	0.4405	0.4356	0.4114	0.4210	AVRG		2.31329		0.4323	3	15	0.200	0.99	
Dibromomethane		0.1828	0.1777	0.1761	0.1830	0.1781	0.1774	0.1713	0.1713	AVRG		5.64265		0.1772	2	15	0.05	0.99	
4-Methyl-2-Pentanone				0.2363	0.2522	0.2397	0.2329	0.2180	0.2203	AVRG		4.28742		0.2332	5	15	0.100	0.99	
cis-1,3-Dichloropropene		0.4907	0.4789	0.4503	0.4869	0.4865	0.4935	0.4771	0.4633	AVRG		2.09036		0.4784	3	15	0.200	0.99	
Toluene		0.7808	0.7551	0.7291	0.7092	0.7357	0.7898	0.7038	0.6966	AVRG		1.35591		0.7375	5	15	0.400	0.99	
trans-1,3-Dichloropropene		0.4597	0.4333	0.4395	0.4494	0.4452	0.4546	0.4309	0.4297	AVRG		2.25839		0.4428	3	15	0.100	0.99	
1,1,2-Trichloroethane		0.1161	0.1189	0.1260	0.1325	0.1270	0.1282	0.1278	0.1301	AVRG		7.94672		0.1258	4	15	0.100	0.99	
2-Hexanone				0.1896	0.2000	0.1928	0.1863	0.1825	0.1756	AVRG		5.32480		0.1878	4	15	0.100	0.99	
1,3-Dichloropropane		0.4358	0.4038	0.3887	0.4103	0.3997	0.4115	0.4038	0.3983	AVRG		2.46008		0.4065	3	15	0.05	0.99	
Tetrachloroethene		0.3060	0.2788	0.2574	0.2532	0.2703	0.2900	0.3042	0.3181	AVRG		3.51202		0.2847	8	15	0.200	0.99	
Dibromochloromethane		0.2617	0.2811	0.2852	0.2973	0.3028	0.3129	0.3166	0.3233	AVRG		3.36012		0.2976	7	15	0.100	0.99	
1,2-Dibromoethane		0.2322	0.2216	0.2167	0.2330	0.2274	0.2308	0.2312	0.2365	AVRG		4.37318		0.2287	3	15	0.100	0.99	
Chlorobenzene		0.8902	0.8061	0.7658	0.8022	0.8092	0.8475	0.7970	0.8509	AVRG		1.21786		0.8211	5	15	0.500	0.99	
1,1,1,2-Tetrachloroethane		0.3005	0.2887	0.2885	0.3093	0.3073	0.3322	0.3303	0.3314	AVRG		3.21520		0.3110	6	15	0.05	0.99	
Ethylbenzene		1.5424	1.4178	1.3655	1.3606	1.4054	1.5201	1.4634	1.4252	AVRG		0.69563		1.4375	5	15	0.100	0.99	
m,p-Xylenes	0.5300	0.4926	0.4844	0.4759	0.4728	0.5243	0.5442	0.5198	0.4742	AVRG		1.99190		0.5020	5	15	0.100	0.99	
o-Xylene		0.4862	0.4758	0.4691	0.4611	0.4912	0.5411	0.5121	0.5130	AVRG		2.02550		0.4937	5	15	0.300	0.99	
Styrene		0.7481	0.7797	0.7989	0.8092	0.8820	0.8714	0.7329	0.7298	AVRG		1.25946		0.7940	7	15	0.300	0.99	
Bromoform		0.1202	0.1277	0.1346	0.1510	0.1604	0.1722			AVRG		6.92676		0.1444	14	15	0.100	0.99	
Isopropylbenzene		2.6387	2.5460	2.3177	2.2775	2.4711	2.5384	2.4757	2.3593	AVRG		0.40765		2.4531	5	15	0.100	0.99	
1,1,2,2-Tetrachloroethane		0.5434	0.4928	0.4839	0.4921	0.4869	0.4694	0.4740	0.4692	AVRG		2.04512		0.4890	5	15	0.300	0.99	
1,2,3-Trichloropropane		0.1113	0.1097	0.1143	0.1161	0.1151	0.1174	0.1193	0.1102	AVRG		8.75751		0.1142	3	15	0.05	0.99	
Propylbenzene		3.4780	3.1989	2.9912	2.6888	3.0160	3.0118	2.8107	2.6131	AVRG		0.33601		2.9761	9	15	0.05	0.99	
Bromobenzene		0.6356	0.6028	0.6117	0.6139	0.6471	0.6995	0.6873	0.6497	AVRG		1.55413		0.6434	5	15	0.05	0.99	
1,3,5-Trimethylbenzene		2.1558	2.0613	1.9250	1.9030	1.9268	1.9589	1.9008	1.7172	AVRG		0.51451		1.9436	7	15	0.05	0.99	
2-Chlorotoluene		2.3248	2.2157	2.0843	2.0248	2.0289	1.9443	1.8629	1.6931	AVRG		0.49448		2.0223	10	15	0.05	0.99	
4-Chlorotoluene		2.0603	1.9210	1.8486	1.7922	1.7785	1.9025	1.7886	1.7498	AVRG		0.53903		1.8552	6	15	0.05	0.99	
tert-Butylbenzene		1.7452	1.7453	1.5931	1.5102	1.6336	1.7629	1.7935	1.7091	AVRG		0.59291		1.6866	6	15	0.05	0.99	
1,2,4-Trimethylbenzene		1.9650	2.0111	1.8972	1.8755	1.8802	2.0229	1.8894	1.8653	AVRG		0.51925		1.9258	3	15	0.05	0.99	
sec-Butylbenzene		2.6336	2.5834	2.4127	2.2117	2.4269	2.6807	2.6479	2.5521	AVRG		0.39704		2.5186	6	15	0.05	0.99	
para-Isopropyl Toluene		1.9652	1.9373	1.8083	1.6544	1.8685	2.0534	1.9723	1.9666	AVRG		0.52542		1.9032	7	15	0.05	0.99	
1,3-Dichlorobenzene		1.0908	1.0254	0.9804	1.0120	1.0442	1.1274	1.1969	1.1821	AVRG		0.92387		1.0824	7	15	0.600	0.99	
1,4-Dichlorobenzene		1.2126	1.1003	1.0731	1.0813	1.1114	1.1291	1.1544	1.1496	AVRG		0.88773		1.1265	4	15	0.500	0.99	
n-Butylbenzene		2.0226	1.8854	1.6866	1.5564	1.6771	1.7684	1.8237	1.6974	AVRG		0.56667		1.7647	8	15	0.05	0.99	
1,2-Dichlorobenzene		1.0183	0.9661	0.9315	0.9287	0.9089	0.9959	1.0485	1.0610	AVRG		1.01796		0.9824	6	15	0.400	0.99	
1,2-Dibromo-3-Chloropropane			0.0720	0.0759	0.0760	0.0797	0.0754	0.0753	0.0730	AVRG		13.2772		0.0753	3	15	0.050	0.99	
1,2,4-Trichlorobenzene		0.5224	0.4755	0.4535	0.4367	0.4725	0.4796	0.5037	0.5299	AVRG		2.06517		0.4842	7	15	0.200	0.99	
Hexachlorobutadiene		0.2693	0.2630	0.2204	0.2103	0.2332	0.2440	0.2642	0.2691	AVRG		4.05386		0.2467	9	15	0.05	0.99	

Analyte	L1	L2	L3	L4	L5	L6	L7	L8	L9	Type	a0	a1	a2	Avg	r^2 %RSD	Max %RSD	Min RF	Min r^2	Flg
Naphthalene		0.8151	0.7628	0.7478	0.7542	0.7943	0.7789	0.8153	0.8463	AVRG		1.26688		0.7893	4	15	0.05	0.99	
1,2,3-Trichlorobenzene		0.4428	0.4119	0.3943	0.3982	0.4187	0.4258	0.4441	0.4612	AVRG		2.35501		0.4246	6	15	0.05	0.99	
Dibromofluoromethane	0.6868	0.6789	0.6843	0.6726	0.6651	0.6678	0.6353	0.6092	0.6036	AVRG		1.52449		0.6560	5	15	0.05	0.99	
1,2-Dichloroethane-d4	0.3951	0.3944	0.3953	0.3913	0.3786	0.3828	0.3381	0.3084	0.2890	AVRG		2.74978		0.3637	11	15	0.05	0.99	
Toluene-d8	1.3774	1.4049	1.3863	1.3636	1.3956	1.3798	1.3651	1.3614	1.3608	AVRG		0.72611		1.3772	1	15	0.05	0.99	
Bromofluorobenzene	1.0471	1.0449	1.0348	1.0110	0.9983	0.9760	0.9224	0.9355	0.9218	AVRG		1.01217		0.9880	5	15	0.05	0.99	

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
Freon 12			1.0000	14	2.0000	7	5.0000	12	10.000	-10	20.000	8	50.000	-11	75.000	-8	100.00	-11
Chloromethane	0.5000	-11	1.0000	-9	2.0000	-1	5.0000	0	10.000	1	20.000	1	50.000	-1	75.000	0		
Vinyl Chloride	0.5000	19	1.0000	9	2.0000	12	5.0000	6	10.000	2	20.000	3	50.000	-13	75.000	-19	100.00	-19
Bromomethane	0.5000	-5	1.0000	-11	2.0000	-16	5.0000	-13	10.000	0	20.000	6	50.000	11	75.000	13	100.00	16
Chloroethane			1.0000	10	2.0000	12	5.0000	1	10.000	4	20.000	0	50.000	-8	75.000	-11	100.00	-9
Trichlorofluoromethane			1.0000	12	2.0000	8	5.0000	8	10.000	-4	20.000	3	50.000	-9	75.000	-8	100.00	-9
Acetone									10.000	17	20.000	10	50.000	-5	75.000	-7	100.00	-15
Freon 113			0.5000	18	2.0000	15	5.0000	0	10.000	-18	20.000	-5	50.000	-4	75.000	-4	100.00	-1
1,1-Dichloroethene			0.5000	13	2.0000	12	5.0000	-3	10.000	-8	20.000	-3	50.000	-4	75.000	-5	100.00	-2
Methylene Chloride			0.5000	8	2.0000	7	5.0000	0	10.000	3	20.000	0	50.000	-7	75.000	-8	100.00	-4
Carbon Disulfide			0.5000	13	2.0000	8	5.0000	0	10.000	-7	20.000	-2	50.000	-4	75.000	-6	100.00	-2
MTBE			0.5000	13	2.0000	7	5.0000	-1	10.000	4	20.000	0	50.000	-5	75.000	-12	100.00	-7
trans-1,2-Dichloroethene			0.5000	11	2.0000	5	5.0000	-1	10.000	-3	20.000	0	50.000	-4	75.000	-6	100.00	-2
Vinyl Acetate					2.0000	11	5.0000	4	10.000	4	20.000	0	50.000	0	75.000	-9	100.00	-12
1,1-Dichloroethane			0.5000	13	2.0000	9	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-10	100.00	-11
2-Butanone							5.0000	10	10.000	13	20.000	6	50.000	-6	75.000	-11	100.00	-12
2,2-Dichloropropane			0.5000	19	2.0000	14	5.0000	2	10.000	-1	20.000	-3	50.000	-6	75.000	-13	100.00	-13
cis-1,2-Dichloroethene			0.5000	6	2.0000	3	5.0000	-3	10.000	0	20.000	1	50.000	-2	75.000	-3	100.00	-1
Chloroform			0.5000	13	2.0000	6	5.0000	2	10.000	2	20.000	0	50.000	-5	75.000	-9	100.00	-9
Bromochloromethane			0.5000	7	2.0000	0	5.0000	-5	10.000	1	20.000	-2	50.000	-1	75.000	-1	100.00	1
1,1,1-Trichloroethane			0.5000	**23**	2.0000	15	5.0000	0	10.000	-4	20.000	0	50.000	-7	75.000	-13	100.00	-15
1,1-Dichloropropene			0.5000	**21**	2.0000	5	5.0000	-4	10.000	-7	20.000	-3	50.000	-3	75.000	-3	100.00	-5
Carbon Tetrachloride			0.5000	11	2.0000	9	5.0000	-3	10.000	-7	20.000	-1	50.000	-1	75.000	-5	100.00	-2
1,2-Dichloroethane			0.5000	11	2.0000	8	5.0000	-2	10.000	7	20.000	3	50.000	-3	75.000	-10	100.00	-13
Benzene			0.5000	9	2.0000	2	5.0000	-3	10.000	-1	20.000	0	50.000	-1	75.000	-3	100.00	-3
Trichloroethene			0.5000	11	2.0000	5	5.0000	-2	10.000	-6	20.000	-2	50.000	-3	75.000	-2	100.00	0
1,2-Dichloropropane			0.5000	11	2.0000	2	5.0000	-3	10.000	1	20.000	0	50.000	-2	75.000	-5	100.00	-5
Bromodichloromethane			0.5000	4	2.0000	-1	5.0000	-3	10.000	4	20.000	2	50.000	1	75.000	-5	100.00	-3
Dibromomethane			0.5000	3	2.0000	0	5.0000	-1	10.000	3	20.000	0	50.000	0	75.000	-3	100.00	-3
4-Methyl-2-Pentanone							5.0000	1	10.000	8	20.000	3	50.000	0	75.000	-7	100.00	-6
cis-1,3-Dichloropropene			0.5000	3	2.0000	0	5.0000	-6	10.000	2	20.000	2	50.000	3	75.000	0	100.00	-3
Toluene			0.5000	6	2.0000	2	5.0000	-1	10.000	-4	20.000	0	50.000	7	75.000	-5	100.00	-6
trans-1,3-Dichloropropene			0.5000	4	2.0000	-2	5.0000	-1	10.000	1	20.000	1	50.000	3	75.000	-3	100.00	-3
1,1,2-Trichloroethane			0.5000	-8	2.0000	-5	5.0000	0	10.000	5	20.000	1	50.000	2	75.000	2	100.00	3
2-Hexanone							5.0000	1	10.000	6	20.000	3	50.000	-1	75.000	-3	100.00	-7
1,3-Dichloropropane			0.5000	7	2.0000	-1	5.0000	-4	10.000	1	20.000	-2	50.000	1	75.000	-1	100.00	-2
Tetrachloroethene			0.5000	7	2.0000	-2	5.0000	-10	10.000	-11	20.000	-5	50.000	2	75.000	7	100.00	12
Dibromochloromethane			0.5000	-12	2.0000	-6	5.0000	-4	10.000	0	20.000	2	50.000	5	75.000	6	100.00	9
1,2-Dibromoethane			0.5000	2	2.0000	-3	5.0000	-5	10.000	2	20.000	-1	50.000	1	75.000	1	100.00	3
Chlorobenzene			0.5000	8	2.0000	-2	5.0000	-7	10.000	-2	20.000	-1	50.000	3	75.000	-3	100.00	4
1,1,1,2-Tetrachloroethane			0.5000	-3	2.0000	-7	5.0000	-7	10.000	-1	20.000	-1	50.000	7	75.000	6	100.00	7
Ethylbenzene			0.5000	7	2.0000	-1	5.0000	-5	10.000	-5	20.000	-2	50.000	6	75.000	2	100.00	-1

Spiked Amounts / Drifts	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D	L6	%D	L7	%D	L8	%D	L9	%D
m,p-Xylenes	0.5000	6	1.0000	-2	4.0000	-4	10.000	-5	20.000	-6	40.000	4	100.00	8	150.00	4	200.00	-6
o-Xylene			0.5000	-2	2.0000	-4	5.0000	-5	10.000	-7	20.000	-1	50.000	10	75.000	4	100.00	4
Styrene			0.5000	-6	2.0000	-2	5.0000	1	10.000	2	20.000	11	50.000	10	75.000	-8	100.00	-8
Bromoform			0.5000	-17	2.0000	-12	5.0000	-7	10.000	5	20.000	11	50.000	19				
Isopropylbenzene			0.5000	8	2.0000	4	5.0000	-6	10.000	-7	20.000	1	50.000	3	75.000	1	100.00	-4
1,1,2,2-Tetrachloroethane			0.5000	11	2.0000	1	5.0000	-1	10.000	1	20.000	0	50.000	-4	75.000	-3	100.00	-4
1,2,3-Trichloropropane			0.5000	-3	2.0000	-4	5.0000	0	10.000	2	20.000	1	50.000	3	75.000	5	100.00	-3
Propylbenzene			0.5000	17	2.0000	7	5.0000	1	10.000	-10	20.000	1	50.000	1	75.000	-6	100.00	-12
Bromobenzene			0.5000	-1	2.0000	-6	5.0000	-5	10.000	-5	20.000	1	50.000	9	75.000	7	100.00	1
1,3,5-Trimethylbenzene			0.5000	11	2.0000	6	5.0000	-1	10.000	-2	20.000	-1	50.000	1	75.000	-2	100.00	-12
2-Chlorotoluene			0.5000	15	2.0000	10	5.0000	3	10.000	0	20.000	0	50.000	-4	75.000	-8	100.00	-16
4-Chlorotoluene			0.5000	11	2.0000	4	5.0000	0	10.000	-3	20.000	-4	50.000	3	75.000	-4	100.00	-6
tert-Butylbenzene			0.5000	3	2.0000	3	5.0000	-6	10.000	-10	20.000	-3	50.000	5	75.000	6	100.00	1
1,2,4-Trimethylbenzene			0.5000	2	2.0000	4	5.0000	-1	10.000	-3	20.000	-2	50.000	5	75.000	-2	100.00	-3
sec-Butylbenzene			0.5000	5	2.0000	3	5.0000	-4	10.000	-12	20.000	-4	50.000	6	75.000	5	100.00	1
para-Isopropyl Toluene			0.5000	3	2.0000	2	5.0000	-5	10.000	-13	20.000	-2	50.000	8	75.000	4	100.00	3
1,3-Dichlorobenzene			0.5000	1	2.0000	-5	5.0000	-9	10.000	-7	20.000	-4	50.000	4	75.000	11	100.00	9
1,4-Dichlorobenzene			0.5000	8	2.0000	-2	5.0000	-5	10.000	-4	20.000	-1	50.000	0	75.000	2	100.00	2
n-Butylbenzene			0.5000	15	2.0000	7	5.0000	-4	10.000	-12	20.000	-5	50.000	0	75.000	3	100.00	-4
1,2-Dichlorobenzene			0.5000	4	2.0000	-2	5.0000	-5	10.000	-5	20.000	-7	50.000	1	75.000	7	100.00	8
1,2-Dibromo-3-Chloropropane					2.0000	-4	5.0000	1	10.000	1	20.000	6	50.000	0	75.000	0	100.00	-3
1,2,4-Trichlorobenzene			0.5000	8	2.0000	-2	5.0000	-6	10.000	-10	20.000	-2	50.000	-1	75.000	4	100.00	9
Hexachlorobutadiene			0.5000	9	2.0000	7	5.0000	-11	10.000	-15	20.000	-5	50.000	-1	75.000	7	100.00	9
Naphthalene			0.5000	3	2.0000	-3	5.0000	-5	10.000	-4	20.000	1	50.000	-1	75.000	3	100.00	7
1,2,3-Trichlorobenzene			0.5000	4	2.0000	-3	5.0000	-7	10.000	-6	20.000	-1	50.000	0	75.000	5	100.00	9
Dibromofluoromethane	50.000	5	50.000	3	50.000	4	50.000	3	50.000	1	50.000	2	50.000	-3	50.000	-7	50.000	-8
1,2-Dichloroethane-d4	50.000	9	50.000	8	50.000	9	50.000	8	50.000	4	50.000	5	50.000	-7	50.000	-15	50.000	**-21**
Toluene-d8	50.000	0	50.000	2	50.000	1	50.000	-1	50.000	1	50.000	0	50.000	-1	50.000	-1	50.000	-1
Bromofluorobenzene	50.000	6	50.000	6	50.000	5	50.000	2	50.000	1	50.000	-1	50.000	-7	50.000	-5	50.000	-7

DAR 07/08/15 [Vinyl Acetate]: Combined split peak in 10PPB (ig711).

DAR 07/08/15 [2-Butanone]: Combined split peak in multiple levels.

Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

m=manual integration

Instrument amount = a0 + response * a1 + response^2 * a2; AVRG=Average response factor; QUAD=Quadratic regression

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA09 Name : 826GOX9W
Calnum : 485271359002 Cal Date : 07-JUL-2015 Type : WATER

ICV 485271359016 (ig716 07-JUL-2015) stds: S26358 (10000X), S27403 (5000X)
ICV 485271359017 (ig717 07-JUL-2015) stds: S27558 (10000X), S27556 (10000X), S27533 (10000X), S27403 (5000X)

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
Freon 12	485271359016	20.00	14.29	ug/L	**-29**	20	v- ***
Chloromethane	485271359016	20.00	16.82	ug/L	-16	20	
Vinyl Chloride	485271359016	20.00	16.27	ug/L	-19	20	
Bromomethane	485271359016	20.00	17.31	ug/L	-13	20	
Chloroethane	485271359016	20.00	18.80	ug/L	-6	20	
Trichlorofluoromethane	485271359016	20.00	17.41	ug/L	-13	20	
Acetone	485271359017	25.00	22.76	ug/L	-9	20	
Freon 113	485271359017	25.00	21.56	ug/L	-14	20	
1,1-Dichloroethene	485271359017	25.00	23.34	ug/L	-7	20	
Methylene Chloride	485271359017	25.00	23.47	ug/L	-6	20	
Carbon Disulfide	485271359017	25.00	21.03	ug/L	-16	20	
MTBE	485271359017	25.00	22.99	ug/L	-8	20	
trans-1,2-Dichloroethene	485271359017	25.00	24.14	ug/L	-3	20	
Vinyl Acetate	485271359017	25.00	26.60	ug/L	6	20	
1,1-Dichloroethane	485271359017	25.00	22.68	ug/L	-9	20	
2-Butanone	485271359017	25.00	22.78	ug/L	-9	20	
2,2-Dichloropropane	485271359017	25.00	22.39	ug/L	-10	20	
cis-1,2-Dichloroethene	485271359017	25.00	24.75	ug/L	-1	20	
Chloroform	485271359017	25.00	23.52	ug/L	-6	20	
Bromochloromethane	485271359017	25.00	24.56	ug/L	-2	20	
1,1,1-Trichloroethane	485271359017	25.00	23.24	ug/L	-7	20	
1,1-Dichloropropene	485271359017	25.00	23.49	ug/L	-6	20	
Carbon Tetrachloride	485271359017	25.00	24.64	ug/L	-1	20	
1,2-Dichloroethane	485271359017	25.00	23.61	ug/L	-6	20	
Benzene	485271359017	25.00	24.51	ug/L	-2	20	
Trichloroethene	485271359017	25.00	24.18	ug/L	-3	20	
1,2-Dichloropropane	485271359017	25.00	22.46	ug/L	-10	20	
Bromodichloromethane	485271359017	25.00	23.36	ug/L	-7	20	
Dibromomethane	485271359017	25.00	24.06	ug/L	-4	20	
4-Methyl-2-Pentanone	485271359017	25.00	23.54	ug/L	-6	20	
cis-1,3-Dichloropropene	485271359017	25.00	23.93	ug/L	-4	20	
Toluene	485271359017	25.00	26.13	ug/L	5	20	
trans-1,3-Dichloropropene	485271359017	25.00	22.36	ug/L	-11	20	
1,1,2-Trichloroethane	485271359017	25.00	24.68	ug/L	-1	20	
2-Hexanone	485271359017	25.00	24.97	ug/L	0	20	
1,3-Dichloropropane	485271359017	25.00	25.33	ug/L	1	20	
Tetrachloroethene	485271359017	25.00	26.39	ug/L	6	20	
Dibromochloromethane	485271359017	25.00	25.02	ug/L	0	20	
1,2-Dibromoethane	485271359017	25.00	24.56	ug/L	-2	20	
Chlorobenzene	485271359017	25.00	25.69	ug/L	3	20	
1,1,1,2-Tetrachloroethane	485271359017	25.00	24.85	ug/L	-1	20	
Ethylbenzene	485271359017	25.00	25.96	ug/L	4	20	
m,p-Xylenes	485271359017	50.00	54.43	ug/L	9	20	
o-Xylene	485271359017	25.00	26.06	ug/L	4	20	
Styrene	485271359017	25.00	28.24	ug/L	13	20	
Bromoform	485271359017	25.00	27.85	ug/L	11	20	
Isopropylbenzene	485271359017	25.00	26.53	ug/L	6	20	

Analyte	ICV Seqnum	Spiked	Quant	Units	%D	Max	Flags
1,1,2,2-Tetrachloroethane	485271359017	25.00	24.86	ug/L	-1	20	
1,2,3-Trichloropropane	485271359017	25.00	25.68	ug/L	3	20	
Propylbenzene	485271359017	25.00	26.48	ug/L	6	20	
Bromobenzene	485271359017	25.00	26.98	ug/L	8	20	
1,3,5-Trimethylbenzene	485271359017	25.00	28.15	ug/L	13	20	
2-Chlorotoluene	485271359017	25.00	26.64	ug/L	7	20	
4-Chlorotoluene	485271359017	25.00	25.74	ug/L	3	20	
tert-Butylbenzene	485271359017	25.00	26.83	ug/L	7	20	
1,2,4-Trimethylbenzene	485271359017	25.00	27.02	ug/L	8	20	
sec-Butylbenzene	485271359017	25.00	25.87	ug/L	3	20	
para-Isopropyl Toluene	485271359017	25.00	26.43	ug/L	6	20	
1,3-Dichlorobenzene	485271359017	25.00	26.43	ug/L	6	20	
1,4-Dichlorobenzene	485271359017	25.00	26.16	ug/L	5	20	
n-Butylbenzene	485271359017	25.00	25.97	ug/L	4	20	
1,2-Dichlorobenzene	485271359017	25.00	26.50	ug/L	6	20	
1,2-Dibromo-3-Chloropropane	485271359017	25.00	24.31	ug/L	-3	20	
1,2,4-Trichlorobenzene	485271359017	25.00	26.13	ug/L	5	20	
Hexachlorobutadiene	485271359017	25.00	26.11	ug/L	4	20	
Naphthalene	485271359017	25.00	23.59	ug/L	-6	20	
1,2,3-Trichlorobenzene	485271359017	25.00	26.60	ug/L	6	20	

485271359016: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15
485271359017: Analyst: DAR Date: 07/09/15 Reviewer: LW Date: 07/09/15

-=low bias v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA08 IDF : 1.0
Seqnum : 475304292008.1 File : hgu08 Time : 30-JUL-2015 12:08
Cal : 475253923002 Caldate : 25-JUN-2015 Caltype : WATER
Standards: S26360 (25000X), S27559 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.4691	0.4400	20.00	18.76	ug/L	-6	20	0.1000	v+ ***
Chloromethane	0.7984	0.8754	20.00	21.93	ug/L	10	20	0.1000	
Vinyl Chloride	0.6642	0.6927	20.00	20.86	ug/L	4	20	0.1000	
Bromomethane	0.3569	0.3455	20.00	19.36	ug/L	-3	20	0.1000	
Chloroethane	0.4789	0.4292	20.00	17.92	ug/L	-10	20	0.1000	
Trichlorofluoromethane	0.7498	0.6491	20.00	17.31	ug/L	-13	20	0.1000	
Acetone	0.1763	0.1451	20.00	16.47	ug/L	-18	20	0.1000	
Freon 113	0.4380	0.3372	20.00	15.40	ug/L	**-23**	20	0.1000	c- v- ***
1,1-Dichloroethene	0.4652	0.3766	20.00	16.19	ug/L	-19	20	0.1000	
Methylene Chloride	0.5883	0.5293	20.00	17.99	ug/L	-10	20	0.1000	
Carbon Disulfide	1.9197	1.6308	20.00	16.99	ug/L	-15	20	0.1000	v- ***
MTBE	1.3099	1.1843	20.00	18.08	ug/L	-10	20	0.1000	
trans-1,2-Dichloroethene	0.5291	0.4729	20.00	17.88	ug/L	-11	20	0.1000	
Vinyl Acetate	0.8079	0.9759	20.00	24.16	ug/L	**21**	20	0.0500	c+ v+ ***
1,1-Dichloroethane	1.1779	1.1074	20.00	18.80	ug/L	-6	20	0.2000	
2-Butanone	0.2244	0.1986	20.00	17.70	ug/L	-11	20	0.1000	
2,2-Dichloropropane	0.7326	0.8278	20.00	22.60	ug/L	13	20	0.0500	
cis-1,2-Dichloroethene	0.5930	0.5452	20.00	18.39	ug/L	-8	20	0.1000	
Chloroform	1.0077	0.9423	20.00	18.70	ug/L	-6	20	0.2000	
Bromochloromethane	0.2784	0.2457	20.00	17.65	ug/L	-12	20	0.0500	
1,1,1-Trichloroethane	0.7213	0.6762	20.00	18.75	ug/L	-6	20	0.1000	
1,1-Dichloropropene	0.4966	0.4689	20.00	18.88	ug/L	-6	20	0.0500	
Carbon Tetrachloride	0.3839	0.3606	20.00	18.79	ug/L	-6	20	0.1000	
1,2-Dichloroethane	0.4749	0.4858	20.00	20.46	ug/L	2	20	0.1000	
Benzene	1.4114	1.2808	20.00	18.15	ug/L	-9	20	0.5000	
Trichloroethene	0.3451	0.3101	20.00	17.98	ug/L	-10	20	0.2000	
1,2-Dichloropropane	0.4377	0.4182	20.00	19.11	ug/L	-4	20	0.1000	
Bromodichloromethane	0.4845	0.4739	20.00	19.57	ug/L	-2	20	0.2000	
Dibromomethane	0.2104	0.1916	20.00	18.21	ug/L	-9	20	0.0500	
4-Methyl-2-Pentanone	0.3230	0.2656	20.00	16.45	ug/L	-18	20	0.1000	
cis-1,3-Dichloropropene	0.5891	0.5685	20.00	19.30	ug/L	-4	20	0.2000	
Toluene	0.9206	0.8179	20.00	17.77	ug/L	-11	20	0.4000	
trans-1,3-Dichloropropene	0.5580	0.5136	20.00	18.41	ug/L	-8	20	0.1000	
1,1,2-Trichloroethane	0.1704	0.1501	20.00	17.62	ug/L	-12	20	0.1000	
2-Hexanone	0.2611	0.2213	20.00	16.95	ug/L	-15	20	0.1000	
1,3-Dichloropropane	0.5589	0.5009	20.00	17.92	ug/L	-10	20	0.0500	
Tetrachloroethene	0.3631	0.3357	20.00	18.49	ug/L	-8	20	0.2000	
Dibromochloromethane	0.3917	0.3546	20.00	18.11	ug/L	-9	20	0.1000	
1,2-Dibromoethane	0.3104	0.2743	20.00	17.67	ug/L	-12	20	0.1000	
Chlorobenzene	1.0341	0.9907	20.00	19.16	ug/L	-4	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3771	0.3492	20.00	18.52	ug/L	-7	20	0.0500	
Ethylbenzene	1.7475	1.7009	20.00	19.47	ug/L	-3	20	0.1000	
m,p-Xylenes	0.6412	0.6184	40.00	38.58	ug/L	-4	20	0.1000	
o-Xylene	0.6535	0.6184	20.00	18.92	ug/L	-5	20	0.3000	
Styrene	1.0883	1.0447	20.00	19.20	ug/L	-4	20	0.3000	
Bromoform	0.2379	0.1923	20.00	16.17	ug/L	-19	20	0.1000	
Isopropylbenzene	3.0957	2.9717	20.00	19.20	ug/L	-4	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.6825	0.6128	20.00	17.96	ug/L	-10	20	0.3000	
1,2,3-Trichloropropane	0.1575	0.1366	20.00	17.35	ug/L	-13	20	0.0500	
Propylbenzene	3.6999	3.7466	20.00	20.25	ug/L	1	20	0.0500	
Bromobenzene	0.8605	0.8484	20.00	19.72	ug/L	-1	20	0.0500	
1,3,5-Trimethylbenzene	2.4787	2.4397	20.00	19.69	ug/L	-2	20	0.0500	
2-Chlorotoluene	2.5575	2.5850	20.00	20.22	ug/L	1	20	0.0500	
4-Chlorotoluene	2.2917	2.3107	20.00	20.17	ug/L	1	20	0.0500	
tert-Butylbenzene	2.2669	2.0980	20.00	18.51	ug/L	-7	20	0.0500	
1,2,4-Trimethylbenzene	2.5691	2.5780	20.00	20.07	ug/L	0	20	0.0500	
sec-Butylbenzene	3.3351	3.1672	20.00	18.99	ug/L	-5	20	0.0500	
para-Isopropyl Toluene	2.6261	2.6049	20.00	19.84	ug/L	-1	20	0.0500	
1,3-Dichlorobenzene	1.5310	1.4604	20.00	19.08	ug/L	-5	20	0.6000	
1,4-Dichlorobenzene	1.5176	1.4631	20.00	19.28	ug/L	-4	20	0.5000	
n-Butylbenzene	2.3327	2.3951	20.00	20.54	ug/L	3	20	0.0500	
1,2-Dichlorobenzene	1.4680	1.4040	20.00	19.13	ug/L	-4	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.1094	0.0979	20.00	17.89	ug/L	-11	20	0.0500	
1,2,4-Trichlorobenzene	0.8434	0.7768	20.00	18.42	ug/L	-8	20	0.2000	
Hexachlorobutadiene	0.4036	0.4006	20.00	19.85	ug/L	-1	20	0.0500	
Naphthalene	1.6896	1.5104	20.00	17.88	ug/L	-11	20	0.0500	
1,2,3-Trichlorobenzene	0.7623	0.6858	20.00	17.99	ug/L	-10	20	0.0500	
Dibromofluoromethane	0.5429	0.5689	50.00	52.39	ug/L	5	20	0.0500	
1,2-Dichloroethane-d4	0.3471	0.3758	50.00	54.14	ug/L	8	20	0.0500	
Toluene-d8	1.2180	1.2181	50.00	50.00	ug/L	0	20	0.0500	
Bromofluorobenzene	0.9779	1.0037	50.00	51.32	ug/L	3	20	0.0500	

ISTD (ICAL hfp14)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	1032422	1602604	55.23	10.06	10.04	-0.02
1,4-Difluorobenzene	1647573	2511787	52.45	11.26	11.24	-0.02
Chlorobenzene-d5	1426621	2143831	50.27	15.76	15.74	-0.02
1,4-Dichlorobenzene-d4	722873	1112721	53.93	18.61	18.59	-0.02

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 MSVOA Water
EPA 8260C

Inst : MSVOA09 Run Name : 20PPB IDF : 1.0
Seqnum : 485305964004.1 File : igv04 Time : 31-JUL-2015 12:35
Cal : 485271359002 Caldate : 07-JUL-2015 Caltype : WATER
Standards: S26360 (25000X), S27823 (25000X), S27699 (25000X), S26220 (25000X), S27698 (5000X)

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
Freon 12	0.7284	0.7796	20.00	21.41	ug/L	7	20	0.1000	v- ***
Chloromethane	1.1081	1.1009	20.00	21.77	ug/L	9	20	0.1000	
Vinyl Chloride	0.8085	0.8720	20.00	21.57	ug/L	8	20	0.1000	
Bromomethane	0.3902	0.4069	20.00	20.86	ug/L	4	20	0.1000	
Chloroethane	0.4543	0.4776	20.00	21.03	ug/L	5	20	0.1000	
Trichlorofluoromethane	0.8290	0.8434	20.00	20.35	ug/L	2	20	0.1000	
Acetone	0.1067	0.1221	20.00	22.88	ug/L	14	20	0.1000	
Freon 113	0.3835	0.3650	20.00	19.03	ug/L	-5	20	0.1000	
1,1-Dichloroethene	0.3943	0.3947	20.00	20.02	ug/L	0	20	0.1000	
Methylene Chloride	0.5076	0.5219	20.00	20.56	ug/L	3	20	0.1000	
Carbon Disulfide	1.6924	1.6734	20.00	19.78	ug/L	-1	20	0.1000	
MTBE	0.9109	0.9355	20.00	20.54	ug/L	3	20	0.1000	
trans-1,2-Dichloroethene	0.4571	0.4646	20.00	20.33	ug/L	2	20	0.1000	
Vinyl Acetate	0.8085	1.0786	20.00	26.68	ug/L	**33**	20	0.0500	c+ ***
1,1-Dichloroethane	1.0378	1.1518	20.00	22.20	ug/L	11	20	0.2000	
2-Butanone	0.1625	0.1803	20.00	22.19	ug/L	11	20	0.1000	
2,2-Dichloropropane	0.7359	0.8599	20.00	23.37	ug/L	17	20	0.0500	
cis-1,2-Dichloroethene	0.5063	0.5354	20.00	21.15	ug/L	6	20	0.1000	
Chloroform	0.9672	1.0563	20.00	21.84	ug/L	9	20	0.2000	
Bromochloromethane	0.2340	0.2350	20.00	20.09	ug/L	0	20	0.0500	
1,1,1-Trichloroethane	0.7541	0.8352	20.00	22.15	ug/L	11	20	0.1000	
1,1-Dichloropropene	0.4477	0.4121	20.00	18.41	ug/L	-8	20	0.0500	
Carbon Tetrachloride	0.4101	0.3966	20.00	19.35	ug/L	-3	20	0.1000	
1,2-Dichloroethane	0.4101	0.4071	20.00	19.85	ug/L	-1	20	0.1000	
Benzene	1.1717	1.1500	20.00	19.63	ug/L	-2	20	0.5000	
Trichloroethene	0.3094	0.2819	20.00	18.22	ug/L	-9	20	0.2000	
1,2-Dichloropropane	0.3638	0.3571	20.00	19.63	ug/L	-2	20	0.1000	
Bromodichloromethane	0.4323	0.4245	20.00	19.64	ug/L	-2	20	0.2000	
Dibromomethane	0.1772	0.1688	20.00	19.05	ug/L	-5	20	0.0500	
4-Methyl-2-Pentanone	0.2332	0.2271	20.00	19.47	ug/L	-3	20	0.1000	
cis-1,3-Dichloropropene	0.4784	0.4707	20.00	19.68	ug/L	-2	20	0.2000	
Toluene	0.7375	0.6647	20.00	18.02	ug/L	-10	20	0.4000	
trans-1,3-Dichloropropene	0.4428	0.3940	20.00	17.79	ug/L	-11	20	0.1000	
1,1,2-Trichloroethane	0.1258	0.1128	20.00	17.93	ug/L	-10	20	0.1000	
2-Hexanone	0.1878	0.1654	20.00	17.62	ug/L	-12	20	0.1000	
1,3-Dichloropropane	0.4065	0.3516	20.00	17.30	ug/L	-14	20	0.0500	
Tetrachloroethene	0.2847	0.2108	20.00	14.80	ug/L	**-26**	20	0.2000	c- ***
Dibromochloromethane	0.2976	0.2620	20.00	17.60	ug/L	-12	20	0.1000	
1,2-Dibromoethane	0.2287	0.1933	20.00	16.91	ug/L	-15	20	0.1000	
Chlorobenzene	0.8211	0.7064	20.00	17.21	ug/L	-14	20	0.5000	
1,1,1,2-Tetrachloroethane	0.3110	0.2498	20.00	16.06	ug/L	-20	20	0.0500	
Ethylbenzene	1.4375	1.2121	20.00	16.86	ug/L	-16	20	0.1000	
m,p-Xylenes	0.5020	0.4476	40.00	35.67	ug/L	-11	20	0.1000	
o-Xylene	0.4937	0.4224	20.00	17.11	ug/L	-14	20	0.3000	
Styrene	0.7940	0.7454	20.00	18.78	ug/L	-6	20	0.3000	
Bromoform	0.1444	0.1317	20.00	18.25	ug/L	-9	20	0.1000	
Isopropylbenzene	2.4531	1.9756	20.00	16.11	ug/L	-19	20	0.1000	

Analyte	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Min RF	Flags
1,1,2,2-Tetrachloroethane	0.4890	0.4297	20.00	17.58	ug/L	-12	20	0.3000	
1,2,3-Trichloropropane	0.1142	0.0984	20.00	17.24	ug/L	-14	20	0.0500	
Propylbenzene	2.9761	2.4140	20.00	16.22	ug/L	-19	20	0.0500	
Bromobenzene	0.6434	0.5537	20.00	17.21	ug/L	-14	20	0.0500	
1,3,5-Trimethylbenzene	1.9436	1.5641	20.00	16.09	ug/L	-20	20	0.0500	
2-Chlorotoluene	2.0223	1.7476	20.00	17.28	ug/L	-14	20	0.0500	
4-Chlorotoluene	1.8552	1.5561	20.00	16.78	ug/L	-16	20	0.0500	
tert-Butylbenzene	1.6866	1.2426	20.00	14.73	ug/L	**-26**	20	0.0500	c- ***
1,2,4-Trimethylbenzene	1.9258	1.5528	20.00	16.13	ug/L	-19	20	0.0500	
sec-Butylbenzene	2.5186	1.8402	20.00	14.61	ug/L	**-27**	20	0.0500	c- ***
para-Isopropyl Toluene	1.9032	1.3630	20.00	14.32	ug/L	**-28**	20	0.0500	c- ***
1,3-Dichlorobenzene	1.0824	0.8903	20.00	16.45	ug/L	-18	20	0.6000	
1,4-Dichlorobenzene	1.1265	0.9781	20.00	17.37	ug/L	-13	20	0.5000	
n-Butylbenzene	1.7647	1.2454	20.00	14.11	ug/L	**-29**	20	0.0500	c- ***
1,2-Dichlorobenzene	0.9824	0.8372	20.00	17.04	ug/L	-15	20	0.4000	
1,2-Dibromo-3-Chloropropane	0.0753	0.0648	20.00	17.22	ug/L	-14	20	0.0500	
1,2,4-Trichlorobenzene	0.4842	0.3455	20.00	14.27	ug/L	**-29**	20	0.2000	c- ***
Hexachlorobutadiene	0.2467	0.1603	20.00	12.99	ug/L	**-35**	20	0.0500	c- ***
Naphthalene	0.7893	0.5369	20.00	13.60	ug/L	**-32**	20	0.0500	c- ***
1,2,3-Trichlorobenzene	0.4246	0.3064	20.00	14.43	ug/L	**-28**	20	0.0500	c- ***
Dibromofluoromethane	0.6560	0.7598	50.00	57.92	ug/L	16	20	0.0500	
1,2-Dichloroethane-d4	0.3637	0.4146	50.00	57.01	ug/L	14	20	0.0500	
Toluene-d8	1.3772	1.3423	50.00	48.73	ug/L	-3	20	0.0500	
Bromofluorobenzene	0.9880	0.9827	50.00	49.73	ug/L	-1	20	0.0500	

ISTD (ICAL ig713)	ICAL Area	Area	%Drift	ICAL RT	RT	Drift
Pentafluorobenzene	987439	1158431	17.32	11.04	11.00	-0.04
1,4-Difluorobenzene	1506110	2022004	34.25	12.30	12.27	-0.03
Chlorobenzene-d5	1326780	1944148	46.53	16.67	16.64	-0.03
1,4-Dichlorobenzene-d4	740445	1008685	36.23	19.10	19.09	-0.01

Analyst: NJT Date: 08/04/15 Reviewer: LW Date: 08/06/15

+=high bias -=low bias c=CCV v=ICV

Logbooks & Sequences

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 475304292

Date : 07/30/15 Reference : hfp14
Sequence : MSVOA08 hgu Analyzed : 06/25/15 15:23

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	1032422	10.06	1647573	11.26	1426621	15.76	722873	18.61
		LOWER LIMIT	516211	9.56	823787	10.76	713311	15.26	361437	18.11
		UPPER LIMIT	2064844	10.56	3295146	11.76	2853242	16.26	1445746	19.11
007	CCV		1536059	10.05	2400302	11.24	2003421	15.75	1046223	18.60
008	CCV		1602604	10.04	2511787	11.24	2143831	15.74	1112721	18.59
010	BS	QC797679	1532749	10.05	2447306	11.24	2019881	15.74	1093012	18.59
011	BSD	QC797680	1541975	10.04	2417296	11.25	2051568	15.74	1078812	18.60
013	BLANK	QC797681	1549473	10.05	2436563	11.25	2082560	15.75	1098204	18.60
014	SAMPLE	268513-011	1547385	10.05	2292614	11.25	1937012	15.75	1086319	18.60
015	SAMPLE	268513-024	1497442	10.05	2160319	11.26	1907787	15.75	1050251	18.60
016	SAMPLE	268556-010	1403002	10.05	2135879	11.25	1875977	15.75	1025472	18.60
017	SAMPLE	268556-005	1362728	10.06	2118798	11.25	1775532	15.75	994659	18.60
018	SAMPLE	268556-008	1370659	10.05	2068173	11.25	1772585	15.75	957631	18.60
019	SAMPLE	268556-001	1298928	10.05	2060177	11.25	1705574	15.75	950946	18.60
020	SAMPLE	268556-003	1331713	10.05	2031081	11.25	1800034	15.75	1019609	18.60
021	SAMPLE	268513-015	1238123	10.06	1928962	11.25	1579063	15.75	895394	18.60
022	MSS	268557-001	1274003	10.05	2011628	11.25	1749847	15.75	939487	18.60
023	SAMPLE	268558-001	1262242	10.05	1890393	11.25	1710485	15.75	927632	18.60
024	MS	QC797770	1210709	10.05	1856895	11.25	1617821	15.75	946824	18.60
025	MSD	QC797771	1260902	10.05	2052580	11.25	1774853	15.75	992628	18.60

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 485305964

Date : 07/31/15 Reference : ig713
Sequence : MSVOA09 igv Analyzed : 07/07/15 17:12

#	Type	Sample ID	PFLBZ	RT	14DFB	RT	CLBZD5	RT	DCBZ14D4	RT
		ICAL STD	987439	11.04	1506110	12.30	1326780	16.67	740445	19.10
		LOWER LIMIT	493720	10.54	753055	11.80	663390	16.17	370223	18.60
		UPPER LIMIT	1974878	11.54	3012220	12.80	2653560	17.17	1480890	19.60
001	IB		1124730	11.03	2017597	12.29	1954760	16.66	870367	19.09
004	CCV	20PPB	1158431	11.00	2022004	12.27	1944148	16.64	1008685	19.09
005	BS	QC797874	1186250	11.01	2036955	12.28	1950523	16.65	971246	19.09
008	BSD	QC797875	1150168	11.03	1973923	12.29	1867942	16.66	947535	19.09
010	BLANK	QC797876	1180346	11.03	1963006	12.29	1779358	16.66	837186	19.09
011	SAMPLE	268513-011	1117020	11.03	1911656	12.29	1756524	16.66	816318	19.09
012	SAMPLE	268513-015	1114428	11.03	1911849	12.29	1677544	16.66	794489	19.09
013	SAMPLE	268513-024	1033295	11.03	1789625	12.30	1694700	16.66	775036	19.10
014	SAMPLE	268556-001	1035138	11.04	1806514	12.30	1706129	16.66	786188	19.10
015	SAMPLE	268556-003	1044423	11.04	1805906	12.30	1669828	16.66	842533	19.10
016	SAMPLE	268556-005	1017130	11.03	1788480	12.30	1689575	16.66	759948	19.10
017	SAMPLE	268556-008	1012762	11.03	1791963	12.29	1671011	16.66	772586	19.09
018	SAMPLE	268556-010	1020796	11.03	1794274	12.29	1691555	16.66	777212	19.10
019	SAMPLE	268557-001	1031442	11.03	1797054	12.29	1696769	16.65	781778	19.10
020	SAMPLE	268558-001	1014447	11.03	1776847	12.29	1666425	16.66	778900	19.09
021	SAMPLE	268563-015	1094064	11.03	1861286	12.29	1682953	16.66	780511	19.10
022	SAMPLE	268569-010	998292	11.03	1748221	12.29	1638246	16.66	744861	19.10

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475253923

Instrument : MSVOA08 Begun : 06/25/15 08:03
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hfp01	IB				06/25/15 08:03	1.0	1	?t
002	hfp02	IB				06/25/15 08:37	1.0	1	?t
003	hfp03	TUN	BFB			06/25/15 09:42	1.0	2	
004	hfp04	TUN	BFB			06/25/15 09:53	1.0	2	
005	hfp05	TUN	BFB			06/25/15 10:29	1.0	2	
006	hfp06	X	IB			06/25/15 10:53	1.0	1	
007	hfp07	IB	CALIB			06/25/15 11:26	1.0	1	
008	hfp08	ICAL				06/25/15 12:00	1.0	3 4 5 6 1	
009	hfp09	ICAL				06/25/15 12:34	1.0	3 4 5 6 1	
010	hfp10	ICAL				06/25/15 13:07	1.0	3 4 5 6 1	
011	hfp11	ICAL				06/25/15 13:41	1.0	3 4 5 6 1	
012	hfp12	ICAL				06/25/15 14:15	1.0	3 4 5 6 1	
013	hfp13	ICAL				06/25/15 14:49	1.0	3 4 5 6 1	
014	hfp14	ICAL				06/25/15 15:23	1.0	3 4 5 6 1	
015	hfp15	ICAL				06/25/15 15:57	1.0	3 4 5 6 1	
016	hfp16	ICAL				06/25/15 16:31	1.0	3 4 5 6 1	
017	hfp17	ICV				06/25/15 17:05	1.0	7 1	
018	hfp18	ICV				06/25/15 17:39	1.0	8 9 10 1	
019	hfp19	X	IB			06/25/15 18:13	1.0	1	
020	hfp20	X	IB			06/25/15 18:47	1.0	1	
021	hfp21	X	IB			06/25/15 19:20	1.0	1	
022	hfp22	X	IB			06/25/15 19:54	1.0	3 4 11 12 1	cc- cs

DJA 06/26/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 22.

Analyst: DJA Date: 06/26/15 Reviewer: LW Date: 06/29/15

Standards used: 1=S27244 2=S27180 3=S26360 4=S27172 5=S27416 6=S26220 7=S26064 8=S27331 9=S27404 10=S27533 11=S27151 12=S25155

Flags used: -=low bias ?t=missing tune cc=CCV CCC failure cs=CCV SPCC failure

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CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 475304292

Instrument : MSVOA08 Begun : 07/30/15 07:32
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	hgu01	X	HG			07/30/15 07:32	1.0	1	
002	hgu02	X	IB			07/30/15 08:05	1.0	1	
003	hgu03	TUN	BFB			07/30/15 08:42	1.0	2	t
004	hgu04	TUN	BFB			07/30/15 08:59	1.0	2	t
005	hgu05	TUN	BFB			07/30/15 09:35	1.0	2	t
006	hgu06	TUN	BFB			07/30/15 10:16	1.0	2	
007	hgu07	CCV				07/30/15 10:43	1.0	3 4 5 6 1	cc+
008	hgu08	CCV				07/30/15 12:08	1.0	3 4 5 6 1	
009	hgu09	X				07/30/15 12:51	1.0	7 1	
010	hgu10	BS	QC797679	Water	225639	07/30/15 13:24	1.0	8 9 10 11 1	
011	hgu11	BSD	QC797680	Water	225639	07/30/15 13:58	1.0	8 9 10 11 1	
012	hgu12	X	IB			07/30/15 14:32	1.0	1	
013	hgu13	BLANK	QC797681	Water	225639	07/30/15 15:05	1.0	1	
014	hgu14	SAMPLE	268513-011	Water	225639	07/30/15 15:39	1.0	1	
015	hgu15	SAMPLE	268513-024	Water	225639	07/30/15 16:13	1.0	1	
016	hgu16	SAMPLE	268556-010	Water	225639	07/30/15 16:47	1.0	1	
017	hgu17	SAMPLE	268556-005	Water	225639	07/30/15 17:21	1.0	1	
018	hgu18	SAMPLE	268556-008	Water	225639	07/30/15 17:55	1.0	1	
019	hgu19	SAMPLE	268556-001	Water	225639	07/30/15 18:29	2.0	1	foamer
020	hgu20	SAMPLE	268556-003	Water	225639	07/30/15 19:02	3.333	1	foamer
021	hgu21	SAMPLE	268513-015	Water	225639	07/30/15 19:36	3.333	1	foamer
022	hgu22	MSS	268557-001	Water	225639	07/30/15 20:10	5.0	1	foamer
023	hgu23	SAMPLE	268558-001	Water	225639	07/30/15 20:44	250.0	1	foamer
024	hgu24	MS	QC797770	Water	225639	07/30/15 21:18	5.0	8 9 10 11 1	
025	hgu25	MSD	QC797771	Water	225639	07/30/15 21:51	5.0	8 9 10 11 1	foamer
026	hgu26	X	IB			07/30/15 22:25	1.0	1	
027	hgu27	X	IB			07/30/15 22:59	1.0	1	

DJA 07/31/15 : retuned after file 4

DJA 07/31/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 27.

Analyst: DJA Date: 07/31/15 Reviewer: LW Date: 07/31/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27559 5=S27699 6=S26220 7=S27642 8=S27558 9=S27556 10=S27533 11=S26064

Flags used: +=high bias cc=CCV CCC failure t=tune failure

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CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 485271359

Instrument : MSVOA09 Begun : 07/07/15 10:38
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	ig701	TUN	BFB			07/07/15 10:38	1.0	1	
002	ig702	TUN	BFB			07/07/15 10:49	1.0	1	
003	ig703	IB				07/07/15 11:27	1.0	2	
004	ig704	IB				07/07/15 12:02	1.0	2	
005	ig705	IB				07/07/15 12:36	1.0	2	
006	ig706	IB	CALIB			07/07/15 13:11	1.0	2	
007	ig707	ICAL	.25/.5PPB			07/07/15 13:45	1.0	3 4 5 6 2	
008	ig708	ICAL	.5/1PPB			07/07/15 14:19	1.0	2 3 4 5 6	
009	ig709	ICAL	2PPB			07/07/15 14:54	1.0	3 4 5 6 2	
010	ig710	ICAL	5PPB			07/07/15 15:28	1.0	2 3 4 5 6	
011	ig711	ICAL	10PPB			07/07/15 16:03	1.0	2 3 4 5 6	
012	ig712	ICAL	20PPB			07/07/15 16:37	1.0	2 3 4 5 6	
013	ig713	ICAL	50PPB			07/07/15 17:12	1.0	2 3 4 5 6	
014	ig714	ICAL	75PPB			07/07/15 17:46	1.0	2 3 4 5 6	
015	ig715	ICAL	100PPB			07/07/15 18:21	1.0	2 3 4 5 6	
016	ig716	ICV	GAS			07/07/15 18:56	1.0	7 2	
017	ig717	ICV				07/07/15 19:30	1.0	8 9 10 2	
018	ig718	IB				07/07/15 20:04	1.0	2	

DAR 07/08/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 18.

Analyst: DAR Date: 07/08/15 Reviewer: LW Date: 07/09/15

Standards used: 1=S27180 2=S27403 3=S26360 4=S27559 5=S27416 6=S26220 7=S26358 8=S27558 9=S27556 10=S27533

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 485305964

Instrument : MSVOA09 Begun : 07/31/15 11:24
Method : EPA 8260C SOP Version : TVH_8260B_rv1

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	igv01	IB				07/31/15 11:24	1.0	1	?t
002	igv02	TUN	BFB			07/31/15 11:52	1.0	2	t
003	igv03	TUN	BFB			07/31/15 12:08	1.0	2	
004	igv04	CCV	20PPB			07/31/15 12:35	1.0	3 4 5 6 1	
005	igv05	BS	QC797874	Water	225691	07/31/15 13:23	1.0	7 8 9 10 1	
006	igv06	X	QC797875	Water	225691	07/31/15 13:57	1.0	7 8 9 10 1	spk
007	igv07	X	IB			07/31/15 14:32	1.0	1	
008	igv08	BSD	QC797875	Water	225691	07/31/15 15:06	1.0	7 8 9 10 1	
009	igv09	X	IB			07/31/15 15:50	1.0	1	
010	igv10	BLANK	QC797876	Water	225691	07/31/15 16:25	1.0	1	
011	igv11	SAMPLE	268513-011	Water	225691	07/31/15 17:00	1.0	1	
012	igv12	SAMPLE	268513-015	Water	225691	07/31/15 17:34	3.333	1	foamer
013	igv13	SAMPLE	268513-024	Water	225691	07/31/15 18:09	1.0	1	
014	igv14	SAMPLE	268556-001	Water	225691	07/31/15 18:43	2.0	1	foamer
015	igv15	SAMPLE	268556-003	Water	225691	07/31/15 19:17	3.333	1	foamer, headspace <= 1 mL
016	igv16	SAMPLE	268556-005	Water	225691	07/31/15 19:52	1.0	1	
017	igv17	SAMPLE	268556-008	Water	225691	07/31/15 20:26	1.0	1	
018	igv18	SAMPLE	268556-010	Water	225691	07/31/15 21:01	1.0	1	
019	igv19	SAMPLE	268557-001	Water	225691	07/31/15 21:35	5.0	1	foamer
020	igv20	SAMPLE	268558-001	Water	225691	07/31/15 22:10	250.0	1	foamer
021	igv21	SAMPLE	268563-015	Water	225691	07/31/15 22:45	33.33	1	foamer, pH > 2
022	igv22	SAMPLE	268569-010	Water	225691	07/31/15 23:19	1.0	1	1:ACE=490
023	igv23	X	IB			07/31/15 23:53	1.0	1	
024	igv24	X	IB			08/01/15 00:28	1.0	1	

NJT 08/01/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 24.

NJT 08/01/15 : Matrix spikes were not performed for this analysis in batch 225691 due to insufficient sample amount.

Analyst: NJT Date: 08/01/15 Reviewer: LW Date: 08/04/15

Standards used: 1=S27698 2=S27180 3=S26360 4=S27823 5=S27699 6=S26220 7=S27007 8=S27558 9=S27556 10=S27533

Flags used: ?t=missing tune spk=5% spike rule t=tune failure

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MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): DJA 7/30/15

For Undiluted samples, pH checked (initials/date): ZJA 7/31/15

Batch #: 225639

Prep Date: 7/30/15

Instrument: MS 8

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268556-1	B	✓			1		2x	foamer				
2	~~-2~~							~~3x~~	↓ DJA 7/30				
3	268557-1	B	✓			3		5x	foamer				
4	-1MS	↓	✓			A1		↓	↓ QC 797770				
5	-1MSD	↓	✓			A1		↓	↓ ↓ 1				
6	268558-1	B	✓			4		250x	↓				
7	~~268460-1~~						1	~~1x~~	~~F12 ✓~~ DJA 7/30				
8	268513-15	B	✓			5		3.33x	foamer				
9	-11	A	✓					1x	EB				
10	-24	A	✓					1x	EB				
11	268556-3	C	✓			6		3x	foamer				
12	-5	B	✓					1x					
13	-8	B	✓					1x					
14	-10	B	✓					1x	SB				
15													
16													
17													
18													
19													
20													
21													
22													

MSVOA WATER Prepsheet

Dilutions prepared & pH of dilutions checked (initials/date): NJT 7/31/15
For Undiluted samples, pH checked (initials/date): ~~NJT 8/1/15~~

Batch #: 225691
Prep Date: 7/31/15
Instrument: MS9

	Sample ID	Vial	pH <2	pH if >2	HS?	Dil'n flask ID	RR #	DF	Comments	20% ccv?	hold	due	$Rush
1	268513-15	C	✓			12		3.33x	foamer, V-/C-Acetone + CS2, TCE hit w/ ↑Surr				
2	-11	B	✓					1x					
3	-24	C	✓										
4	268556-10	C	✓					1x					
5	-5		✓										
6	-8		✓										
7	-1		✓			9		2x	foamer, TCE + Benzene hit w/ surr↑				
8	-3	B	✓		Small Bubble	11		3.33x	foamer,				
9	268557-1	C	✓			10		5x					
10	268558-1		✓			5		250x					
11	268563-15	B		7		12	1	33.3x	Foamer, 2-clave		8/6		
12	268569-10	B	✓					1x					
13													
14													
15													
16													
17													
18													
19													
20													
21													
22													

Dilutions for 268558 MSVOA Water
Curtis & Tompkins Laboratories

Type	Sample ID	IDFs
SAMPLE	268558-001	250X
MS	QC797770	5X
MSD	QC797771	5X

Case Narrative Addendum: Manual Integrations for 268558 GC/MS VOA (Water)

For Calibration MSVOA08 (475253923002):
Acetone: Corrected fronting or tailing peak integration in (hfp10).
Ethanol: Corrected fronting or tailing peak integration in multiple levels.

For Calibration MSVOA09 (485271359002):
2-Butanone: Combined split peak in multiple levels.
Vinyl Acetate: Combined split peak in 10PPB (ig711).

Laboratory Job Number 268558

ANALYTICAL REPORT

Metals

Matrix: Filtrate

Curtis & Tompkins, Ltd.

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	B742-L-WC-072915	Batch#:	225705
Matrix:	Filtrate	Sampled:	07/29/15
Units:	ug/L	Received:	07/29/15
Diln Fac:	1.000	Prepared:	07/31/15

Type: SAMPLE Lab ID: 268558-001

Analyte	Result	LOQ	DL	Analyzed
Arsenic	6.3	5.0	1.5	08/03/15
Iron	4,800	100	20	08/05/15
Manganese	1,700	5.0	1.0	08/03/15

Type: BLANK Analyzed: 08/03/15
Lab ID: QC797930

Analyte	Result	LOQ	DL
Arsenic	4.0 U	5.0	1.5
Iron	50 U	100	20
Manganese	2.5 U	5.0	1.0

Type: BLANK Analyzed: 08/03/15
Lab ID: QC797931

Analyte	Result	LOQ	DL
Arsenic	4.0 U	5.0	1.5
Iron	50 U	100	20
Manganese	2.5 U	5.0	1.0

U= Not Detected at or above DL
DL= Detection Limit
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Matrix:	Filtrate	Batch#:	225705
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000	Analyzed:	08/03/15

Type: BS Lab ID: QC797932

Analyte	Spiked	Result	%REC	Limits
Arsenic	100.0	95.49	95	80-120
Iron	10,000	10,350	104	80-120
Manganese	100.0	99.81	100	80-120

Type: BSD Lab ID: QC797933

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Arsenic	100.0	95.95	96	80-120	0	20
Iron	10,000	10,770	108	80-120	4	20
Manganese	100.0	98.70	99	80-120	1	20

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Matrix:	Filtrate	Received:	07/29/15
Units:	ug/L	Prepared:	07/31/15
Diln Fac:	1.000		

Type: MS Lab ID: QC797934

Analyte	MSS Result	Spiked	Result	%REC	Limits	Analyzed
Arsenic	13.31	100.0	128.3	115	80-120	08/03/15
Iron	328.4	10,000	10,540	102	80-120	08/04/15
Manganese	1,970	100.0	1,982	12 NM	80-120	08/03/15

Type: MSD Lab ID: QC797935

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Analyzed
Arsenic	100.0	121.2	108	80-120	6	20	08/03/15
Iron	10,000	10,200	99	80-120	3	20	08/04/15
Manganese	100.0	1,992	22 NM	80-120	0	20	08/03/15

NM= Not Meaningful: Sample concentration > 4X spike concentration
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Units:	ug/L
Type:	Serial Dilution	Diln Fac:	5.000
MSS Lab ID:	268557-001	Batch#:	225705
Lab ID:	QC797936	Sampled:	07/28/15
Matrix:	Filtrate	Received:	07/29/15

Analyte	MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim	Analyzed
Arsenic	13.31	5.000	20.00 U	25.00	NC	10	08/03/15
Iron	328.4	100.0	481.0 J	500.0	NC	10	08/04/15
Manganese	1,970	5.000	1,995	25.00	1	10	08/03/15

J= Estimated value
U= Not Detected at or above DL
NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W07-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268557-001	Sampled:	07/28/15
Lab ID:	QC797937	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/04/15
Units:	ug/L		

Analyte	MSS Result	Spiked	Result	%REC	Limits
Arsenic	13.31	100.0	123.2	110	75-125
Iron	328.4	10,000	12,130	118	75-125
Manganese	1,970	100.0	2,056	86 NM	75-125

NM= Not Meaningful: Sample concentration > 4X spike concentration

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W06-072815	Diln Fac:	5.000
Type:	Serial Dilution	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798414	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15
Units:	ug/L		

Analyte	MSS Result	MSS LOQ	Result	LOQ	% Diff	Lim
Arsenic	28.66	5.000	49.58	25.00	NC	10
Iron	2,310	100.0	2,192	500.0	5	10
Manganese	4,484	5.000	4,813	25.00	7	10

NC= Not Calculated
LOQ= Limit of Quantitation

Curtis & Tompkins, Ltd.

Batch QC Report

Dissolved Metals Analytical Report

Lab #:	268558	Location:	MINS BGMP
Client:	Versar, Inc.	Prep:	METHOD
Project#:	N62473-11-D-2215	Analysis:	EPA 6010C
Field ID:	DIC85W06-072815	Diln Fac:	1.000
Type:	Post Digest Spike	Batch#:	225705
MSS Lab ID:	268556-002	Sampled:	07/28/15
Lab ID:	QC798415	Received:	07/29/15
Matrix:	Filtrate	Analyzed:	08/05/15
Units:	ug/L		

Analyte	MSS Result	Spiked	Result	%REC	Limits
Arsenic	28.66	100.0	156.8	128 *	75-125
Iron	2,310	10,000	12,760	105	75-125
Manganese	4,484	100.0	4,621	136 NM	75-125

*= Value outside of QC limits; see narrative
NM= Not Meaningful: Sample concentration > 4X spike concentration

REPORTING SUMMARY FOR 268558 METALS Filtrate
Curtis & Tompkins Laboratories

Lab ID	Inst ID	Analyzed	IDF	AS	FE	MN
268558-001	MET08	08/03/15 02:58	1.0	+		+
268558-001	MET08	08/05/15 11:15	1.0			
268558-001	MET08	08/05/15 12:29	1.0		+	
QC797930	MET08	08/03/15 00:39	1.0	+	+	+
QC797930	MET08	08/04/15 12:00	1.0			
QC797930	MET08	08/04/15 16:06	1.0			
QC797931	MET08	08/03/15 00:44	1.0	+	+	+
QC797931	MET08	08/04/15 12:05	1.0			
QC797931	MET08	08/04/15 16:11	1.0			
QC797932	MET08	08/03/15 00:49	1.0	+	+	+
QC797932	MET08	08/04/15 12:10	5.0			
QC797932	MET08	08/04/15 16:16	1.0			
QC797932	MET09	08/05/15 15:45	1.0			
QC797933	MET08	08/03/15 00:53	1.0	+	+	+
QC797933	MET08	08/04/15 12:16	5.0			
QC797933	MET08	08/04/15 16:20	1.0			
QC797933	MET09	08/05/15 15:49	1.0			
QC797934	MET08	08/03/15 01:22	1.0	+		+
QC797934	MET08	08/04/15 12:47	5.0			
QC797934	MET08	08/04/15 16:43	1.0		+	
QC797934	MET08	08/06/15 09:16	10.0			
QC797934	MET08	08/06/15 10:59	100.0			
QC797934	MET09	08/06/15 11:39	100.0			
QC797934	MET09	08/06/15 12:34	10.0			
QC797935	MET08	08/03/15 01:30	1.0	+		+
QC797935	MET08	08/04/15 12:56	5.0			
QC797935	MET08	08/04/15 17:07	1.0		+	
QC797935	MET08	08/06/15 09:21	10.0			
QC797935	MET08	08/06/15 11:04	100.0			
QC797935	MET09	08/06/15 11:44	100.0			
QC797935	MET09	08/06/15 12:38	10.0			
QC797936	MET08	08/03/15 01:38	5.0	+		+
QC797936	MET08	08/04/15 13:04	5.0			
QC797936	MET08	08/04/15 17:15	5.0		+	
QC797937	MET08	08/03/15 01:46	1.0			
QC797937	MET08	08/04/15 13:13	1.0	+		+
QC797937	MET08	08/04/15 17:23	1.0		+	
QC798414	MET09	08/05/15 19:38	5.0	+	+	+
QC798414	MET09	08/05/15 20:15	500.0			
QC798415	MET09	08/05/15 19:51	1.0	+	+	+
QC798415	MET09	08/05/15 20:37	100.0			

ICP Data

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/02/15 19:35	1.0		
002	met08_sn_6010	ICAL	L1			08/02/15 19:40	1.0	1	
003	met08_sn_6010	ICAL	L2			08/02/15 19:45	1.0	2	
004	met08_sn_6010	ICAL	L3			08/02/15 19:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/02/15 19:55	1.0	4	
006	met08_sn_6010	ICAL	L5			08/02/15 20:01	1.0	5	
007	met08_sn_6010	ICV				08/02/15 20:08	1.0	6	
008	met08_sn_6010	CRI				08/02/15 20:13	1.0	7	
009	met08_sn_6010	ICB				08/02/15 20:17	1.0		
010	met08_sn_6010	ICSA				08/02/15 20:22	1.0	8	10:MG=520000
011	met08_sn_6010	ICSAB				08/02/15 20:48	1.0	9	5:AL=520000
012	met08_sn_6010	SAMPLE	268559-006	Water	225651	08/02/15 20:53	1.0		1:NA=160000
013	met08_sn_6010	X	RINSE			08/02/15 21:02	1.0		
014	met08_sn_6010	BS	QC797259	Wipe	225531	08/02/15 21:08	5.0		
015	met08_sn_6010	BSD	QC797260	Wipe	225531	08/02/15 21:13	5.0		
016	met08_sn_6010	SAMPLE	268228-001	Wipe	225531	08/02/15 21:18	1.0		
017	met08_sn_6010	SAMPLE	268234-001	Wipe	225531	08/02/15 21:23	1.0		
018	met08_sn_6010	X	RINSE			08/02/15 21:28	1.0		
019	met08_sn_6010	BLANK	QC797261	Miscell.	225532	08/02/15 21:33	1.0		
020	met08_sn_6010	BS	QC797262	Miscell.	225532	08/02/15 21:38	5.0		
021	met08_sn_6010	BSD	QC797263	Miscell.	225532	08/02/15 21:44	5.0		
022	met08_sn_6010	CCV				08/02/15 21:49	1.0	10	
023	met08_sn_6010	CCB				08/02/15 21:56	1.0		
024	met08_sn_6010	SAMPLE	268228-001	Miscell.	225532	08/02/15 22:01	10.0		
025	met08_sn_6010	SAMPLE	268231-001	Miscell.	225532	08/02/15 22:07	10.0		
026	met08_sn_6010	SAMPLE	268233-001	Miscell.	225532	08/02/15 22:12	10.0		
027	met08_sn_6010	SAMPLE	268240-001	Miscell.	225532	08/02/15 22:17	10.0		
028	met08_sn_6010	SAMPLE	268247-001	Miscell.	225532	08/02/15 22:22	10.0		
029	met08_sn_6010	X	RINSE			08/02/15 22:27	1.0		
030	met08_sn_6010	BLANK	QC797528	Wipe	225605	08/02/15 22:32	1.0		
031	met08_sn_6010	BS	QC797529	Wipe	225605	08/02/15 22:37	5.0		
032	met08_sn_6010	BSD	QC797530	Wipe	225605	08/02/15 22:42	5.0		
033	met08_sn_6010	SAMPLE	268402-001	Wipe	225605	08/02/15 22:47	1.0		3:FE=120000
034	met08_sn_6010	CCV				08/02/15 22:55	1.0	10	
035	met08_sn_6010	XCCB				08/02/15 23:03	1.0		
036	met08_sn_6010	CCB				08/02/15 23:06	1.0		
037	met08_sn_6010	SAMPLE	268402-002	Wipe	225605	08/02/15 23:12	1.0		4:FE=290000
038	met08_sn_6010	SAMPLE	268402-003	Wipe	225605	08/02/15 23:19	1.0		
039	met08_sn_6010	X	RINSE			08/02/15 23:24	1.0		
040	met08_sn_6010	BLANK	QC797803	Filtrate	225672	08/02/15 23:29	1.0		
041	met08_sn_6010	BLANK	QC797804	Filtrate	225672	08/02/15 23:34	1.0		
042	met08_sn_6010	BS	QC797805	Filtrate	225672	08/02/15 23:39	1.0		
043	met08_sn_6010	BSD	QC797806	Filtrate	225672	08/02/15 23:44	1.0		
044	met08_sn_6010	MSS	268460-003	Filtrate	225672	08/02/15 23:48	1.0		1:NA=440000
045	met08_sn_6010	MS	QC797807	Filtrate	225672	08/02/15 23:53	1.0		1:NA=410000
046	met08_sn_6010	MSD	QC797808	Filtrate	225672	08/02/15 23:57	1.0		1:NA=440000
047	met08_sn_6010	CCV				08/03/15 00:01	1.0	10	
048	met08_sn_6010	CCB				08/03/15 00:09	1.0		
049	met08_sn_6010	SER	QC797809	Filtrate	225672	08/03/15 00:14	5.0		
050	met08_sn_6010	PDS	QC797810	Filtrate	225672	08/03/15 00:19	1.0	11 12 13	
051	met08_sn_6010	SAMPLE	268430-001	Filtrate	225672	08/03/15 00:23	1.0		1:NA=120000
052	met08_sn_6010	SAMPLE	268430-002	Filtrate	225672	08/03/15 00:28	1.0		1:NA=260000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85309335

Instrument : MET08 Begun : 08/02/15 19:35
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	X	RINSE			08/03/15 00:34	1.0		
054	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/03/15 00:39	1.0		
055	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/03/15 00:44	1.0		
056	met08_sn_6010	BS	QC797932	Filtrate	225705	08/03/15 00:49	1.0		
057	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/03/15 00:53	1.0		
058	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/03/15 00:57	1.0		3:MG=560000
059	met08_sn_6010	CCV				08/03/15 01:06	1.0	10	
060	met08_sn_6010	XCCB				08/03/15 01:13	1.0		
061	met08_sn_6010	CCB				08/03/15 01:17	1.0		
062	met08_sn_6010	MS	QC797934	Filtrate	225705	08/03/15 01:22	1.0		3:MG=530000
063	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/03/15 01:30	1.0		3:MG=530000
064	met08_sn_6010	SER	QC797936	Filtrate	225705	08/03/15 01:38	5.0		2:NA=940000
065	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/03/15 01:46	1.0	11 12 13	3:MG=510000
066	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/03/15 01:54	1.0		
067	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/03/15 01:59	10.0		
068	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/03/15 02:04	1.0		
069	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/03/15 02:09	1.0		
070	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/03/15 02:14	1.0		4:MG=580000
071	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/03/15 02:23	1.0		4:MG=570000
072	met08_sn_6010	CCV				08/03/15 02:31	1.0	10	
073	met08_sn_6010	XCCB				08/03/15 02:39	1.0		
074	met08_sn_6010	CCB				08/03/15 02:43	1.0		
075	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/03/15 02:48	1.0		
076	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/03/15 02:53	1.0		
077	met08_sn_6010	SAMPLE	268558-001	Filtrate	225705	08/03/15 02:58	1.0		4:NA=1900000
078	met08_sn_6010	CCV				08/03/15 03:07	1.0	10	
079	met08_sn_6010	XCCB				08/03/15 03:15	1.0		
080	met08_sn_6010	CCB				08/03/15 03:19	1.0		

NCD 08/03/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 80.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85309335

Date : 08/02/15 Reference : met08_sn_6010
Sequence : MET08 08/02/15 Analyzed : 08/02/15 19:40

#	Type	Sample ID	Y A
		ICAL STD	3792342
		LOWER LIMIT	1137702
		UPPER LIMIT	4550810
009	ICB		3818530
010	ICSA		3268174
011	ICSAB		3232405
034	CCV		3726955
036	CCB		3734799
044	MSS	268460-003	3654613
047	CCV		3726955
048	CCB		3801776
051	SAMPLE	268430-001	3765508
052	SAMPLE	268430-002	3668109
054	BLANK	QC797930	3808425
055	BLANK	QC797931	3816516
056	BS	QC797932	3778177
057	BSD	QC797933	3781025
058	MSS	268557-001	2915258
059	CCV		3770247
061	CCB		3848822
062	MS	QC797934	2972512
063	MSD	QC797935	2953631
064	SER	QC797936	3352778
065	PDS	QC797937	2970155
070	MSS	268556-002	2786480
071	SAMPLE	268556-003	2783368
072	CCV		3726068
074	CCB		3714635
075	SAMPLE	268556-005	3777856
076	SAMPLE	268556-010	3816632
077	SAMPLE	268558-001	3014976
078	CCV		3699746
080	CCB		3756173

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85309335001
Units : ug/L

Date : 02-AUG-2015 19:35
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85309335002	L1	02-AUG-2015 19:40	S27752
L2	met08_sn_6010	85309335003	L2	02-AUG-2015 19:45	S27753
L3	met08_sn_6010	85309335004	L3	02-AUG-2015 19:49	S27754
L4	met08_sn_6010	85309335005	L4	02-AUG-2015 19:55	S27755
L5	met08_sn_6010	85309335006	L5	02-AUG-2015 20:01	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	7.1600	7.8180	7.6919	7.8257		LOR0	0.00000	0.12781		7.6239	1.000	0.995	
Manganese	A	1091.8	1067.2	1038.8	1012.8		LOR0	0.00000	9.87E-4		1052.7	1.000	0.995	
Iron	R	2.1420		2.0283	1.9703	1.8637	LOR0	0.00000	0.53626		2.0011	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-8	100.00	0	1000.0	-2	10000	0		
Manganese	A	5.0000	8	100.00	5	1000.0	3	10000	0		
Iron	R	100.00	15			1000.0	9	10000	6	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85309335001 Cal Date : 02-AUG-2015

ICV 85309335007 (02-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5028	ug/L	1	10	
Manganese	A	5000	4973	ug/L	-1	10	
Iron	R	20000	20580	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335008.1 File : met08_sn_6010 Time : 02-AUG-2015 20:13
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.893	ug/L	18	30	
Manganese	A	5.000	6.166	ug/L	**23**	30	!cri+
Iron	R	100.0	119.9	ug/L	20	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3813461	0.56

!=warning +=high bias

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335009.1 File : met08_sn_6010 Time : 02-AUG-2015 20:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3818530	0.69

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335010.1 File : met08_sn_6010 Time : 02-AUG-2015 20:22
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[4.618]	5.000	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20220	ug/L	101
Copper	A	20000	21170	ug/L	106
Manganese	A	20000	18960	ug/L	95
Nickel	A	20000	17860	ug/L	89
Vanadium	A	20000	20060	ug/L	100
Aluminum	R	500000	521200	ug/L	104
Calcium	R	500000	503600	ug/L	101
Iron	R	200000	197200	ug/L	99
Magnesium	R	500000	522800	ug/L	105
Titanium	R	20000	19550	ug/L	98

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3268174	-13.82

!=warning +=high bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335011.1 File : met08_sn_6010 Time : 02-AUG-2015 20:48
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	529.3	ug/L	6	20	
Manganese	A	500.0	477.0	ug/L	-5	20	
Iron	R	200000	196500	ug/L	-2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3232405	-14.76

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335047.1 File : met08_sn_6010 Time : 03-AUG-2015 00:01
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	8.0330	5000	5133	ug/L	3	10	
Manganese	A	1052.7	1051.8	5000	5191	ug/L	4	10	
Iron	R	2.0011	2.0311	20000	21780	ug/L	9	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726955	-1.72

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335048.1 File : met08_sn_6010 Time : 03-AUG-2015 00:09
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3801776	0.25

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335059.1 File : met08_sn_6010 Time : 03-AUG-2015 01:06
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.8221	5000	4999	ug/L	0	10	
Manganese	A	1052.7	1033.4	5000	5100	ug/L	2	10	
Iron	R	2.0011	1.8795	20000	20160	ug/L	1	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3770247	-0.58

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335061.1 File : met08_sn_6010 Time : 03-AUG-2015 01:17
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3848822	1.49

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335072.1 File : met08_sn_6010 Time : 03-AUG-2015 02:31
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.3536	5000	4699	ug/L	-6	10	
Manganese	A	1052.7	1025.5	5000	5061	ug/L	1	10	
Iron	R	2.0011	1.4748	20000	15820	ug/L	**-21**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3726068	-1.75

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335074.1 File : met08_sn_6010 Time : 03-AUG-2015 02:43
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3714635	-2.05

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335078.1 File : met08_sn_6010 Time : 03-AUG-2015 03:07
Cal : 85309335001 Caldate : 02-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.6239	7.3911	5000	4723	ug/L	-6	10	
Manganese	A	1052.7	1027.9	5000	5073	ug/L	1	10	
Iron	R	2.0011	1.4901	20000	15980	ug/L	**-20**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3699746	-2.44

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85309335080.1 File : met08_sn_6010 Time : 03-AUG-2015 03:19
Cal : 85309335001 Caldate : 02-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3792342	3756173	-0.95

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 05:34	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 05:39	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 05:44	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 05:49	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 05:54	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 06:00	1.0	5	
007	met08_sn_6010	XICV				08/04/15 06:07	1.0	6	
008	met08_sn_6010	ICV				08/04/15 06:15	1.0	6	
009	met08_sn_6010	XCRI				08/04/15 06:22	1.0	7	
010	met08_sn_6010	CRI				08/04/15 06:42	1.0	7	
011	met08_sn_6010	ICB				08/04/15 06:51	1.0		
012	met08_sn_6010	ICSA				08/04/15 06:56	1.0	8	10:AL=510000
013	met08_sn_6010	ICSAB				08/04/15 07:21	1.0	9	5:AL=500000
014	met08_sn_6010	MSS	268613-004	Water	225732	08/04/15 08:40	1.0		
015	met08_sn_6010	MS	QC798023	Water	225732	08/04/15 08:45	1.0		
016	met08_sn_6010	MSD	QC798024	Water	225732	08/04/15 08:49	1.0		
017	met08_sn_6010	SER	QC798025	Water	225732	08/04/15 08:53	5.0		
018	met08_sn_6010	PDS	QC798026	Water	225732	08/04/15 08:58	1.0	10 11 12	
019	met08_sn_6010	X	RINSE			08/04/15 09:02	1.0		
020	met08_sn_6010	BLANK	QC798085	Soil	225747	08/04/15 09:07	1.0		
021	met08_sn_6010	BS	QC798086	Soil	225747	08/04/15 09:12	5.0		
022	met08_sn_6010	BSD	QC798087	Soil	225747	08/04/15 09:17	5.0		
023	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 09:22	1.0		6:FE=530000
024	met08_sn_6010	CCV				08/04/15 09:29	1.0	13	
025	met08_sn_6010	CCB				08/04/15 09:37	1.0		
026	met08_sn_6010	MS	QC798088	Soil	225747	08/04/15 09:42	5.0		1:FE=150000
027	met08_sn_6010	MSD	QC798089	Soil	225747	08/04/15 09:49	5.0		2:FE=120000
028	met08_sn_6010	SAMPLE	268664-001	Soil	225747	08/04/15 09:57	10.0		
029	met08_sn_6010	SAMPLE	268664-002	Soil	225747	08/04/15 10:01	10.0		
030	met08_sn_6010	SAMPLE	268664-003	Soil	225747	08/04/15 10:06	10.0		
031	met08_sn_6010	SAMPLE	268664-004	Soil	225747	08/04/15 10:10	10.0		
032	met08_sn_6010	SAMPLE	268664-005	Soil	225747	08/04/15 10:18	10.0		
033	met08_sn_6010	SAMPLE	268664-006	Soil	225747	08/04/15 10:26	10.0		
034	met08_sn_6010	MSS	268623-001	Soil	225747	08/04/15 10:30	100.0		
035	met08_sn_6010	CCV				08/04/15 10:35	1.0	13	
036	met08_sn_6010	CCB				08/04/15 10:42	1.0		
037	met08_sn_6010	X	RINSE			08/04/15 10:50	1.0		
038	met08_sn_6010	X	RINSE			08/04/15 10:55	1.0		
039	met08_sn_6010	X	RINSE			08/04/15 11:00	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 11:05	1.0		
041	met08_sn_6010	CCV				08/04/15 11:10	1.0	13	
042	met08_sn_6010	CCB				08/04/15 11:18	1.0		
043	met08_sn_6010	MSS	268334-001	Water	225471	08/04/15 11:39	10.0		
044	met08_sn_6010	SER	QC798098	Water	225471	08/04/15 11:43	50.0		
045	met08_sn_6010	PDS	QC798099	Water	225471	08/04/15 11:48	10.0	10 11 12	
046	met08_sn_6010	X	RINSE			08/04/15 11:55	1.0		
047	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 12:00	1.0		
048	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 12:05	1.0		
049	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 12:10	5.0		
050	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 12:16	5.0		
051	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 12:21	1.0		3:MG=540000
052	met08_sn_6010	X	RINSE			08/04/15 12:29	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311374

Instrument : MET08 Begun : 08/04/15 05:34
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCV				08/04/15 12:34	1.0	13	
054	met08_sn_6010	CCB				08/04/15 12:42	1.0		
055	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 12:47	5.0		1:NA=750000
056	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 12:56	5.0		1:NA=860000
057	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 13:04	5.0		2:NA=900000
058	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 13:13	1.0	10 11 12	3:MG=510000
059	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 13:21	1.0		
060	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 13:26	1.0		5:K=370000
061	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 13:33	1.0		
062	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 13:38	1.0		
063	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 13:43	1.0		4:CA=560000
064	met08_sn_6010	X	RINSE			08/04/15 13:52	1.0		
065	met08_sn_6010	CCV				08/04/15 13:57	1.0	13	
066	met08_sn_6010	CCB				08/04/15 14:05	1.0		
067	met08_sn_6010	CCB				08/04/15 14:09	1.0		

NCD 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 54.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S26229 11=S26230 12=S27470 13=S27756

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85311374

Date : 08/04/15 Reference : met08_sn_6010
Sequence : MET08 08/04/15 Analyzed : 08/04/15 05:39

#	Type	Sample ID	Y A
		ICAL STD	3845807
		LOWER LIMIT	1153742
		UPPER LIMIT	4614969
011	ICB		3906415
012	ICSA		3208743
013	ICSAB		3241075
014	MSS	268613-004	3998438
024	CCV		3773209
025	CCB		3859228
041	CCV		3804961
042	CCB		3925029
047	BLANK	QC797930	3987645
048	BLANK	QC797931	3964995
049	BS	QC797932	3869452
050	BSD	QC797933	3860642
051	MSS	268557-001	2838135
053	CCV		3786842
054	CCB		3782945
055	MS	QC797934	3377321
056	MSD	QC797935	3345433
057	SER	QC797936	3335479
058	PDS	QC797937	2940760
063	MSS	268556-002	2810943
065	CCV		3728529
066	CCB		3862989

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 METALS Filtrate: EPA 6010C

Inst : MET08 Reviewer : ---
Calnum : 85311374001 Date : 04-AUG-2015 05:34
Units : ug/L X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311374002	L1	04-AUG-2015 05:39	S27752
L2	met08_sn_6010	85311374003	L2	04-AUG-2015 05:44	S27753
L3	met08_sn_6010	85311374004	L3	04-AUG-2015 05:49	S27754
L4	met08_sn_6010	85311374005	L4	04-AUG-2015 05:54	S27755
L5	met08_sn_6010	85311374006	L5	04-AUG-2015 06:00	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	9.6800	7.9950	7.9413	8.2519		LOR0	0.00000	0.12123		8.4671	1.000	0.995	
Manganese	A	1174.5	1126.3	1089.9	1074.0		LOR0	0.00000	9.31E-4		1116.2	1.000	0.995	
Iron	R	2.1270		1.9293	1.8954	1.8895	LOR0	0.00000	0.52922		1.9603	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	17	100.00	-3	1000.0	-4	10000	0		
Manganese	A	5.0000	9	100.00	5	1000.0	1	10000	0		
Iron	R	100.00	13			1000.0	2	10000	0	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311374001 Cal Date : 04-AUG-2015

ICV 85311374008 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5046	ug/L	1	10	
Manganese	A	5000	5006	ug/L	0	10	
Iron	R	20000	20230	ug/L	1	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374010.1 File : met08_sn_6010 Time : 04-AUG-2015 06:42
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.782	ug/L	16	30	
Manganese	A	5.000	6.242	ug/L	**25**	30	!cri+
Iron	R	100.0	118.6	ug/L	19	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3884369	1.00

!=warning +=high bias

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374011.1 File : met08_sn_6010 Time : 04-AUG-2015 06:51
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3906415	1.58

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374012.1 File : met08_sn_6010 Time : 04-AUG-2015 06:56
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-1.425]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	20010	ug/L	100
Copper	A	20000	21200	ug/L	106
Manganese	A	20000	19260	ug/L	96
Nickel	A	20000	18070	ug/L	90
Vanadium	A	20000	20150	ug/L	101
Aluminum	R	500000	506100	ug/L	101
Calcium	R	500000	492100	ug/L	98
Iron	R	200000	190200	ug/L	95
Magnesium	R	500000	502800	ug/L	101
Titanium	R	20000	20110	ug/L	101

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3208743	-16.57

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374013.1 File : met08_sn_6010 Time : 04-AUG-2015 07:21
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	519.6	ug/L	4	20	
Manganese	A	500.0	482.7	ug/L	-3	20	
Iron	R	200000	186800	ug/L	-7		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3241075	-15.72

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374053.1 File : met08_sn_6010 Time : 04-AUG-2015 12:34
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.8965	5000	4786	ug/L	-4	10	
Manganese	A	1116.2	1049.1	5000	4883	ug/L	-2	10	
Iron	R	1.9603	1.7499	20000	18520	ug/L	-7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3786842	-1.53

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374054.1 File : met08_sn_6010 Time : 04-AUG-2015 12:42
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3782945	-1.63

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374065.1 File : met08_sn_6010 Time : 04-AUG-2015 13:57
Cal : 85311374001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	8.4671	7.5343	5000	4567	ug/L	-9	10	
Manganese	A	1116.2	1040.2	5000	4842	ug/L	-3	10	
Iron	R	1.9603	1.5271	20000	16160	ug/L	**-19**	10	c- ***

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3728529	-3.05

-=low bias c=CCV

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311374066.1 File : met08_sn_6010 Time : 04-AUG-2015 14:05
Cal : 85311374001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3845807	3862989	0.45

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/04/15 14:13	1.0		
002	met08_sn_6010	ICAL	L1			08/04/15 14:18	1.0	1	
003	met08_sn_6010	ICAL	L2			08/04/15 14:23	1.0	2	
004	met08_sn_6010	ICAL	L3			08/04/15 14:27	1.0	3	
005	met08_sn_6010	ICAL	L4			08/04/15 14:32	1.0	4	
006	met08_sn_6010	ICAL	L5			08/04/15 14:40	1.0	5	
007	met08_sn_6010	ICV				08/04/15 14:47	1.0	6	
008	met08_sn_6010	XCRI				08/04/15 14:54	1.0	7	
009	met08_sn_6010	CRI				08/04/15 15:05	1.0	7	
010	met08_sn_6010	ICB				08/04/15 15:13	1.0		
011	met08_sn_6010	ICSA				08/04/15 15:22	1.0	8	10:AL=560000
012	met08_sn_6010	ICSAB				08/04/15 15:47	1.0	9	5:AL=530000
013	met08_sn_6010	SAMPLE	268517-023	Miscell.	225698	08/04/15 15:54	1.0		6:CA=3500000
014	met08_sn_6010	X	RINSE			08/04/15 16:01	1.0		
015	met08_sn_6010	BLANK	QC797930	Filtrate	225705	08/04/15 16:06	1.0		
016	met08_sn_6010	BLANK	QC797931	Filtrate	225705	08/04/15 16:11	1.0		
017	met08_sn_6010	BS	QC797932	Filtrate	225705	08/04/15 16:16	1.0		
018	met08_sn_6010	BSD	QC797933	Filtrate	225705	08/04/15 16:20	1.0		
019	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:24	100.0		
020	met08_sn_6010	MSS	268557-001	Filtrate	225705	08/04/15 16:29	1.0		3:MG=590000
021	met08_sn_6010	X	RINSE			08/04/15 16:38	1.0		
022	met08_sn_6010	MS	QC797934	Filtrate	225705	08/04/15 16:43	1.0		2:MG=560000
023	met08_sn_6010	CCV				08/04/15 16:50	1.0	10	
024	met08_sn_6010	XCCB				08/04/15 16:58	1.0		
025	met08_sn_6010	CCB				08/04/15 17:02	1.0		
026	met08_sn_6010	MSD	QC797935	Filtrate	225705	08/04/15 17:07	1.0		2:MG=560000
027	met08_sn_6010	SER	QC797936	Filtrate	225705	08/04/15 17:15	5.0		2:NA=890000
028	met08_sn_6010	PDS	QC797937	Filtrate	225705	08/04/15 17:23	1.0	11 12 13	3:MG=600000
029	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/04/15 17:31	1.0		
030	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/04/15 17:36	1.0		5:K=380000
031	met08_sn_6010	SAMPLE	268464-003	Filtrate	225705	08/04/15 17:44	1.0		
032	met08_sn_6010	SAMPLE	268464-004	Filtrate	225705	08/04/15 17:49	1.0		
033	met08_sn_6010	MSS	268556-002	Filtrate	225705	08/04/15 17:54	1.0		4:MG=660000
034	met08_sn_6010	SAMPLE	268556-003	Filtrate	225705	08/04/15 18:02	1.0		4:MG=670000
035	met08_sn_6010	SAMPLE	268556-005	Filtrate	225705	08/04/15 18:11	1.0		
036	met08_sn_6010	CCV				08/04/15 18:16	1.0	10	
037	met08_sn_6010	CCB				08/04/15 18:24	1.0		
038	met08_sn_6010	SAMPLE	268556-010	Filtrate	225705	08/04/15 18:29	1.0		
039	met08_sn_6010	?SAMPLE	269558-001		225705	08/04/15 18:34	1.0		
040	met08_sn_6010	X	RINSE			08/04/15 18:43	1.0		
041	met08_sn_6010	BS	QC797841	Soil	225682	08/04/15 18:48	5.0		
042	met08_sn_6010	BSD	QC797842	Soil	225682	08/04/15 18:53	5.0		
043	met08_sn_6010	X	RINSE			08/04/15 18:58	1.0		
044	met08_sn_6010	BLANK	QC798020	Water	225732	08/04/15 19:03	1.0		
045	met08_sn_6010	BS	QC798021	Water	225732	08/04/15 19:08	1.0		
046	met08_sn_6010	BSD	QC798022	Water	225732	08/04/15 19:13	1.0		
047	met08_sn_6010	SAMPLE	268598-003	Water	225732	08/04/15 19:18	1000		
048	met08_sn_6010	CCV				08/04/15 19:23	1.0	10	
049	met08_sn_6010	CCB				08/04/15 19:31	1.0		
050	met08_sn_6010	SAMPLE	268598-004	Water	225732	08/04/15 19:36	1000		
051	met08_sn_6010	MSS	268602-001	Water	225732	08/04/15 19:41	1.0		
052	met08_sn_6010	CCV				08/04/15 19:46	1.0	10	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85311893

Instrument : MET08 Begun : 08/04/15 14:13
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCB				08/04/15 19:54	1.0		

CRT 08/04/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 53.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85311893

Date : 08/04/15 Reference : met08_sn_6010
Sequence : MET08 08/04/15 Analyzed : 08/04/15 14:18

#	Type	Sample ID	Y A
		ICAL STD	3932246
		LOWER LIMIT	1179674
		UPPER LIMIT	4718696
010	ICB		3924187
011	ICSA		3218247
012	ICSAB		3244133
013	SAMPLE	268517-023	3169366
015	BLANK	QC797930	3855454
016	BLANK	QC797931	3908505
017	BS	QC797932	3811417
018	BSD	QC797933	3790355
019	MSS	268557-001	3785849
020	MSS	268557-001	2864702
022	MS	QC797934	2914238
023	CCV		3739314
025	CCB		3895030
026	MSD	QC797935	2917291
027	SER	QC797936	3300017
028	PDS	QC797937	2894907
033	MSS	268556-002	2800471
034	SAMPLE	268556-003	2798200
035	SAMPLE	268556-005	3991118
036	CCV		3696258
037	CCB		3875641
038	SAMPLE	268556-010	3959991
048	CCV		3717167
049	CCB		3850448

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85311893001
Units : ug/L

Date : 04-AUG-2015 14:13
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85311893002	L1	04-AUG-2015 14:18	S27752
L2	met08_sn_6010	85311893003	L2	04-AUG-2015 14:23	S27753
L3	met08_sn_6010	85311893004	L3	04-AUG-2015 14:27	S27754
L4	met08_sn_6010	85311893005	L4	04-AUG-2015 14:32	S27755
L5	met08_sn_6010	85311893006	L5	04-AUG-2015 14:40	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	5.7600	7.6920	7.5803	7.8817		LOR0	0.00000	0.12693		7.2285	1.000	0.995	
Manganese	A	1036.8	1152.3	1107.8	1102.3		LOR0	0.00000	9.07E-4		1099.8	1.000	0.995	
Iron	R	1.7020		1.7049	1.5924	1.5554	LOR0	0.00000	0.64278		1.6387	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	**-27**	100.00	-2	1000.0	-4	10000	0		
Manganese	A	5.0000	-6	100.00	5	1000.0	0	10000	0		
Iron	R	100.00	9			1000.0	10	10000	2	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85311893001 Cal Date : 04-AUG-2015

ICV 85311893007 (04-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5012	ug/L	0	10	
Manganese	A	5000	4942	ug/L	-1	10	
Iron	R	20000	20670	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893009.1 File : met08_sn_6010 Time : 04-AUG-2015 15:05
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.513	ug/L	10	30	
Manganese	A	5.000	4.607	ug/L	-8	30	
Iron	R	100.0	107.9	ug/L	8	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875445	-1.44

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893010.1 File : met08_sn_6010 Time : 04-AUG-2015 15:13
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3924187	-0.20

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893011.1 File : met08_sn_6010 Time : 04-AUG-2015 15:22
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[-3.129]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19320	ug/L	97
Copper	A	20000	20980	ug/L	105
Manganese	A	20000	18810	ug/L	94
Nickel	A	20000	17900	ug/L	89
Vanadium	A	20000	20090	ug/L	100
Aluminum	R	500000	564900	ug/L	113
Calcium	R	500000	531100	ug/L	106
Iron	R	200000	213000	ug/L	106
Magnesium	R	500000	535300	ug/L	107
Titanium	R	20000	21210	ug/L	106

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3218247	-18.16

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893012.1 File : met08_sn_6010 Time : 04-AUG-2015 15:47
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	509.5	ug/L	2	20	
Manganese	A	500.0	473.3	ug/L	-5	20	
Iron	R	200000	204300	ug/L	2		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3244133	-17.50

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893023.1 File : met08_sn_6010 Time : 04-AUG-2015 16:50
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.5838	5000	4813	ug/L	-4	10	
Manganese	A	1099.8	1073.2	5000	4868	ug/L	-3	10	
Iron	R	1.6387	1.6260	20000	20900	ug/L	5	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3739314	-4.91

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893025.1 File : met08_sn_6010 Time : 04-AUG-2015 17:02
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3895030	-0.95

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893036.1 File : met08_sn_6010 Time : 04-AUG-2015 18:16
Cal : 85311893001 Caldate : 04-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	7.2285	7.0665	5000	4485	ug/L	-10	10	
Manganese	A	1099.8	1065.1	5000	4831	ug/L	-3	10	
Iron	R	1.6387	1.6632	20000	21380	ug/L	7	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3696258	-6.00

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85311893037.1 File : met08_sn_6010 Time : 04-AUG-2015 18:24
Cal : 85311893001 Caldate : 04-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3932246	3875641	-1.44

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met09_sn_	ICALBLK				08/05/15 05:38	1.0		
002	met09_sn_	ICAL	L1			08/05/15 05:43	1.0	1	
003	met09_sn_	ICAL	L2			08/05/15 05:48	1.0	2	
004	met09_sn_	ICAL	L3			08/05/15 05:53	1.0	3	
005	met09_sn_	ICAL	L4			08/05/15 05:57	1.0	4	
006	met09_sn_	ICAL	L5			08/05/15 06:04	1.0	5	
007	met09_sn_	ICV				08/05/15 06:11	1.0	6	
008	met09_sn_	XCRI				08/05/15 06:18	1.0	7	
009	met09_sn_	CRI				08/05/15 06:36	1.0	7	
010	met09_sn_	ICB				08/05/15 06:41	1.0		
011	met09_sn_	ICSA				08/05/15 06:46	1.0	8	10:AL=510000
012	met09_sn_	ICSAB				08/05/15 08:02	1.0	9	5:AL=490000
013	met09_sn_	MSS	268662-001	Soil	225788	08/05/15 08:30	100.0		
014	met09_sn_	SAMPLE	268673-001	Miscell.	225788	08/05/15 08:34	100.0		
015	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 08:38	100.0		1:PB=12000
016	met09_sn_	X	RINSE			08/05/15 08:46	1.0		
017	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:51	1.0		6:FE=380000
018	met09_sn_	SAMPLE	268651-001	Soil	225747	08/05/15 08:59	1.0		6:FE=390000
019	met09_sn_	SAMPLE	268673-002	Miscell.	225788	08/05/15 09:07	1000		
020	met09_sn_	CCV				08/05/15 09:12	1.0	10	
021	met09_sn_	CCB				08/05/15 09:19	1.0		
022	met09_sn_	MSS	268613-004	Water	225732	08/05/15 09:29	1.0		
023	met09_sn_	CCV				08/05/15 09:34	1.0	10	
024	met09_sn_	CCB				08/05/15 09:41	1.0		
025	met09_sn_	BLANK	QC798252	TCLP Leachate	225793	08/05/15 09:52	10.0		1:NA=160000
026	met09_sn_	BLANK	QC798257	TCLP Leachate	225793	08/05/15 09:57	10.0		1:NA=150000
027	met09_sn_	BS	QC798253	TCLP Leachate	225793	08/05/15 10:03	1.0		
028	met09_sn_	BSD	QC798254	TCLP Leachate	225793	08/05/15 10:07	1.0		
029	met09_sn_	MSS	268597-001	TCLP Leachate	225793	08/05/15 10:11	10.0		1:NA=150000
030	met09_sn_	MS	QC798255	TCLP Leachate	225793	08/05/15 10:16	10.0		
031	met09_sn_	MSD	QC798256	TCLP Leachate	225793	08/05/15 10:21	10.0		
032	met09_sn_	SAMPLE	268369-001	TCLP Leachate	225793	08/05/15 10:25	10.0		1:NA=150000
033	met09_sn_	SAMPLE	268373-001	TCLP Leachate	225793	08/05/15 10:30	10.0		1:NA=190000
034	met09_sn_	SAMPLE	268655-001	TCLP Leachate	225793	08/05/15 10:36	10.0		1:NA=140000
035	met09_sn_	CCV				08/05/15 10:41	1.0	10	
036	met09_sn_	CCB				08/05/15 10:48	1.0		
037	met09_sn_	SAMPLE	268655-002	TCLP Leachate	225793	08/05/15 10:53	10.0		1:NA=150000
038	met09_sn_	CCV				08/05/15 10:58	1.0	10	
039	met09_sn_	CCB				08/05/15 11:05	1.0		
040	met09_sn_	SER	QC798239	Soil	225788	08/05/15 11:19	500.0		
041	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 11:24	100.0	11 12 13	
042	met09_sn_	SAMPLE	268669-001	Miscell.	225788	08/05/15 11:28	100.0		
043	met09_sn_	SAMPLE	268584-004	Miscell.	225788	08/05/15 11:33	1.0		1:CR=310000
044	met09_sn_	X	RINSE			08/05/15 11:38	1.0		
045	met09_sn_	X	RINSE			08/05/15 11:43	1.0		
046	met09_sn_	X	RINSE			08/05/15 11:48	1.0		
047	met09_sn_	X	RINSE			08/05/15 11:53	1.0		
048	met09_sn_	CCV				08/05/15 11:58	1.0	10	
049	met09_sn_	CCB				08/05/15 12:05	1.0		
050	met09_sn_	BLANK	QC798178	Water	225774	08/05/15 12:12	1.0		
051	met09_sn_	BS	QC798179	Water	225774	08/05/15 12:17	1.0		
052	met09_sn_	BSD	QC798180	Water	225774	08/05/15 12:21	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met09_sn_	MSS	268615-001	Water	225774	08/05/15 12:26	1.0		3:MG=380000
054	met09_sn_	MS	QC798181	Water	225774	08/05/15 12:33	1.0		3:MG=370000
055	met09_sn_	MSD	QC798182	Water	225774	08/05/15 12:41	1.0		3:MG=370000
056	met09_sn_	SAMPLE	268593-001	Water	225774	08/05/15 12:49	1.0		3:MG=130000
057	met09_sn_	SAMPLE	268593-002	Water	225774	08/05/15 12:57	1.0		2:MG=140000
058	met09_sn_	SAMPLE	268616-001	Water	225774	08/05/15 13:05	1.0		3:MG=290000
059	met09_sn_	SAMPLE	268668-001	Water	225774	08/05/15 13:14	1.0		
060	met09_sn_	CCV				08/05/15 13:22	1.0	10	
061	met09_sn_	CCB				08/05/15 13:29	1.0		
062	met09_sn_	BLANK	QC798293	Soil	225807	08/05/15 13:39	1.0		
063	met09_sn_	BS	QC798294	Soil	225807	08/05/15 13:44	5.0		
064	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 13:49	5.0		
065	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 13:53	10.0		
066	met09_sn_	PDS	QC798240	Soil	225788	08/05/15 13:57	1.0	11 12 13	1:FE=1800000
067	met09_sn_	MS	QC798296	Soil	225807	08/05/15 14:05	5.0		1:FE=200000
068	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 14:13	5.0		
069	met09_sn_	SAMPLE	268707-001	Soil	225807	08/05/15 14:21	1.0		3:FE=210000
070	met09_sn_	BS	QC798294	Soil	225807	08/05/15 14:29	5.0		
071	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 14:34	5.0		
072	met09_sn_	CCV				08/05/15 14:38	1.0	10	
073	met09_sn_	CCB				08/05/15 14:45	1.0		
074	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 14:50	10.0		
075	met09_sn_	SAMPLE	268682-003	Soil	225807	08/05/15 14:54	10.0		
076	met09_sn_	SAMPLE	268682-004	Soil	225807	08/05/15 14:58	10.0		
077	met09_sn_	SAMPLE	268682-005	Soil	225807	08/05/15 15:03	10.0		
078	met09_sn_	SAMPLE	268682-006	Soil	225807	08/05/15 15:07	10.0		
079	met09_sn_	SAMPLE	268682-007	Soil	225807	08/05/15 15:11	10.0		
080	met09_sn_	BS	QC798294	Soil	225807	08/05/15 15:16	5.0		
081	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 15:20	5.0		
082	met09_sn_	SAMPLE	268682-008	Soil	225807	08/05/15 15:24	10.0		
083	met09_sn_	SAMPLE	268682-009	Soil	225807	08/05/15 15:28	10.0		
084	met09_sn_	CCV				08/05/15 15:33	1.0	10	
085	met09_sn_	CCB				08/05/15 15:40	1.0		
086	met09_sn_	BS	QC797932	Filtrate	225705	08/05/15 15:45	1.0		
087	met09_sn_	BSD	QC797933	Filtrate	225705	08/05/15 15:49	1.0		
088	met09_sn_	X	RINSE			08/05/15 15:53	1.0		
089	met09_sn_	SAMPLE	268682-010	Soil	225807	08/05/15 15:58	10.0		
090	met09_sn_	SAMPLE	268682-011	Soil	225807	08/05/15 16:03	10.0		
091	met09_sn_	SAMPLE	268682-012	Soil	225807	08/05/15 16:07	10.0		
092	met09_sn_	BS	QC798294	Soil	225807	08/05/15 16:11	5.0		
093	met09_sn_	BSD	QC798295	Soil	225807	08/05/15 16:15	5.0		
094	met09_sn_	CCV				08/05/15 16:19	1.0	10	
095	met09_sn_	CCB				08/05/15 16:26	1.0		
096	met09_sn_	SAMPLE	268597-002	TCLP Leachate	225793	08/05/15 16:32	10.0		1:NA=190000
097	met09_sn_	X	RINSE			08/05/15 16:37	1.0		
098	met09_sn_	MSD	QC798297	Soil	225807	08/05/15 16:42	5.0		1:FE=200000
099	met09_sn_	MS	QC798296	Soil	225807	08/05/15 16:49	5.0		
100	met09_sn_	SAMPLE	268682-013	Soil	225807	08/05/15 16:57	10.0		
101	met09_sn_	SAMPLE	268682-014	Soil	225807	08/05/15 17:01	10.0		
102	met09_sn_	SAMPLE	268682-015	Soil	225807	08/05/15 17:06	10.0		
103	met09_sn_	SAMPLE	268682-016	Soil	225807	08/05/15 17:10	10.0		
104	met09_sn_	SAMPLE	268682-017	Soil	225807	08/05/15 17:14	1.0		2:FE=250000

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
105	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:22	1.0		1:FE=170000
106	met09_sn_	CCV				08/05/15 17:30	1.0	10	
107	met09_sn_	CCB				08/05/15 17:37	1.0		
108	met09_sn_	SAMPLE	268682-018	Soil	225807	08/05/15 17:42	1.0		1:FE=160000
109	met09_sn_	CCV				08/05/15 17:50	1.0	10	
110	met09_sn_	CCB				08/05/15 17:57	1.0		
111	met09_sn_	SAMPLE	268608-001	Soil	225747	08/05/15 18:07	1.0		4:FE=380000
112	met09_sn_	SAMPLE	268608-002	Soil	225747	08/05/15 18:15	1.0		3:FE=410000
113	met09_sn_	SAMPLE	268608-003	Soil	225747	08/05/15 18:22	1.0		3:FE=360000
114	met09_sn_	SAMPLE	268608-004	Soil	225747	08/05/15 18:30	1.0		3:FE=460000
115	met09_sn_	SAMPLE	268682-001	Soil	225807	08/05/15 18:40	1.0		1:FE=190000
116	met09_sn_	MSS	268682-002	Soil	225807	08/05/15 18:48	10.0		
117	met09_sn_	CCV				08/05/15 19:02	1.0	10	
118	met09_sn_	CCB				08/05/15 19:09	1.0		
119	met09_sn_	SAMPLE	268464-002	Water	225649	08/05/15 19:15	100.0		
120	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 19:26	1.0		3:MG=610000
121	met09_sn_	X	RINSE			08/05/15 19:33	1.0		
122	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 19:38	5.0		
123	met09_sn_	X	RINSE			08/05/15 19:46	1.0		
124	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 19:51	1.0	11 12 13	3:MG=600000
125	met09_sn_	X	RINSE			08/05/15 19:59	1.0		
126	met09_sn_	MSS	268556-002	Filtrate	225705	08/05/15 20:04	100.0		
127	met09_sn_	X	RINSE			08/05/15 20:10	1.0		
128	met09_sn_	SER	QC798414	Filtrate	225705	08/05/15 20:15	500.0		
129	met09_sn_	X	RINSE			08/05/15 20:20	1.0		
130	met09_sn_	CCV				08/05/15 20:25	1.0	10	
131	met09_sn_	CCB				08/05/15 20:32	1.0		
132	met09_sn_	PDS	QC798415	Filtrate	225705	08/05/15 20:37	100.0	11 12 13	
133	met09_sn_	X	RINSE			08/05/15 20:41	1.0		
134	met09_sn_	SAMPLE	268464-003	Water	225649	08/05/15 20:47	1.0		
135	met09_sn_	X	RINSE			08/05/15 20:52	1.0		
136	met09_sn_	SAMPLE	268464-004	Water	225649	08/05/15 20:57	1.0		
137	met09_sn_	X	RINSE			08/05/15 21:02	1.0		
138	met09_sn_	MSS	268460-003	Filtrate	225672	08/05/15 21:07	1.0		1:NA=380000
139	met09_sn_	X	RINSE			08/05/15 21:11	1.0		
140	met09_sn_	X	RINSE			08/05/15 21:17	1.0		
141	met09_sn_	X	QC798374	Soil	225826	08/05/15 21:22	1.0		5:AL=440000
142	met09_sn_	CCV				08/05/15 21:30	1.0	10	
143	met09_sn_	CCB				08/05/15 21:36	1.0		
144	met09_sn_	X	QC798375	Soil	225826	08/05/15 21:42	5.0		4:AL=680000
145	met09_sn_	X	QC798376	Soil	225826	08/05/15 21:50	5.0		4:AL=680000
146	met09_sn_	X	268621-002	Soil	225826	08/05/15 21:57	1.0		4:AL=610000
147	met09_sn_	X	QC798377	Soil	225826	08/05/15 22:05	5.0		2:AL=420000
148	met09_sn_	X	QC798378	Soil	225826	08/05/15 22:13	5.0		1:AL=610000
149	met09_sn_	X	268621-004	Soil	225826	08/05/15 22:21	1.0		3:FE=400000
150	met09_sn_	X	268621-005	Soil	225826	08/05/15 22:29	1.0		2:FE=430000
151	met09_sn_	X	268621-006	Soil	225826	08/05/15 22:37	1.0		
152	met09_sn_	X	268621-007	Soil	225826	08/05/15 22:42	1.0		
153	met09_sn_	X	268621-008	Soil	225826	08/05/15 22:47	1.0		
154	met09_sn_	CCV				08/05/15 22:52	1.0	10	
155	met09_sn_	CCB				08/05/15 22:59	1.0		
156	met09_sn_	X	268621-009	Soil	225826	08/05/15 23:05	1.0		

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 95312818

Instrument : MET09 Begun : 08/05/15 05:38
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
157	met09_sn_	X	268621-010	Soil	225826	08/05/15 23:10	1.0		1:FE=100000
158	met09_sn_	X	268621-011	Soil	225826	08/05/15 23:18	1.0		
159	met09_sn_	X	268621-012	Soil	225826	08/05/15 23:25	1.0		
160	met09_sn_	X	268621-013	Soil	225826	08/05/15 23:31	1.0		
161	met09_sn_	X	268621-014	Soil	225826	08/05/15 23:37	1.0		
162	met09_sn_	X	268621-015	Soil	225826	08/05/15 23:42	1.0		
163	met09_sn_	X	268684-001	Soil	225826	08/05/15 23:47	1.0		
164	met09_sn_	X	268685-001	Soil	225826	08/05/15 23:53	1.0		
165	met09_sn_	X	RINSE			08/05/15 23:58	1.0		
166	met09_sn_	CCV				08/06/15 00:03	1.0	10	
167	met09_sn_	CCB				08/06/15 00:10	1.0		
168	met09_sn_	?SAMPLE	268632-001		225747	08/06/15 00:15	1.0		
169	met09_sn_	SAMPLE	268642-001	Miscell.	225747	08/06/15 00:23	1.0		4:CA=1800000
170	met09_sn_	SAMPLE	268645-001	Soil	225747	08/06/15 00:31	1.0		5:FE=340000
171	met09_sn_	CCV				08/06/15 00:39	1.0	10	
172	met09_sn_	CCB				08/06/15 00:46	1.0		

NCD 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 49.

CRT 08/05/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 50 through 110.

NCD 08/06/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 111 through 172.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 95312818

Date : 08/05/15 Reference : met09_sn_
Sequence : MET09 08/05/15 Analyzed : 08/05/15 05:43

#	Type	Sample ID	Y A
		ICAL STD	3557812
		LOWER LIMIT	1067344
		UPPER LIMIT	4269374
010	ICB		3565668
011	ICSA		3034797
012	ICSAB		3025923
020	CCV		3461723
021	CCB		3657631
022	MSS	268613-004	3629724
023	CCV		3450916
024	CCB		3673839
084	CCV		3251276
085	CCB		3442233
086	BS	QC797932	3365220
087	BSD	QC797933	3345006
094	CCV		3223624
095	CCB		3417094
117	CCV		3186226
118	CCB		3365340
120	MSS	268556-002	2323413
122	SER	QC798414	2840598
124	PDS	QC798415	2307777
126	MSS	268556-002	3197452
128	SER	QC798414	3197825
130	CCV		3139318
131	CCB		3302005
132	PDS	QC798415	3193222
138	MSS	268460-003	3092471
142	CCV		3173923
143	CCB		3302427

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 METALS Filtrate: EPA 6010C

Inst : MET09
Calnum : 95312818001
Units : ug/L

Date : 05-AUG-2015 05:38
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met09_sn_	95312818002	L1	05-AUG-2015 05:43	S27752
L2	met09_sn_	95312818003	L2	05-AUG-2015 05:48	S27753
L3	met09_sn_	95312818004	L3	05-AUG-2015 05:53	S27754
L4	met09_sn_	95312818005	L4	05-AUG-2015 05:57	S27755
L5	met09_sn_	95312818006	L5	05-AUG-2015 06:04	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	3.1800	3.8100	3.8194	3.8341		LOR0	0.00000	0.26083		3.6609	1.000	0.995	
Manganese	A	713.02	726.37	734.11	694.95		LOR0	0.00000	0.00144		717.11	1.000	0.995	
Iron	R	11.104		10.934	10.825	10.742	LOR0	0.00000	0.09308		10.901	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	-17	100.00	-1	1000.0	0	10000	0		
Manganese	A	5.0000	3	100.00	4	1000.0	6	10000	0		
Iron	R	100.00	3			1000.0	2	10000	1	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09
Calnum : 95312818001 Cal Date : 05-AUG-2015

ICV 95312818007 (05-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	4898	ug/L	-2	10	
Manganese	A	5000	5040	ug/L	1	10	
Iron	R	20000	19930	ug/L	0	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818009.1 File : met09_sn_ Time : 05-AUG-2015 06:36
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.815	ug/L	16	30	
Manganese	A	5.000	5.441	ug/L	9	30	
Iron	R	100.0	103.6	ug/L	4	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3584548	0.75

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818010.1 File : met09_sn_ Time : 05-AUG-2015 06:41
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3565668	0.22

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818011.1 File : met09_sn_ Time : 05-AUG-2015 06:46
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[2.754]	5.000	ug/L	

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	18930	ug/L	95
Copper	A	20000	21900	ug/L	110
Manganese	A	20000	18430	ug/L	92
Nickel	A	20000	18090	ug/L	90
Vanadium	A	20000	19620	ug/L	98
Aluminum	R	500000	513000	ug/L	103
Calcium	R	500000	486800	ug/L	97
Iron	R	200000	189200	ug/L	95
Magnesium	R	500000	504700	ug/L	101
Titanium	R	20000	20400	ug/L	102

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3034797	-14.70

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818012.1 File : met09_sn_ Time : 05-AUG-2015 08:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	541.3	ug/L	8	20	
Manganese	A	500.0	520.7	ug/L	4	20	
Iron	R	200000	179300	ug/L	-10		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3025923	-14.95

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818117.2 File : met09_sn_ Time : 05-AUG-2015 19:02
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6662	5000	4781	ug/L	-4	10	
Manganese	A	717.11	702.47	5000	5051	ug/L	1	10	
Iron	R	10.901	11.096	20000	20660	ug/L	3	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3186226	-10.44

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818118.2 File : met09_sn_ Time : 05-AUG-2015 19:09
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3365340	-5.41

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818130.1 File : met09_sn_ Time : 05-AUG-2015 20:25
Cal : 95312818001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	3.6609	3.6162	5000	4716	ug/L	-6	10	
Manganese	A	717.11	707.18	5000	5085	ug/L	2	10	
Iron	R	10.901	11.123	20000	20710	ug/L	4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3139318	-11.76

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET09 IDF : 1.0
Seqnum : 95312818131.1 File : met09_sn_ Time : 05-AUG-2015 20:32
Cal : 95312818001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	4.000	ug/L	
Iron	R	ND	100.0	80.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3557812	3302005	-7.19

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85313027

Instrument : MET08 Begun : 08/05/15 09:07
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
001	met08_sn_6010	ICALBLK				08/05/15 09:07	1.0		
002	met08_sn_6010	ICAL	L1			08/05/15 09:12	1.0	1	
003	met08_sn_6010	ICAL	L2			08/05/15 09:17	1.0	2	
004	met08_sn_6010	ICAL	L3			08/05/15 09:21	1.0	3	
005	met08_sn_6010	ICAL	L4			08/05/15 09:26	1.0	4	
006	met08_sn_6010	ICAL	L5			08/05/15 09:33	1.0	5	
007	met08_sn_6010	ICV				08/05/15 09:40	1.0	6	
008	met08_sn_6010	XCRI				08/05/15 09:45	1.0	7	
009	met08_sn_6010	CRI				08/05/15 09:57	1.0	7	
010	met08_sn_6010	ICB				08/05/15 10:02	1.0		
011	met08_sn_6010	ICSA				08/05/15 10:07	1.0	8	10:MG=530000
012	met08_sn_6010	ICSAB				08/05/15 10:20	1.0	9	5:MG=500000
013	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/05/15 10:47	1.0		
014	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/05/15 10:52	1.0		5:K=400000
015	met08_sn_6010	X	RINSE			08/05/15 11:00	1.0		
016	met08_sn_6010	X	RINSE			08/05/15 11:05	1.0		
017	met08_sn_6010	X	RINSE			08/05/15 11:10	1.0		
018	met08_sn_6010	SAMPLE	268558-001	Filtrate	225705	08/05/15 11:15	1.0		4:NA=1700000
019	met08_sn_6010	CCV				08/05/15 11:24	1.0	10	
020	met08_sn_6010	CCB				08/05/15 11:29	1.0		
021	met08_sn_6010	SER	QC798298	Water	225732	08/05/15 11:34	5.0		
022	met08_sn_6010	PDS	QC798299	Water	225732	08/05/15 11:39	1.0	11	
023	met08_sn_6010	CCV				08/05/15 11:43	1.0	10	
024	met08_sn_6010	CCV				08/05/15 11:51	1.0	10	
025	met08_sn_6010	CCB				08/05/15 11:57	1.0		
026	met08_sn_6010	SAMPLE	268464-001	Filtrate	225705	08/05/15 12:02	1.0		
027	met08_sn_6010	SAMPLE	268464-002	Filtrate	225705	08/05/15 12:07	1.0		5:K=380000
028	met08_sn_6010	X	RINSE			08/05/15 12:14	1.0		
029	met08_sn_6010	X	RINSE			08/05/15 12:19	1.0		
030	met08_sn_6010	X	RINSE			08/05/15 12:24	1.0		
031	met08_sn_6010	SAMPLE	268558-001	Filtrate	225705	08/05/15 12:29	1.0		4:NA=1800000
032	met08_sn_6010	X	RINSE			08/05/15 12:38	1.0		
033	met08_sn_6010	SER	QC798298	Water	225732	08/05/15 12:43	5.0		
034	met08_sn_6010	PDS	QC798299	Water	225732	08/05/15 12:48	1.0	11 12 13	
035	met08_sn_6010	X	RINSE			08/05/15 12:52	1.0		
036	met08_sn_6010	CCV				08/05/15 12:57	1.0	10	
037	met08_sn_6010	CCB				08/05/15 13:05	1.0		
038	met08_sn_6010	BLANK	QC797984	TCLP Leachate	225722	08/05/15 13:10	10.0		1:NA=150000
039	met08_sn_6010	BS	QC797985	TCLP Leachate	225722	08/05/15 13:15	1.0		
040	met08_sn_6010	BSD	QC797986	TCLP Leachate	225722	08/05/15 13:19	1.0		
041	met08_sn_6010	MSS	268633-001	TCLP Leachate	225722	08/05/15 13:24	10.0		1:NA=150000
042	met08_sn_6010	MS	QC797987	TCLP Leachate	225722	08/05/15 13:29	10.0		
043	met08_sn_6010	MSD	QC797988	TCLP Leachate	225722	08/05/15 13:34	10.0		
044	met08_sn_6010	SAMPLE	268550-001	TCLP Leachate	225722	08/05/15 13:39	10.0		
045	met08_sn_6010	SAMPLE	268761-001	TCLP Leachate	225722	08/05/15 13:47	10.0		1:NA=160000
046	met08_sn_6010	SAMPLE	268761-002	TCLP Leachate	225722	08/05/15 13:52	10.0		1:NA=140000
047	met08_sn_6010	SAMPLE	268761-003	TCLP Leachate	225722	08/05/15 13:58	10.0		1:NA=140000
048	met08_sn_6010	CCV				08/05/15 14:03	1.0	10	
049	met08_sn_6010	CCB				08/05/15 14:10	1.0		
050	met08_sn_6010	X	RINSE			08/05/15 14:15	1.0		
051	met08_sn_6010	X	RINSE			08/05/15 14:20	1.0		
052	met08_sn_6010	CCV				08/05/15 14:25	1.0	10	

CURTIS & TOMPKINS SEQUENCE SUMMARY FOR 85313027

Instrument : MET08 Begun : 08/05/15 09:07
Method : EPA 6010C SOP Version : icp metals_rv17

#	File	Type	Sample ID	Matrix	Batch	Analyzed	IDF	Stds Used	
053	met08_sn_6010	CCB				08/05/15 14:33	1.0		
054	met08_sn_6010	BLANK	QC797984	TCLP Leachate	225722	08/05/15 14:38	10.0		1:NA=150000
055	met08_sn_6010	BS	QC797985	TCLP Leachate	225722	08/05/15 14:43	1.0		
056	met08_sn_6010	BSD	QC797986	TCLP Leachate	225722	08/05/15 14:48	1.0		
057	met08_sn_6010	MSS	268633-001	TCLP Leachate	225722	08/05/15 14:52	10.0		1:NA=170000
058	met08_sn_6010	MS	QC797987	TCLP Leachate	225722	08/05/15 14:57	10.0		
059	met08_sn_6010	MSD	QC797988	TCLP Leachate	225722	08/05/15 15:02	10.0		
060	met08_sn_6010	SAMPLE	268550-001	TCLP Leachate	225722	08/05/15 15:07	10.0		
061	met08_sn_6010	SAMPLE	268761-001	TCLP Leachate	225722	08/05/15 15:16	10.0		1:NA=150000
062	met08_sn_6010	SAMPLE	268761-002	TCLP Leachate	225722	08/05/15 15:21	10.0		1:NA=150000
063	met08_sn_6010	SAMPLE	268761-003	TCLP Leachate	225722	08/05/15 15:26	10.0		1:NA=150000
064	met08_sn_6010	CCV				08/05/15 15:31	1.0	10	
065	met08_sn_6010	CCB				08/05/15 15:39	1.0		

NCD 08/05/15 : ccv has empty. Can't report anything before 24.

NCD 08/06/15 : I verified that the vials loaded on the instrument matched the sequence data entry, for runs 1 through 65.

Standards used: 1=S27752 2=S27753 3=S27754 4=S27755 5=S27758 6=S27757 7=S27759 8=S27611 9=S27612 10=S27756 11=S26229 12=S26230 13=S27470

CURTIS & TOMPKINS INTERNAL STANDARD SUMMARY FOR SEQUENCE 85313027

Date : 08/05/15 Reference : met08_sn_6010
Sequence : MET08 08/05/15 Analyzed : 08/05/15 09:12

#	Type	Sample ID	Y	A
		ICAL STD	3537632	
		LOWER LIMIT	1061290	
		UPPER LIMIT	4245159	
010	ICB		3594862	
011	ICSA		2950954	
012	ICSAB		2949175	
018	SAMPLE	268558-001	2864079	
019	CCV		11984379	*
020	CCB		3529663	
023	CCV		12110058	*
024	CCV		3343458	
025	CCB		3450974	
031	SAMPLE	268558-001	2878663	
036	CCV		3280722	
037	CCB		3240959	

CURTIS & TOMPKINS INITIAL CALIBRATION FOR 268558 METALS Filtrate: EPA 6010C

Inst : MET08
Calnum : 85313027001
Units : ug/L

Date : 05-AUG-2015 09:07
X Axis : R

Level	File	Seqnum	Sample ID	Analyzed	Stds
L1	met08_sn_6010	85313027002	L1	05-AUG-2015 09:12	S27752
L2	met08_sn_6010	85313027003	L2	05-AUG-2015 09:17	S27753
L3	met08_sn_6010	85313027004	L3	05-AUG-2015 09:21	S27754
L4	met08_sn_6010	85313027005	L4	05-AUG-2015 09:26	S27755
L5	met08_sn_6010	85313027006	L5	05-AUG-2015 09:33	S27758

Analyte	Ch	L1	L2	L3	L4	L5	Type	a0	a1	a2	Avg	r^2 %RSD	MnR^2	Flg
Arsenic	A	11.180	14.019	13.575	14.277		LOR0	0.00000	0.07008		13.263	1.000	0.995	
Manganese	A	1197.7	1425.7	1350.2	1331.8		LOR0	0.00000	7.51E-4		1326.3	1.000	0.995	
Iron	R	1.6850		1.9949	1.9071	1.9224	LOR0	0.00000	0.52021		1.8774	1.000	0.995	

Spiked Amounts / Drifts	Ch	L1	%D	L2	%D	L3	%D	L4	%D	L5	%D
Arsenic	A	5.0000	**-22**	100.00	-2	1000.0	-5	10000	0		
Manganese	A	5.0000	-10	100.00	7	1000.0	1	10000	0		
Iron	R	100.00	-12			1000.0	4	10000	-1	100000	0

Instrument amount = a0 + response * a1 + response^2 * a2; LOR0=Linear regression forced thru origin, including 0,0 point

CURTIS & TOMPKINS 2ND SOURCE CALIBRATION SUMMARY FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08
Calnum : 85313027001 Cal Date : 05-AUG-2015

ICV 85313027007 (05-AUG-2015) stds: S27757

Analyte	Ch	Spiked	Quant	Units	%D	Max	Flags
Arsenic	A	5000	5131	ug/L	3	10	
Manganese	A	5000	4986	ug/L	0	10	
Iron	R	20000	20590	ug/L	3	10	

CURTIS & TOMPKINS LOW-LEVEL PERFORMANCE VERIFICATION STANDARD FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027009.1 File : met08_sn_6010 Time : 05-AUG-2015 09:57
Cal : 85313027001 Caldate : 05-AUG-2015
Standards: S27759

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	5.000	5.959	ug/L	19	30	
Manganese	A	5.000	5.076	ug/L	2	30	
Iron	R	100.0	102.8	ug/L	3	30	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	3590602	1.50

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027010.1 File : met08_sn_6010 Time : 05-AUG-2015 10:02
Cal : 85313027001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	3594862	1.62

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD A FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027011.1 File : met08_sn_6010 Time : 05-AUG-2015 10:07
Cal : 85313027001 Caldate : 05-AUG-2015
Standards: S27611

Analyte	Ch	Quant	IQL	Units	Flags
Arsenic	A	[4.883]	5.000	ug/L	!a+

Interferent	Ch	Spiked	Quant	Units	%Rec
Chromium	A	20000	19970	ug/L	100
Copper	A	20000	20920	ug/L	105
Manganese	A	20000	19050	ug/L	95
Nickel	A	20000	18260	ug/L	91
Vanadium	A	20000	20640	ug/L	103
Aluminum	R	500000	521700	ug/L	104
Calcium	R	500000	515200	ug/L	103
Iron	R	200000	203200	ug/L	102
Magnesium	R	500000	526700	ug/L	105
Titanium	R	20000	20810	ug/L	104

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	2950954	-16.58

!=warning +=high bias a=ICSA

CURTIS & TOMPKINS INTERFERENCE CHECK STANDARD AB FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027012.1 File : met08_sn_6010 Time : 05-AUG-2015 10:20
Cal : 85313027001 Caldate : 05-AUG-2015
Standards: S27612

Analyte	Ch	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	500.0	517.3	ug/L	3	20	
Manganese	A	500.0	476.6	ug/L	-5	20	
Iron	R	200000	192700	ug/L	-4		

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	2949175	-16.63

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027024.1 File : met08_sn_6010 Time : 05-AUG-2015 11:51
Cal : 85313027001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	13.263	13.811	5000	4839	ug/L	-3	10	
Manganese	A	1326.3	1302.4	5000	4889	ug/L	-2	10	
Iron	R	1.8774	2.0088	20000	20900	ug/L	4	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	3343458	-5.49

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027025.1 File : met08_sn_6010 Time : 05-AUG-2015 11:57
Cal : 85313027001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	3450974	-2.45

CURTIS & TOMPKINS CONTINUING CALIBRATION FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027036.1 File : met08_sn_6010 Time : 05-AUG-2015 12:57
Cal : 85313027001 Caldate : 05-AUG-2015
Standards: S27756

Analyte	Ch	Avg RF/CF	RF/CF	Spiked	Quant	Units	%D	Max %D	Flags
Arsenic	A	13.263	13.394	5000	4693	ug/L	-6	10	
Manganese	A	1326.3	1297.3	5000	4870	ug/L	-3	10	
Iron	R	1.8774	1.9535	20000	20320	ug/L	2	10	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	3280722	-7.26

CURTIS & TOMPKINS INSTRUMENT BLANK FOR 268558 METALS Filtrate
EPA 6010C

Inst : MET08 IDF : 1.0
Seqnum : 85313027037.1 File : met08_sn_6010 Time : 05-AUG-2015 13:05
Cal : 85313027001 Caldate : 05-AUG-2015

Analyte	Ch	Quant	IQL	LOD	Units	Flags
Arsenic	A	ND	5.000	4.000	ug/L	
Manganese	A	ND	5.000	2.500	ug/L	
Iron	R	ND	100.0	50.00	ug/L	

ISTD (ICAL 002)	Ch	ICAL Abund	Abund	%Drift
Yttrium	A	3537632	3240959	-8.39

SAMPLE PREPARATION SUMMARY

Batch # : 225705 Analysis : ICP-200
Started By : RFC Prep Date : 31-JUL-2015 17:11 Finished By : RFC
Method : METHOD Units : mL
Spike #1 ID : S27307 Spike #2 ID : S27308 Spike #3 ID : S27470

Sample	Stype	Matrix	Initial	Final	Clean DF	Prep DF	pH	Sp 1 Vol	Sp 2 Vol	Sp 3 Vol	Clean Method	Analysis	Comments
268464-001		Filtrate	50	50	1	1.0						200.7	
268464-002		Filtrate	50	50	1	1.0						200.7	
268464-003		Filtrate	50	50	1	1.0						200.7	
268464-004		Filtrate	50	50	1	1.0						200.7	
268464-005		Filtrate	50	50	1	1.0						200.7	Prepped 07-AUG-2015 10:20
268556-002		Filtrate	50	50	1	1.0						6010	
268556-003		Filtrate	50	50	1	1.0						6010	
268556-005		Filtrate	50	50	1	1.0						6010	
268556-010		Filtrate	50	50	1	1.0						6010	
268557-001		Filtrate	50	50	1	1.0						6010	
268558-001		Filtrate	50	50	1	1.0						6010	
QC797930	BLANK	Filtrate	50	50	1	1.0							7/27/15 QC797298
QC797931	BLANK	Filtrate	50	50	1	1.0							7/29/15 QC797931
QC797932	BS	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797933	BSD	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797934	MS	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797935	MSD	Filtrate	50	50	1	1.0		.5	.5	.5			
QC797936	SER	Filtrate	50	50	1	1.0							
QC797937	PDS	Filtrate	50	50	1	1.0							
QC798414	SER	Filtrate	50	50	1	1.0							
QC798415	PDS	Filtrate	50	50	1	1.0							

Analyst: NCD Date: 08/03/15 Reviewer: JDB Date: 08/06/15

Water Digestion for ICP Curtis & Tompkins, Ltd.

LIMS Batch #: 225705
Digested by: RFC
Date Digested: 7/31/15

Digestion Method
☐ EPA 3010a for ICP
☐ EPA 200.7
☑ FILTRATE

BK3689
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Lvl.	Sample #	Container ID	Volume Sample(mL)	Final Volume (mL)	Filtered? (y/n)	ID ✓	Comments
	BLANK 7/27/15		☑ 50 ☐	☑ 50 ☐	N	✓	QC797298 & QC797930
	BS		☑ 50 ☐	☑ 50 ☐		✓	-932
	BSD		☑ 50 ☐	☑ 50 ☐		✓	-933
	MS		☑ 50 ☐	☑ 50 ☐		✓	-934
5	MSD		☑ 50 ☐	☑ 50 ☐		✓	-935
II	268464-001	K	☑ 50 ☐	☑ 50 ☐		✓	
	-002		☑ 50 ☐	☑ 50 ☐		✓	
	-003		☑ 50 ☐	☑ 50 ☐		✓	
	-004		☑ 50 ☐	☑ 50 ☐		✓	
III 10	268556-002	D	☑ 50 ☐	☑ 50 ☐		✓	
	-003		☑ 50 ☐	☑ 50 ☐		✓	
	-005		☑ 50 ☐	☑ 50 ☐		✓	
	-010		☑ 50 ☐	☑ 50 ☐		✓	
IV	268557-001	L	☑ 50 ☐	☑ 50 ☐		✓	MSS
III 15	268558-001	F	☑ 50 ☐	☑ 50 ☐		✓	
	BLANK 7/29/15		☑ 50 ☐	☑ 50 ☐		✓	QC797659 QC797931
II	268464-005	K	☑ 50 ☐	☑ 50 ☐	N	✓	
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
20			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			
			☐ 50 ☐	☐ 50 ☐			

	Reagent ID or LIMS #	Initials / Date
Digestion tubes, lot #	ACCUFLOW	RFC 7/31/15
0.50 mL of spike solution (Std1) was added to all spikes	S27307	
0.50 mL of spike solution (Std2) was added to all spikes	S27308	
0.50 mL of spike solution (Std3) was added to all spikes	S27470	
Digestion Temperature (°C), Block and Probe Location		
Digestion begun at (time)		
☑ Conc. HNO3 or ☐ 1:1 HNO3	JTB104117	
☑ Conc. HCl or ☐ 1:1 HCl	JTB97264	
digestion ended at (time)		
☐ filtered thru' Whatman # 541		
Relinquished to ICP group	ICP	

7/31/15
Prep Chemist / Date

Continued from page Ø.
Continued on page _____.

Reviewed Online / See LIMS

Dilutions for 268558 METALS Filtrate
Curtis & Tompkins Laboratories

Type	Sample ID	IDFs
SER	QC797936	5X
SER	QC798414	5X

Appendix C2. Data Validation Reports

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Versar, Inc.
100 Hartsfield Centre Pkwy, Suite 610
Atlanta, GA 30354-1390
ATTN: Mr. Michael Profit

August 18, 2015

SUBJECT: Mare Island, BGMP, Data Validation

Dear Mr. Profit,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on August 12, 2015. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #34833:

SDG #	Fraction
268556, 268557, 268558	Volatiles, Dissolved Metals

The data validation was performed under EPA Level III & IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California, July 2014, and Addendum 1, August 2014
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.0, July 2013
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory National Functional Guidelines for Inorganic Superfund Data Review, January 2010
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink
Project Manager/Chemist

873 pages-EM

Attachment 1

EDD/NIRIS

LDC #34833 (Versar, Atlanta, GA / Mare Island, BGMP)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (8260C)		Diss.As Fe,Mn (6010C)																																	
Matrix	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	268556	08/12/15	09/02/15	10	0	4	0																																
B	268557	08/12/15	09/02/15	1	0	1	0																																
C	268558	08/12/15	09/02/15	1	0	1	0																																
Total	T/CR			12	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Versar\Mare Island\34833ST_BGMP.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Mare Island, BGMP

LDC Report Date: August 17, 2015

Parameters: Volatiles

Validation Level: Level III

Laboratory: Curtis & Tompkins, LTD.

Sample Delivery Group (SDG): 268556

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DIC85W04-072815	268556-001	Water	07/28/15
DIC85W06-072815	268556-002	Water	07/28/15
DIC85W06-072815X	268556-003	Water	07/28/15
DIC85W03-072915	268556-004	Water	07/29/15
ER-072815	268556-005	Water	07/29/15
DIC85W02RA-072915	268556-006	Water	07/29/15
DIC85W01R-072915	268556-007	Water	07/29/15
ER-072915	268556-008	Water	07/29/15
TB-072815	268556-009	Water	07/28/15
SB-072915	268556-010	Water	07/29/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California (July 2014) and Addendum 1 (August 2014), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
DIC85W06-072815	All TCL compounds except Freon 12 Bromomethane 2,2-Dichloropropane n-Butylbenzene 1,2-Dibromo-3-chloropropane Naphthalene	A headspace of >1 ml was apparent in the sample containers.	There should be no headspace in the sample containers.	J (all detects) UJ (all non-detects)	A
ER-072815	Freon 113 Carbon disulfide	A headspace of >1 ml was apparent in the sample containers.	There should be no headspace in the sample containers.	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
06/25/15	Freon 12	27	All samples in SDG 268556	UJ (all non-detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
06/25/15	Vinyl acetate	30	DIC85W04-072815 DIC85W06-072815X ER-072815 ER-072915 SB-072915	UJ (all non-detects)	A

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
07/30/15 (hgu008_ccv)	Vinyl acetate	21	DIC85W04-072815 DIC85W06-072815X ER-072815 ER-072915 SB-072915	UJ (all non-detects)	A
07/31/15	Freon 12 Bromomethane	41 28	DIC85W06-072815 DIC85W03-072915 DIC85W01R-072915 TB-072815	UJ (all non-detects) UJ (all non-detects)	A
08/06/15	Freon 12 2,2-Dichloropropane	44 33	DIC85W02RA-072915	UJ (all non-detects) UJ (all non-detects)	A
07/30/15 (kqu06_ccv)	Vinyl acetate	26	DIC85W06-072815 DIC85W03-072915 DIC85W02RA-072915 DIC85W01R-072915 TB-072815	UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample TB-072815 was identified as a trip blank. No contaminants were found.

Samples ER-072815 and ER-072915 were identified as equipment rinsates. No contaminants were found with the following exceptions:

contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples
ER-072815	07/29/15	Carbon disulfide	0.2 ug/L	DIC85W04-072815 DIC85W06-072815 DIC85W06-072815X

Sample SB-072915 was identified as a source blank. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples
SB-072915	07/29/15	2-Butanone Toluene m,p-Xylenes	2.4 ug/L 0.2 ug/L 0.1 ug/L	ER-072815 ER-072915

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks with the following exceptions:

Sample	Compound	Reported Concentration	Modified Final Concentration
DIC85W06-072815	Carbon disulfide	0.7 ug/L	0.7U ug/L

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Affected Compound	Flag	A or P
DIC85W04-072815	1,2-Dichloroethane-d4	122 (70-120)	All TCL compounds except Freon 113 Carbon disulfide	J (all detects)	A
DIC85W06-072815	1,2-Dichloroethane-d4	131 (70-120)	Freon 12 Bromomethane 2,2-Dichloropropane n-Butylbenzene 1,2-Dibromo-3-chloropropane Naphthalene	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A

Sample	Surrogate	%R (Limits)	Affected Compound	Flag	A or P
DIC85W06-072815X	1,2-Dichloroethane-d4	125 (70-120)	All TCL compounds except Freon 113 Carbon disulfide 1,1-Dichloropropene Carbon tetrachloride 1,2-Dichloroethane Benzene Trichloroethene 1,2-Dichloropropane Bromodichloromethane Dibromomethane 4-Methyl-2-pentanone cis-1,3-Dichloropropene	J (all detects)	A
DIC85W03-072915	1,2-Dichloroethane-d4	133 (70-120)	Freon 12 Bromomethane 2,2-Dichloropropane 1,2-Dibromo-3-chloropropane Naphthalene	NA	-
ER-072815	1,2-Dichloroethane-d4	125 (70-120)	All TCL compounds except Freon 113 Carbon disulfide	J (all detects)	A
DIC85W02RA-072915	1,2-Dichloroethane-d4	133 (70-120)	Freon 12 Bromomethane 2,2-Dichloropropane 1,2-Dibromo-3-chloropropane Naphthalene	NA	-
DIC85W01R-072915	1,2-Dichloroethane-d4	139 (70-120)	Freon 12 Bromomethane 2,2-Dichloropropane 1,2-Dibromo-3-chloropropane Naphthalene	NA	-
ER-072915	Dibromofluoromethane 1,2-Dichloroethane-d4	117 (85-115) 126 (70-120)	All TCL compounds	NA	-
TB-072815	Dibromofluoromethane Toluene-d8	129 (70-120) 139 (85-120)	All TCL compounds	NA	-
SB-072915	Dibromofluoromethane 1,2-Dichloroethane-d4	117 (85-115) 127 (70-120)	All TCL compounds	J (all detects)	A

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
225639-LCS/D (DIC85W04-072815 DIC85W06-072815X ER-072815 ER-072915 SB-072915)	Chloromethane	129 (40-125)	-	NA	-
225681-LCS/D (DIC85W06-072815 DIC85W03-072915 DIC85W01R-072915 TB-072815)	2,2-Dichloropropane	139 (70-135)	-	NA	-
225842-LCS/D (DIC85W02RA-072915)	2,2-Dichloropropane	141 (70-135)	-	NA	-

Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples DIC85W06-072815 and DIC85W06-072815X were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	DIC85W06-072815	DIC85W06-072815X	
Vinyl chloride	66	72	9 (≤25)
Acetone	70	47	39 (≤25)
Carbon disulfide	0.7	1.3U	200 (≤25)
trans-1,2-Dichloroethene	3.0	2.5	18 (≤25)
2-Butanone	43	39	10 (≤25)
cis-1,2-Dichloroethene	3.7	3.8	3 (≤25)
Benzene	0.7	0.8	13 (≤25)

Compound	Concentration (ug/L)		RPD (Limits)
	DIC85W06-072815	DIC85W06-072815X	
Trichloroethene	0.6	0.7	15 (≤25)
4-Methyl-2-pentanone	1.0	1.3	26 (≤25)
Toluene	1.1	1.0	10 (≤25)
Chlorobenzene	24	23	4 (≤25)
Ethylbenzene	0.9	1.0	11 (≤25)
m,p-Xylenes	3.6	4.1	13 (≤25)
o-Xylene	3.4	3.5	3 (≤25)
Isopropylbenzene	0.8	0.7	13 (≤25)
n-Propylbenzene	1.8	1.7	6 (≤25)
1,3,5-Trimethylbenzene	4.8	4.9	2 (≤25)
1,2,4-Trimethylbenzene	22	23	4 (≤25)
sec-Butylbenzene	0.8	0.8	0 (≤25)
p-Isopropyltoluene	1.1	1.2	9 (≤25)
1,3-Dichlorobenzene	7.8	7.4	5 (≤25)
1,4-Dichlorobenzene	35	32	9 (≤25)
n-Butylbenzene	0.5	0.7	33 (≤25)
1,2-Dichlorobenzene	12	11	9 (≤25)
Naphthalene	4.3	4.6	7 (≤25)

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to head space, ICV %D, continuing calibration %D, and surrogate %R, data were qualified as estimated in ten samples.

Due to equipment rinsate contamination, data were qualified as not detected in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Mare Island, BGMP
Volatiles - Data Qualification Summary - SDG 268556

Sample	Compound	Flag	A or P	Reason
DIC85W06-072815	All TCL compounds except Freon 12 Bromomethane 2,2-Dichloropropane n-Butylbenzene 1,2-Dibromo-3-chloropropane Naphthalene	J (all detects) UJ (all non-detects)	A	Sample condition (headspace)
ER-072815	Freon 113 Carbon disulfide	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Sample condition (headspace)
DIC85W04-072815 DIC85W06-072815 DIC85W06-072815X DIC85W03-072915 ER-072815 DIC85W02RA-072915 DIC85W01R-072915 ER-072915 TB-072815 SB-072915	Freon 12	UJ (all non-detects)	A	Initial calibration verification (%D)
DIC85W04-072815 DIC85W06-072815X ER-072815 ER-072915 SB-072915	Vinyl acetate	UJ (all non-detects)	A	Initial calibration verification (%D)
DIC85W04-072815 DIC85W06-072815X ER-072815 ER-072915 SB-072915 DIC85W06-072815 DIC85W03-072915 DIC85W02RA-072915 DIC85W01R-072915 TB-072815	Vinyl acetate	UJ (all non-detects)	A	Continuing calibration (%D)
DIC85W06-072815 DIC85W03-072915 DIC85W01R-072915 TB-072815	Freon 12 Bromomethane	UJ (all non-detects) UJ (all non-detects)	A	Continuing calibration (%D)
DIC85W02RA-072915	Freon 12 2,2-Dichloropropane	UJ (all non-detects) UJ (all non-detects)	A	Continuing calibration (%D)
DIC85W04-072815	All TCL compounds except Freon 113 Carbon disulfide	J (all detects)	A	Surrogate spikes (%R)

Sample	Compound	Flag	A or P	Reason
DIC85W06-072815	Freon 12 Bromomethane 2,2-Dichloropropane n-Butylbenzene 1,2-Dibromo-3-chloropropane Naphthalene	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Surrogate spikes (%R)
DIC85W06-072815X	All TCL compounds except Freon 113 Carbon disulfide 1,1-Dichloropropene Carbon tetrachloride 1,2-Dichloroethane Benzene Trichloroethene 1,2-Dichloropropane Bromodichloromethane Dibromomethane 4-Methyl-2-pentanone cis-1,3-Dichloropropene	J (all detects)	A	Surrogate spikes (%R)
ER-072815	All TCL compounds except Freon 113 Carbon disulfide	J (all detects)	A	Surrogate spikes (%R)
SB-072915	All TCL compounds	J (all detects)	A	Surrogate spikes (%R)

Mare Island, BGMP
Volatiles - Laboratory Blank Data Qualification Summary - SDG 268556

No Sample Data Qualified in this SDG

Mare Island, BGMP
Volatiles - Field Blank Data Qualification Summary - SDG 268556

Sample	Compound	Modified Final Concentration	A or P
DIC85W06-072815	Carbon disulfide	0.7U ug/L	A

LDC #: 34833A1 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/12/15
SDG #: 268556 Level III Page: 1 of 2
Laboratory: Curtis & Tompkins, LTD. Reviewer:
2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	SW, Δ	
II.	GC/MS Instrument performance check	Δ	
III.	Initial calibration/ICV	Δ, SW	% RSD ≤ 15 ICV ≤ 20
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	Δ	
VI.	Field blanks	SW	ER = 5, 8* TB = 9* SB = 10
VII.	Surrogate spikes	SW	
VIII.	Matrix spike/Matrix spike duplicates	Δ	268557-1 MS/D
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	SW	D = 2, 3
XI.	Internal standards	Δ	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; *ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	2= F1, 3, G DIC85W04-072815	268556-001	Water	07/28/15
2 3	4= F1, B, OO, III, MM, MMM DIC85W06-072815	268556-002	Water	07/28/15
3 1	2= G1, G, QQ, O, L, V, S, Q, P, RR, Y, R DIC85W06-072815X	268556-003	Water	07/28/15
4 3	4= F1, B, OO, MM, MMM DIC85W03-072915	268556-004	Water	07/29/15
5 1	5= G1, G ER-072815	268556-005	Water	07/29/15
6 3	R 6= F1, B, OO, MM, MMM DIC85W02A-072915	268556-006	Water	07/29/15
7 3	4= F1, B, OO, MM, MMM DIC85W01R-072915	268556-007	Water	07/29/15
8 1	2= G1, G ER-072915	268556-008	Water	07/29/15
9 3	4= F1, B, OO, MM, MMM TB-072815	268556-009	Water	07/28/15
10 1	2= G1, G SB-072915	268556-010	Water	07/29/15
11 1	225639-MB			
12 2	225691-MB			
13				

LDC #: 33833A1

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 8/12/15

SDG #: 268556

Page: 2 of 2

Laboratory: Curtis & Tompkins, LTD.

Reviewer:

2nd Reviewer:

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

	Client ID	Lab ID	Matrix	Date
14				
15				

Notes:

3	225638 - MB						
4	225681 - MB						
5	225767 - MB						
6	225842 - MB						

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,-3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

LDC #: 34833A1

VALIDATION FINDINGS WORKSHEET
Technical Holding Times

Reviewer: FT
2nd Reviewer: a

All circled dates have exceeded the technical holding times.
Y N N/A Were all cooler temperatures within validation criteria?
Y N N/A Were air bubbles > 1/4 inch or was headspace present in the vials?

METHOD : GC/MS VOA (EPA SW 846 Method 8260C)

Sample ID	Matrix	Preserved	Sampling Date	Extraction date	Analysis date	Total # of Days	Qualifier
2	W	voa	contained	headspace			J/UJ/A
						qual	All
					except FI,	B, OO,	
					III, MM,	MMM	
					(ND + Det)		
5	W	voa	contained	headspace			J/UJ/A
						qual G1, G	
						(ND + Det)	

TECHNICAL HOLDING TIME CRITERIA

Water unpreserved: Aromatic within 7 days, non-aromatic within 14 days of sample collection.
Water preserved: Within 14 days of sample collection.
Soil: Within 14 days of sample collection.

LDC #: 34833A1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Page: 1 of 1
Reviewer: EJ
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ~~≤30~~ 20 %D?

#	Date	Standard ID	Compound	Finding %D (Limit: ~~≤30.0%~~ 20)	Associated Samples	Qualifications
	6/23/15	ICV-08	F1	27	1→10, 225639-MB, 225681-MB, 225842-MB	J/UJ/A (ND)
	↓	↓	HH	30	1, 3, 5, 8, 10, 225639-MB	J/UJ/A (ND)

ICVvoa.wpd

LDC #: 34833A /

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: a

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	7/30/15	hgu08-ccv	HH	21		1, 3, 5, 8, 10, 225639-MB	J/UJ/Δ (ND)
	7/31/15	hgv04-ccv	F1	41		2, 4, ~~6~~, 7, 9, 225681-MB	J/UJ/Δ (ND)
			B	28			
	8/6/15	hh604-ccv	F1	44		6, 225842-MB ↓	J/UJ/Δ (ND)
			~~BB~~	33			
	7/30/15	kgu06-ccv	HH	26		2, 4, 6, 7, 9, 225638-MB	J/UJ/Δ (ND)

LDC #: 34833A1

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: a

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 7/29/15
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: ER Associated Samples: 1-3

Compound	Blank ID		Sample Identification							
	5	5X		2						
G	0.2	1.0		0.7/4						

Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 7/29/15
Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: SB Associated Samples: 5, 8 (ND)

Compound	Blank ID	Sample Identification								
	10									
M	2.4									
CC	0.2									
RRR	0.1									

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 34833A /

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: FT
2nd Reviewer: a

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A F7 If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
	1	DCE	122 (70-120)	J det/A qual all except G1, G (ND + Det)
			( )	
			( )	
	2	DCE	131 (70-120)	J det/A qual F1, B, OO, III, MM, MMM (ND + Det)
			( )	
			( )	
	3	DCE	125 (70-120)	J det/A qual all except G1, G, QQ, O, L, V, S, Q, P, RR, Y, R (ND+Det)
			( )	
			( )	
	4	DCE	133 (70-120)	J det/A qual F1, B, OO, MM, MMM (ND)
			( )	
			( )	
	5	DCE	125 (70-120)	J det/A qual All except G1, G (ND+Det)
			( )	
			( )	
	6	DCE	133 (70-120)	J det/A qual F1, B, OO, MM, MMM (ND)
			( )	
			( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	85-115	85-120
SMC2 (BFB) = Bromofluorobenzene	85-120	75-120
SMC3 (DCE) = 1,2-Dichloroethane-d4	60-120	70-120
SMC4 (DFM) = Dibromofluoromethane	75-125	85-115

SUR.wpd

LDC #: 34833A1

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A F7 If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
	7	DCE	139 (70-120)	Jdet/A qual F1, B, ~~OO~~, MM, MMM (ND)
			( )	
			( )	
	8	DFM	117 (85-115)	Jdet/A qual All (ND)
		DCE	126 (70-120)	↓
			( )	
	9	DCE	129 (70-120	Jdet/A qual ~~ABL~~ F7 All (ND)
		TOL	139 (85-120	↓
			( )	
			( )	
	10	DFM	117 (85-115)	Jdet/A qual All (ND+Det)
		DCE	127 (70-120)	↓
			( )	
	225681-MB	DCE	122 (70-120	Jdet/P qual All (ND)
			( )	
	225842-MB	DCE	124 (70-120	Jdet/P qual All (ND)
			( )	
			( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	85-115	85-120
SMC2 (BFB) = Bromofluorobenzene	85-120	75-120
SMC3 (DCE) = 1,2-Dichloroethane-d4	60-120	70-120
SMC4 (DFM) = Dibromofluoromethane	75-125	85-115

LDC #: 34833A1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
				( )	( )	( )		
		225639-LCS/D	A	129 (40-125)	( )	( )	1, 3, 5, 8, 10, 225639-MB	Jdet/P (ND)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
		225681-LCS/D	~~OO~~	139 (70-135	( )	( )	2, 4, 7, 9, 225681-MB	Jdet/P (ND)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
		225842-LCS/D	~~OO~~	141 (70-135)	( )	( )	6, 225842-MB	Jdet/P (ND)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 34833A1

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: FT
2nd Reviewer: GW

METHOD: VOA (EPA SW 846 Method 8260B)

Analyte	Concentration (ug/L)		RPD ≤25
	2	3	
C	66	72	9
F	70	47	39
G	0.7	1.3U	200
PPP	3.0	2.5	18
M	43	39	10
QQQ	3.7	3.8	3
V	0.7	0.8	13
S	0.6	0.7	15
Y	1.0	1.3	26
CC	1.1	1.0	10
DD	24	23	4
EE	0.9	1.0	11
RRR	3.6	4.1	13
SSS	3.4	3.5	3
VV	0.8	0.7	13
YY	1.8	1.7	6
AAA	4.8	4.9	2
DDD	22	23	4
EEE	0.8	0.8	0
GGG	1.1	1.2	9
FFF	7.8	7.4	5
HHH	35	32	9
III	0.5	0.7	33
JJJ	12	11	9
MMM	4.3	4.6	7

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Mare Island, BGMP

LDC Report Date: August 14, 2015

Parameters: Dissolved Metals

Validation Level: Level III

Laboratory: Curtis & Tompkins, LTD.

Sample Delivery Group (SDG): 268556

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DIC85W06-072815	268556-002	Water	07/28/15
DIC85W06-072815X	268556-003	Water	07/28/15
ER-072815	268556-005	Water	07/29/15
SB-072915	268556-010	Water	07/29/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California (July 2014) and Addendum 1 (August 2014), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Dissolved Arsenic, Iron, and Manganese by Environmental Protection Agency (EPA) SW 846 Method 6010C

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

III. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met. All criteria were within QC limits.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample ER-072815 was identified as an equipment rinsate. No contaminants were found.

Sample SB-072915 was identified as a source blank. No contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For DIC85W07-072815MS/MSD (from SDG 268557), no data were qualified for Manganese percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. ICP Serial Dilution

ICP serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

Samples DIC85W06-072815 and DIC85W06-072815X were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)
	DIC85W06-072815	DIC85W06-072815X	
Arsenic	29	28	4 (≤25)
Iron	2300	8700	116 (≤25)
Manganese	4500	4500	0 (≤25)

XI. Sample Result Verification

Raw data were not reviewed for Level III validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Mare Island, BGMP
Dissolved Metals - Data Qualification Summary - SDG 268556

No Sample Data Qualified in this SDG

Mare Island, BGMP
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 268556

No Sample Data Qualified in this SDG

Mare Island, BGMP
Dissolved Metals - Field Blank Data Qualification Summary - SDG 268556

No Sample Data Qualified in this SDG

LDC #: 34833A4a 30 b

SDG #: 268556

Laboratory: Curtis & Tompkins, LTD.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 8/13/15

Page: 1 of 1

Reviewer: JD

2nd Reviewer: [illegible]

METHOD: Dissolved As, Fe, & Mn (EPA SW 846 Method ~~6020A~~ 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/28-29/15
~~II.~~	~~ICP/MS Tune~~	N	Not Utilized
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	ND	SB=(4) ER=(3)
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D=DIC85W07-072815MS/D(SDG:268557)
VIII.	Duplicate sample analysis	N	
IX.	ICP Serial Dilution	A	SER=DIC85W07-072815(SDG:268557)
X.	Laboratory control samples	A	LCS/D
XI.	Field Duplicates	SW	FD=(1,2)
~~XII.~~	~~Internal Standard (ICP-MS)~~	N	Not Utilized
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

*See Below

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	DIC85W06-072815	268556-002	Water	07/28/15
2	DIC85W06-072815X	268556-003	Water	07/28/15
3	ER-072815	268556-005	Water	07/29/15
4	SB-072915	268556-010	Water	07/29/15
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

MS/D= Mn > 4x

LDC #: 34833A4 (b) 30

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: SD
2nd reviewer: [illegible]

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1-4	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,

Comments: Mercury by CVAA if performed

LDC#: 34833A4a/b
30

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: JD
2nd Reviewer: [illegible]

METHOD: Metals (EPA Method 6010B/7000)

Y N NA Were field duplicate pairs identified in this SDG?
Y N NA Were target analytes detected in the field duplicate pairs?

Analyte	Concentration (ug/L)		RPD (≤25)
	1	2	
Arsenic	29	28	4
Iron	2300	8700	116
Manganese	4500	4500	0

\\LDCFILESERVER\Validation\FIELD DUPLICATES\FD_inorganic\34833A4a.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Mare Island, BGMP

LDC Report Date: August 13, 2015

Parameters: Volatiles

Validation Level: Level IV

Laboratory: Curtis & Tompkins, LTD.

Sample Delivery Group (SDG): 268557

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DIC85W07-072815	268557-001	Water	07/28/15
DIC85W07-072815MS	268557-001MS	Water	07/28/15
DIC85W07-072815MSD	268557-001MSD	Water	07/28/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California (July 2014) and Addendum 1 (August 2014), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
06/25/15	Freon 12 Vinyl acetate	27 30	All samples in SDG 268557	UJ (all non-detects) UJ (all non-detects)	A

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
07/30/15	Vinyl acetate	21	All samples in SDG 268557	UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample ER-072815 (from SDG 26B556) was identified as an equipment rinsate. No contaminants were found with the following exceptions:

Blank ID	Collection Date	Compound	Concentration	Associated Samples
ER-072815	07/29/15	Carbon disulfide	0.2 ug/L	DIC85W07-072815

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Affected Compound	Flag	A or P
DIC85W07-072815	1,2-Dichloroethane-d4	123 (70-120)	All TCL compounds except Freon 113 Carbon disulfide	NA	-

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
225639-LCS/D (All samples in SDG 268557)	Chloromethane	129 (40-125)	-	NA	-

Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

All compound quantitations met validation criteria.

XIII. Target Compound Identifications

All target compound identifications met validation criteria.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to ICV %D and continuing calibration %D, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Mare Island, BGMP
Volatiles - Data Qualification Summary - SDG 268557

Sample	Compound	Flag	A or P	Reason
DIC85W07-072815	Freon 12 Vinyl acetate	UJ (all non-detects) UJ (all non-detects)	A	Initial calibration verification (%D)
DIC85W07-072815	Vinyl acetate	UJ (all non-detects)	A	Continuing calibration (%D)

Mare Island, BGMP
Volatiles - Laboratory Blank Data Qualification Summary - SDG 268557

No Sample Data Qualified in this SDG

Mare Island, BGMP
Volatiles - Field Blank Data Qualification Summary - SDG 268557

No Sample Data Qualified in this SDG

LDC #: 34833B1 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/12/15
SDG #: 268557 Level IV Page: 1 of 1
Laboratory: Curtis & Tompkins, LTD. Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, SW	% RSD ≤ 15 ICV ≤ 20
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	SW	ER- ER-072815
VII.	Surrogate spikes	SW	
VIII.	Matrix spike/Matrix spike duplicates	A	
IX.	Laboratory control samples	SW	LCS ID
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	A	
XIII.	Target compound identification	A	
XIV.	System performance	A	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	2= G1, G DIC85W07-072815	268557-001	Water	07/28/15
2	DIC85W07-072815MS	268557-001MS	Water	07/28/15
3	DIC85W07-072815MSD	268557-001MSD	Water	07/28/15
4				
5				
6				
7				
8				

Notes:

1	225639-MB						
2	225691-MB						

LDC #: 34833B1

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: Volatiles (EPA SW 846 Method 8260C)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Was cooler temperature criteria met?	✓			
II. GC/MS Instrument performance check				
Were the BFB performance results reviewed and found to be within the specified criteria?	✓			
Were all samples analyzed within the 12 hour clock criteria?	✓			
IIIa. Initial calibration				
Did the laboratory perform a 5 point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 15% and relative response factors (RRF) within method criteria?	✓			
Was a curve fit used for evaluation? If yes, did the initial calibration meet the curve fit acceptance criteria of ≥ 0.990?	✓			
IIIb. Initial Calibration Verification				
Was an initial calibration verification standard analyzed after each initial calibration for each instrument?	✓			
Were all percent differences (%D) ≤ 20%?		✓		
IV. Continuing calibration				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	✓			
Were all percent differences (%D) ≤ 20% and relative response factors (RRF) within method criteria?		✓		
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed at least once every 12 hours for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
VI. Field blanks				
Were field blanks were identified in this SDG?	✓			
Were target compounds detected in the field blanks?	✓			
VII. Surrogate spikes				
Were all surrogate percent recovery (%R) within QC limits?		✓		
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	✓			
VIII. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	✓			
Was a MS/MSD analyzed every 20 samples of each matrix?	✓			

LDC #: 34833B1

VALIDATION FINDINGS CHECKLIST

Reviewer: EB
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	✓			
IX. Laboratory control samples				
Was an LCS analyzed for this SDG?	✓			
Was an LCS analyzed per analytical batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
X. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
XI. Internal standards				
Were internal standard area counts within -50% to +100% of the associated calibration standard?	✓			
Were retention times within ± 30 seconds of the associated calibration standard?	✓			
XII. Compound quantitation				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XIII. Target compound identification				
Were relative retention times (RRT's) within ± 0.06 RRT units of the standard?	✓			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	✓			
Were chromatogram peaks verified and accounted for?	✓			
XIV. System performance				
System performance was found to be acceptable.	✓			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl choride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP.
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ.
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 34833B 1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ≤~~30 %~~ 20 %D?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤~~30.0%~~ 20)	Associated Samples	Qualifications
	6/25/15	ICV-08	F1	27	All	J/UJ/A (ND)
			HH	30	↓	↓

ICVvoa.wpd

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CL

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	7/30/15	hgu08-ccv	HH	21		All	J/UJ/A (ND)

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Field Blanks

Page: 1 of 1
Reviewer: FT
2nd Reviewer: CL

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)
Y N N/A Were field blanks identified in this SDG?
Y N N/A Were target compounds detected in the field blanks?
Blank units: ug/L **Associated sample units:** ug/L
Sampling date: 7/29/15

ER = ER-072815
(SDG# 268556)

Field blank type: (circle one) Trip Blank / Field Blank / Rinsate / Source Blank/ Equipment Blank/Other: ER Associated Samples: 1 (ND)

Compound	Blank ID		Sample Identification							
	ER	SX								
G	0.2	1.0								
CRQL										

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:
Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
	1	DCE	123 (70-120)	J det/A qual all except G1, G (ND)
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	85-115	85-120
SMC2 (BFB) = Bromofluorobenzene	85-120	75-120
SMC3 (DCE) = 1,2-Dichloroethane-d4	60-120	70-120
SMC4 (DFM) = Dibromofluoromethane	75-125	85-115

LDC #: 3X833B /

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 7
Reviewer: FT
2nd Reviewer: OL

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
			( )	( )	( )		
	225639-LCS1D	A	129 (40-125)	( )	( )	All	J det/p (ND)
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Page: 1 of 1
Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$RRF = (A_x)(C_{is})/(A_{is})(C_x)$
average RRF = sum of the RRFs/number of standards
%RSD = 100 * (S/X)

A_x = Area of compound,
C_x = Concentration of compound,
S = Standard deviation of the RRFs
X = Mean of the RRFs

A_{is} = Area of associated internal standard
C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Reported RRF (10 std)	Recalculated RRF (10 std)	Reported Average RRF (initial)	Recalculated Average RRF (initial)	Reported %RSD	Recalculated %RSD
1	GCMS08	6/25/15	C (1st internal standard)	0.6029	0.6029	0.6642	0.6642	9	9
			S (2nd internal standard)	0.3418	0.3418	0.3451	0.3451	8	8
			EE (3rd internal standard)	1.8615	1.8615	1.7475	1.7475	13	13
			HHH (4th internal standard)	1.5229	1.5229	1.5176	1.5176	10	10
2	GCMS09	7/7/15	G (1st internal standard)	1.5744	1.5744	1.6924	1.6929	7	7
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
3			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						
4			(1st internal standard)						
			(2nd internal standard)						
			(3rd internal standard)						
			(4th internal standard)						

Comments: Refer to Initial Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference internal Standard)	Average RRF (initial)	Reported RRF (CC)	Recalculated RRF (CC)	Reported %D	Recalculated %D
1	hg408	7/30/15	C (1st internal standard)	0.6642	0.6927	0.6927	4	4
			S (2nd internal standard)	0.3451	0.3101	0.3101	10	10
			EE (3rd internal standard)	1.7475	1.7009	1.7009	3	3
			HHH (4th internal standard)	1.5176	1.4040	1.4040	4	4
2			G (1st internal standard)	1.6924	1.6734	1.6734	1	1
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
3			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					
4			(1st internal standard)					
			(2nd internal standard)					
			(3rd internal standard)					
			(4th internal standard)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Surrogate Results Verification

Reviewer: FT
2nd reviewer: G

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS * 100

Where: SF = Surrogate Found
SS = Surrogate Spiked

Sample ID: 1 5X

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	250.0	53.92	108	108	0
1,2-Dichloroethane-d4	↓	61.70	123	123	↓
Toluene-d8	↓	47.91	96	96	↓
Bromofluorobenzene	↓	50.17	100	100	↓

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

LDC #: 34833B

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentration

RPD = I MSC - MSC I * 2/(MSC + MSDC)

MSC = Matrix spike concentration; MSDC = Matrix spike duplicate concentration

MS/MSD sample: 2 + 3

Compound	Spike Added (ug/L)		Sample Concentration (ug/L)	Spiked Sample Concentration (ug/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	62.50	62.50	ND	53.79	51.43	86	86	82	82	5	5
Trichloroethene	↓	↓	↓	65.90	57.86	105	105	93	93	13	13
Benzene	↓	↓	↓	68.73	59.72	110	110	96	96	14	14
Toluene	↓	↓	↓	63.98	58.31	102	102	93	93	9	9
Chlorobenzene	↓	↓	10.86	78.31	73.00	108	102	99	99	7	7

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample Results Verification

Reviewer: FT
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratoy control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * SSC/SA Where: SSC = Spiked sample concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboraotry control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: 225639-LCS1D

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	12.50	12.50	11.72	11.24	94	94	90	90	4	4
Trichloroethene	↓	↓	12.66	12.34	101	101	99	99	3	3
Benzene	↓	↓	13.14	12.58	105	105	101	101	4	4
Toluene	↓	↓	13.17	12.70	105	105	102	102	4	4
Chlorobenzene	↓	↓	13.26	13.01	106	106	104	104	2	2

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 34833B1

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: FT
2nd reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Y N N/A Were all reported results recalculated and verified for all level IV samples?

Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(DF)}{(A_{is})(RRF)(V_o)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
RRF	=	Relative response factor of the calibration standard.
V_o	=	Volume or weight of sample pruged in milliliters (ml) or grams (g).
Df	=	Dilution factor.
%S	=	Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. #1, 1,4-Dichlorobenzene

Conc. = $\frac{(40719)(50)(5)}{(939487)(0.65894)(\quad)}$

= 1.5176

7.13 ug/L

#	Sample ID	Compound	Reported Concentration ( )	Calculated Concentration ( )	Qualification

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Mare Island, BGMP

LDC Report Date: August 14, 2015

Parameters: Dissolved Metals

Validation Level: Level IV

Laboratory: Curtis & Tompkins, LTD.

Sample Delivery Group (SDG): 268557

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
DIC85W07-072815	268557-001	Water	07/28/15
DIC85W07-072815MS	268557-001MS	Water	07/28/15
DIC85W07-072815MSD	268557-001MSD	Water	07/28/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California (July 2014) and Addendum 1 (August 2014), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Dissolved Arsenic, Iron, and Manganese by Environmental Protection Agency (EPA) SW 846 Method 6010C

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Instrument Calibration

Initial and continuing calibrations were performed as required by the methods.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

III. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met. All criteria were within QC limits.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

V. Field Blanks

Sample ER-072815 (from SDG 268556) was identified as an equipment rinsate. No contaminants were found.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For DIC85W07-072815MS/MSD, no data were qualified for Manganese percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. ICP Serial Dilution

ICP serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Mare Island, BGMP
Dissolved Metals - Data Qualification Summary - SDG 268557

No Sample Data Qualified in this SDG

Mare Island, BGMP
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 268557

No Sample Data Qualified in this SDG

Mare Island, BGMP
Dissolved Metals - Field Blank Data Qualification Summary - SDG 268557

No Sample Data Qualified in this SDG

LDC #: 34833B4~~a~~b (JD)

SDG #: 268557

Laboratory: Curtis & Tompkins, LTD.

VALIDATION COMPLETENESS WORKSHEET

Level IV

Date: 8/13/15

Page: 1 of 1

Reviewer: JD

2nd Reviewer: a

METHOD: Dissolved As, Fe, & Mn (EPA SW 846 Method ~~6020A~~ 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	7/28/15
~~II.~~	~~ICP/MS Tune~~	~~N~~	~~Not Utilized~~ a
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	ND	ER= ER-072815(SDG:268556)
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D=(2,3) = Mn74X
VIII.	Duplicate sample analysis	N	
IX.	ICP Serial Dilution	A	SER =DIC85W06-072815(SDG:268556)
X.	Laboratory control samples	A	LCS/D
XI.	Field Duplicates	N	
~~XII.~~	~~Internal Standard (ICP-MS)~~	~~N~~	~~Not Utilized~~ a
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	DIC85W07-072815	268557-001	Water	07/28/15
2	DIC85W07-072815MS	268557-001MS	Water	07/28/15
3	DIC85W07-072815MSD	268557-001MSD	Water	07/28/15
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

LDC #: 34833B4ab
30

VALIDATION FINDINGS CHECKLIST

Reviewer: 30
2nd Reviewer: a

Method: Metals (EPA SW 846 Method 6010B/7000/6020)

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
All technical holding times were met.	✓			
Cooler temperature criteria was met.	✓			
II. ICP/MS Tune				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?			✓	
Were %RSD of isotopes in the tuning solution ≤5%?			✓	
III. Calibration				
Were all instruments calibrated daily, each set-up time?	✓			
Were the proper number of standards used?	✓			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	✓			
Were all initial calibration correlation coefficients ≥ 0.995?	✓			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	✓			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		✓		
V. ICP Interference Check Sample				
Were ICP interference check samples performed daily?	✓			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	✓			
VI. Matrix spike/Matrix spike duplicates				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	✓			
Were the MS/MSD or duplicate relative percent differences (RPD) ≤ 20% for waters and ≤ 35% for soil samples? A control limit of +/- RL(+/-2X RL for soil) was used for samples that were ≤ 5X the RL, including when only one of the duplicate sample values were ≤ 5X the RL.	✓			
VII. Laboratory control samples				
Was an LCS anaylzed for this SDG?	✓			
Was an LCS analyzed per extraction batch?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	✓			

LDC #: 34833B34 b 3D

VALIDATION FINDINGS CHECKLIST

Reviewer: 3D
2nd Reviewer: 02

Validation Area	Yes	No	NA	Findings/Comments
VIII. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?			✓	
If the %Rs were outside the criteria, was a reanalysis performed?			✓	
IX. ICP Serial Dilution				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?	✓			
Were all percent differences (%Ds) < 10%?	✓			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		✓		
X. Sample Result Verification				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	✓			
XI. Overall assessment of data				
Overall assessment of data was found to be acceptable.	✓			
XII. Field duplicates				
Field duplicate pairs were identified in this SDG.		✓		
Target analytes were detected in the field duplicates.			✓	
XIII. Field blanks				
Field blanks were identified in this SDG.	✓			
Target analytes were detected in the field blanks.		✓		

LDC #: 34833B4db
JD

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: JD
2nd reviewer: a

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
QC-23	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti,

Comments: Mercury by CVAA if performed

LDC #: 34883B1 4b
30

VALIDATION FINDINGS WORKSHEET
Initial and Continuing Calibration Calculation Verification

Page: 1 of 1
Reviewer: SD
2nd Reviewer: 9

METHOD: Trace Metals (See cover)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$\%R = \frac{Found}{True} \times 100$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated %R	Reported %R	Acceptable (Y/N)
ICV 20:08	ICP (Initial calibration)	As	5027 ug/L	5000 ug/L	101 %R	101 %R	Y
	ICP/MS (Initial calibration)						
	CVAA (Initial calibration)						
CCV 1:00	ICP (Continuing calibration)	Fe	20157 ug/L	20000 ug/L	101 %R	101 %R	Y
	ICP/MS (Continuing calibration)						
	CVAA (Contining calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibation)						

Comments: _____

LDC #: ~~34883B14~~ b 30

VALIDATION FINDINGS WORKSHEET
Level IV Recalculation Worksheet

Page: 1 of 1
Reviewer: SD
2nd Reviewer: 9

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{Found}{True} \times 100$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$

Where, S = Original sample concentration
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$\%D = \frac{|I-SDR|}{I} \times 100$

Where, I = Initial Sample Result (mg/L)
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated %R / RPD / %D	Reported %R / RPD / %D	Acceptable (Y/N)
ICS AB 20:37	ICP interference check	Mn	477 ug/L	500 ug/L	95%R	95%R	Y
LCS 12:49	Laboratory control sample	As	95.49 ug/L	100 ug/L	95%R	95%R	
MS 16:43	Matrix spike	Fe	(SSR-SR) 10210 ug/L	10000 ug/L	102%R	102%R	
MSD 17:07	Duplicate	Mn	1980 ug/L	1987 ug/L	0%RPD	0%RPD	
SER 1:38	ICP serial dilution	Mn	1995 ug/L	1970 ug/L	1%D	1%D	

Comments: _____

LDC #: 34883B4 & 30

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: JD
2nd reviewer: a

METHOD: Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Have results been reported and calculated correctly?
Y N N/A Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y N N/A Are all detection limits below the CRDL?

Detected analyte results for (1) Fe were recalculated and verified using the following equation:

Concentration = (RD)(FV)(Dil) / (In. Vol.)

RD = Raw data concentration
FV = Final volume (ml)
In. Vol. = Initial volume (ml) or weight (G)
Dil = Dilution factor

Recalculation:

RD = 330 ug/L

#	Sample ID	Analyte	Reported Concentration (ug/L)	Calculated Concentration (ug/L)	Acceptable (Y/N)
	1	As	13	13	Y
		Fe	330	330	↓
		Mn	2000	2000	↓

Note:

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Mare Island, BGMP

LDC Report Date: August 13, 2015

Parameters: Volatiles

Validation Level: Level III

Laboratory: Curtis & Tompkins, LTD.

Sample Delivery Group (SDG): 268558

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
B742-L-WC-072915	268558-001	Water	07/29/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California (July 2014) and Addendum 1 (August 2014), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) SW 846 Method 8260C

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. GC/MS Instrument Performance Check

A bromofluorobenzene (BFB) tune was performed at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration and Initial Calibration Verification

An initial calibration was performed as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 15.0% for all compounds.

Average relative response factors (RRF) for all compounds were within validation criteria.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
06/25/15	Freon 12 Vinyl acetate	27 30	All samples in SDG 268558	UJ (all non-detects) UJ (all non-detects)	A

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

The percent differences (%D) were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
07/30/15	Vinyl acetate	21	All samples in SDG 268558	UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within validation criteria.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample ER-072915 (from SDG 26B556) was identified as an equipment rinsate. No contaminants were found.

VII. Surrogates

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Affected Compound	Flag	A or P
B742-L-WC-072915	Dibromofluoromethane 1,2-Dichloroethane-d4	116 (85-115) 129 (70-120)	All TCL compounds	NA	-

VIII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
225639-LCS/D (All samples in SDG 268558)	Chloromethane	129 (40-125)	-	NA	-

Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Internal Standards

All internal standard areas and retention times were within QC limits.

XII. Compound Quantitation

Raw data were not reviewed for Level III validation.

XIII. Target Compound Identifications

Raw data were not reviewed for Level III validation.

XIV. System Performance

Raw data were not reviewed for Level III validation.

XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to ICV %D and continuing calibration %D, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the data validation all other results are considered valid and usable for all purposes.

Mare Island, BGMP
Volatiles - Data Qualification Summary - SDG 268558

Sample	Compound	Flag	A or P	Reason
B742-L-WC-072915	Freon 12 Vinyl acetate	UJ (all non-detects) UJ (all non-detects)	A	Initial calibration verification (%D)
B742-L-WC-072915	Vinyl acetate	UJ (all non-detects)	A	Continuing calibration (%D)

Mare Island, BGMP
Volatiles - Laboratory Blank Data Qualification Summary - SDG 268558

No Sample Data Qualified in this SDG

Mare Island, BGMP
Volatiles - Field Blank Data Qualification Summary - SDG 268558

No Sample Data Qualified in this SDG

LDC #: 34833C1 (4)
SDG #: 268558
Laboratory: Curtis & Tompkins, LTD.

VALIDATION COMPLETENESS WORKSHEET
Level III

Date: 8/12/15
Page: 1 of 1
Reviewer: EJ
2nd Reviewer: OF

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	GC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / SW	% RSD ≤ 15 ICV ≤ 20
IV.	Continuing calibration	SW	CCV ≤ 20
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	ER = ER-072915 (SDG # 268556)
VII.	Surrogate spikes	SW	
VIII.	Matrix spike/Matrix spike duplicates	A	268557-001 MS/D
IX.	Laboratory control samples	SW	LCS/D
X.	Field duplicates	N	
XI.	Internal standards	A	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	2: G1, G B742-L-WC-072915	268558-001	Water	07/29/15
2				
3				
4				
5				
6				
7				
8				

Notes:

1	225639-MB						
2	225691-MB						

TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,-3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl choride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO.1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3- Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1.
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1.
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1.
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1.
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1.

LDC #: 34833C1

VALIDATION FINDINGS WORKSHEET
Initial Calibration Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was an initial calibration verification standard analyzed after each ICAL for each instrument?

Y N N/A Were all %D within the validation criteria of ~~≤30%~~ 20 %D?

#	Date	Standard ID	Compound	Finding %D (Limit: ~~≤30.0%~~ 20)	Associated Samples	Qualifications
	6/25/15	ICV-08	F1	27	All	J/UJ/A (ND)
			HH	30	↓	↓

ICVvoa.wpd

LDC #: 34833C1

VALIDATION FINDINGS WORKSHEET
Continuing Calibration

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OL

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?
Y N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?
Y N N/A Were all %D and RRFs within the validation criteria of ≤20 %D and ≥0.05 RRF ?

#	Date	Standard ID	Compound	Finding %D (Limit: ≤20.0%)	Finding RRF (Limit: ≥0.05)	Associated Samples	Qualifications
	7/30/15	hgu08-ccv	HH	21		All	J/UJ/A (ND)

CONCAL.wpd

LDC #: 34833C)

VALIDATION FINDINGS WORKSHEET
Surrogate Spikes

Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

X N N/A Were all surrogate %R within QC limits?

Y N N/A If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R out of outside of criteria?

#	Sample ID	Surrogate	%Recovery (Limits)	Qualifications
	1	DFM	116 (85-115)	J all TCL (ND)
		DCE	129 (70-120)	↓
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	
			( )	

	QC Limits (Soil)	QC Limits (Water)
SMC1 (TOL) = Toluene-d8	85-115	85-120
SMC2 (BFB) = Bromofluorobenzene	85-120	75-120
SMC3 (DCE) = 1,2-Dichloroethane-d4	60-120	70-120
SMC4 (DFM) = Dibromofluoromethane	75-125	85-115

LDC #: 34833c1

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: FT
2nd Reviewer: OR

METHOD: GC/MS VOA (EPA SW 846 Method 8260C)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?
Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	Date	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		225639-LCSD	A	129 (40-125)	( )	( )	All	Det/P (ND)
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: Mare Island, BGMP

LDC Report Date: August 14, 2015

Parameters: Dissolved Metals

Validation Level: Level III

Laboratory: Curtis & Tompkins, LTD.

Sample Delivery Group (SDG): 268558

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
B742-L-WC-072915	268558-001	Water	07/29/15

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Basewide Groundwater Sampling, Well Installation, and Well Abandonment at Former Mare Island Naval Shipyard, Vallejo, California (July 2014) and Addendum 1 (August 2014), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.0 (July 2013), and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Dissolved Arsenic, Iron, and Manganese by Environmental Protection Agency (EPA) SW 846 Method 6010C

All sample results were subjected to Level III data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detect): The compound or analyte was analyzed for and positively identified by the laboratory; however the analyte should be considered non-detect at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

III. ICP Interference Check Sample (ICS) Analysis

The frequency of ICS analysis was met. All criteria were within QC limits.

IV. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For DIC85W07-072815MS/MSD (from SDG 268557), no data were qualified for Manganese percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration. Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

VIII. ICP Serial Dilution

ICP serial dilution analysis was performed on an associated project sample. The analysis criteria were met.

IX. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

X. Field Duplicates

No field duplicates were identified in this SDG.

XI. Sample Result Verification

Raw data were not reviewed for Level III validation.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

Mare Island, BGMP
Dissolved Metals - Data Qualification Summary - SDG 268558

No Sample Data Qualified in this SDG

Mare Island, BGMP
Dissolved Metals - Laboratory Blank Data Qualification Summary - SDG 268558

No Sample Data Qualified in this SDG

Mare Island, BGMP
Dissolved Metals - Field Blank Data Qualification Summary - SDG 268558

No Sample Data Qualified in this SDG

LDC #: 34833C4~~a~~b

SDG #: 268558

Laboratory: Curtis & Tompkins, LTD.

VALIDATION COMPLETENESS WORKSHEET

Level III

Date: 8/13/15

Page: 1 of 1

Reviewer: JD

2nd Reviewer: a

METHOD: Dissolved As, Fe, & Mn (EPA SW 846 Method ~~6020A~~ 6010C)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	07/29/15
II.	ICP/MS Tune	~~N~~	~~Not Utilized~~ a
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	A	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	MS/D = DK85W07-072815 MS/D (SDG: 268557) =MW7
VIII.	Duplicate sample analysis	N	
IX.	ICP Serial Dilution	A	SER = DK85W07-072815 (SDG: 268557) DK85W06-072815 (SDG: 268556)
X.	Laboratory control samples	A	LCS/D
XI.	Field Duplicates	N	
~~XII.~~	~~Internal Standard (ICP-MS)~~	~~N~~	~~Not Utilized~~ a
XIII.	Sample Result Verification	N	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	B742-L-WC-072915	268558-001	Water	07/29/15
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

Notes:

LDC #: 34833C46

VALIDATION FINDINGS WORKSHEET
Sample Specific Element Reference

Reviewer: 3D
2nd reviewer: CR

All circled elements are applicable to each sample.

Sample ID	Matrix	Target Analyte List (TAL)
1	W	Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
Analysis Method		
ICP		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
ICP-MS		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___
GFAA		Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Ni, K, Se, Ag, Na, Tl, V, Zn, Mo, B, Sn, Ti, ___ ___

Comments: Mercury by CVAA if performed

Appendix C1. Laboratory Analytical Reports

Appendix C2. Data Validation Reports